

2004 CONFERENCE
of the
ROMANIAN SOCIETY OF NEUROSURGERY



**9th French Course of
Neurosurgery in Romania**

Timișoara
29 September – 2 October 2004

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PROGRAM OF THE CONFERENCE

30.09.2004

08:30-09:30

Official Opening of the 2004 Conference of the RSN

PRESIDIUM:

Prof. A. V. Ciurea, MD (Romania), Prof. Al. Constantinovici, MD (Romania), Prof. Helmut Bertalanffy, MD (Germany), Prof. J.P. Houtteville, MD (France), Prof. Stefan Dragulescu, MD (Romania), Dipl. Eng. Constantin Ostaficiuc (Romania), Prof. Dr. Păun Ioan Otiman (Romania)

Opening speech: Prof. A. V. Ciurea, MD (Romania), Prof. C. Costea, MD (Romania), Prof. Stefan Dragulescu, MD (Romania), Dipl. Eng. Constantin Ostaficiuc (Romania) (translation by G. Vasilescu), Prof. Dr. Păun Ioan Otiman (Romania), Prof. Helmut Bertalanffy, MD (Germany)

09:30-10:00

Past, present and future of Timisoara Neurosurgical Clinic

Prof. C. Costea, MD (Romania)

10:00-11:10

Session I:

Meningomas of the posterior fossa

Chairmen

Prof. Al. Constantinovici (Romania), Prof. J.P. Houtteville (France)

10:00

1. Microsurgical treatment of posterior fossa meningiomas

H. Bertalanffy

10:15

2. Surgery of Meningiomas of the Posterior Fossa : Technique, pitfalls and results

Prof. Dr. Keki E Turel, Dr. Nootan Kumar Sharma, Dr. Joy Varghese, Dr. Shashank Joshi

10.30

3. RECURRENT MENINGIOMAS: LOCALIZATION ANALYSIS AND PROGNOSIS

Studel WI , Prowald A, Henn W, Ketter R

10:45

4. Histopathological and clinical assessment in pre-operatively embolized meningiomas: our experience.

Antonio De Tommasi,MD PhD, Claudio De Tommasi,MD, Francesca Sanguedolce,MD, Giuseppe Parisi,MD, Roberto De Blasi,MD, Antonella Cimmino,MD, Michele Occhiogrosso,MD PhD.

11:00

5. Microsurgery of posterior fossa meningiomas – a personal serie of 14 cases

Ion Poeata, Nicolai Ianovici, Gabriela Dumitrescu, Cornel Balan, Ziyad Faiyad, Ramona Filipescu, Alexandru Chiriac

11:10-11:30

Coffee Break

Cerebrolysin -The premier neurotrophic and neuroprotective treatment for traumatic brain injury and stroke

EBEWE Pharma

11:30-12:50

Session II

Cerebral cavernous angiomas

Chairmen

Prof. A. V. Ciurea (Romania), Prof. Helmut Bertalanffy (Germany)

11:30

1. Main Lecture Microsurgical treatment of cerebral cavernous angiomas

Prof. Dr. med. Helmut BERTALANFFY

11:45

2. CEREBRAL CAVERNOUS MALFORMATIONS - OUR EXPERIENCE

Prof. Dr. I. Poeata, Dr. Gabriela Dumitrescu, Dr. Adina Postelnicu

11:55

3. OUR POLICY IN INTRACRANIAL CAVERNOMAS

Ciurea AV, MD, D Voinescu, MD, Coman TC, MD, R Radulescu, MD, M Cristescu, MD.

12:10

4. Advances for a better knowledge of cerebral cavernomas. Surgical applications.

(J-P. HOUTTEVILLE, L. PETROVICIU, A. BORHA, Caen – Timisoara)

12:25

5. TRANS-SULCAL NEURONAVIGATOR-ASSISTED APPROACH TO CAVERNOUS ANGIOMAS IN ELOQUENT AREAS: OUR PRELIMINARY EXPERIENCE.

G. Gambardella M.D., O. Gervasio M.D., C. Zaccone M.D., E. Puglisi M.D.

12:40

6. Microsurgery of cavernomas located in eloquent areas and basal nuclei

Ion Poeata, Florin Gramada, Cornel Balan, Gabriela Dumitrescu, M Ivanov, Alin Iordache

12:50 Honorary Member RSN

13:00 – 14:00

Lunch (Sponsored by Stryker)

14:00 – 15:25

Session III, Part A

Varia 1 (Tumors)

Chairmen

Prof. N. Ianovici (Romania), Prof. Dr. med. Wolf-Ingo Steudel (Germany)

14:00

1. Newest of artificial walking

Prof. Jens HAASE, MD

14:15

2. Pediatric Pineal Tumors : Therapeutic strategy

Gabriel LENA. Department of Pediatric Neurosurgery. Marseille. France.

14:30

3. BEST MANAGEMENT IN PILOCYTIC ASTROCYTOMA OF THE POSTERIOR FOSSA IN CHILDREN.

AV Ciurea, A Tascu, TC Coman, A Iliescu, FM Brehar, M Lisievici.

14:45

3. PITUITARY ADENOMAS IN ELDERLY PATIENTS

Michael Buchfelder, MD, PhD and Ana Luiza Olivera Machado

15:00

3. SURGICAL TREATMENT OF THE CRANIOCEREBRAL AND PARANASAL SINUS TUMORS WITH SECONDARY INTRAORBITAL EXTENSION - THE CRANIOFACIAL RESECTION -

SZABO IOAN , SILVIU ALBU, BIANCA SZABO

15:10

6. Total Quality Management and Performance Paid Systems, Four Year Application Results at Hacettepe University

Prof. Tuncalp OZGEN, MD

15:25 – 16:00

Coffee Break

16:00 – 17:10

Session III, Part B

Varia 2 (Tumors)

Chairmen

Prof. A. Cristescu (Romania), Prof. J. Piek (Germany)

16:00

1. Acoustic Neuroma : Strategies for improved results

Keki E. TUREL

16:15

2. Initial Experience with Radiosurgery Linac-based in the Treatment of Acoustic Neuroma

Dr. Bujor Laurentiu¹, Dr. Ciubotaru Vasile², Dr. Perin Radu²

16:25

3. Dynamic infra-red real time intra-operative non-invasive functional assessment in neurosurgery

Mihai DIMĂNCESCU, MD

16:40

4. Cerebral arteriovenous malformations. Embolisation? Radiosurgery ? or combined techniques

Jean CHAZAL, Clermont-Ferrand

16:55

5. Vascular malformations of medulla. Neurointerventional approach

Pierre COURTHEOUX, Caen

17 :10 End of Session

Romanian evening event

01.10.2004

08:30 – 09:55

Session IV, Part A

Anterior circle of Willis aneurysms

Chairmen

Prof. C. Costea (Romania), Prof. T. Ozgen (Turkey)

08:30

1. The upcoming problems of maintaining technical standard for neurosurgeons clipping aneurysms

Prof. Jens HAASE, MD

08:45

2. New trends- advances in anterior circulation aneurysms microneurosurgery

Prof. Juha Antero HERNESNIEMI, MD, PhD

09:00

3. Treatment of intracranial aneurysms. What to do?

Jaques BRUNON, St. Etienne

09 :15

4. Giant intracranial aneurysms

Prof. Tuncalp OZGEN, MD

09:30

5. Microsurgical coil removal following migration of the coils during endovascular treatment of unruptured intracranial aneurysms

Uwe Spetzger

09:45

6. Giant aneurysms of internal carotid artery

Prof. dr. I. Poatea, dr. I. Streltov, dr. Z. Faiyad, dr. M. Rotaru, dr. C. Clement, dr. R. Filipescu

09:55

Coffee Break - Sponsor presentation - Topamax (Johnson & Johnson)

10:10 – 11:25

Session IV, Part B

Aneurysms - Part 2

Chairmen

Assoc. Prof. St. Florian (Romania), Prof. Jean-Michel Derlon (France)

10:10

1. NEUROSURGICAL PROBLEMS: MULTIPLE ANEURYSMS

Ciurea AV, MD, Tascu A, MD, Coman TC, MD, Nuteanu L, MD, Chefneaux A, MD

10:25

2. Treatment of intracranial aneurisms in patients all over the age 70: early surgery or endovascular coiling?

A.De Tommasi, C.De Tommasi, G.Occhiogrosso, T. Zaccaria, M.Occhiogrosso, G.Vailati.

10:40

3. Our Experience in Microsurgical Treatment of Anterior Circulation Aneurysms

Prof. Gr. Zapuhliu, dr.V. Parpaut, dr. E. Condrea, dr. V.Galearschi, dr. V. Andronache

10:50

4. THE OPTIMAL TREATMENT OF THE ANTERIOR CIRCULATION ANEURYSMS

Florian I. Stefan M.D, Ph.D., Dura Iviu MD, Oslobanu Aurel MD, Andrasoni Zorinela MD, Matei Claudiu MD

11:00

5. Postoperative Complications in Aneurysms of the Anterior Willis Circle (Experience 2003 - 2004).

Cristescu A., Dascalu G., Mihaela Teodoru, Corina Cițu, Denisa Gavrilă

11:10

6. SUBARACHNOID HAEMORRHAGE IN PATIENT WITH CEREBRAL ANEURYSM AND LUMBAR SCHWANNOMA: CLINICAL MANAGEMENT AND SURGICAL PLANNING.

A. De Tommasi, MD PhD, C. De Tommasi, MD, E. Lauta, MD, A. Colamaria, MD, S. Luzzi MD, A. Cimmino, MD, M. Occhiogrosso MD, PhD.

11:25 – 12:40

Session IV, Part C

Varia 3 (Epilepsy)

Chairmen

Prof. Dr. med. Michael Buchfelder (Germany), Prof. Izhak Fried (Germany)

11:25

Special lecture

1. Biological Solutions in Modern Neurosurgery: from surgical hemostasis and sealing to tissue regeneration

Raymond F. Nistor, Reiner Spaethe, Johann Odar, Heinz Redl

11:40

2. CONTROVERSIES IN EPILEPSY SURGERY

Michael Buchfelder, MD, PhD

11:55

3. Surgical management of space occupying lesions associated with epilepsy

Prof. Izhak FRIED, MD, PhD, FACS

12:10

**4. The value of mobile phones in data and image transfer in neurosurgical practice.
Application and first clinical results.**

Piek J, Hebecker R, Mann S:

12:25

5. The surgical management of supra-tentorial gliomas located in eloquent areas.

Jean-Michel DERLON, Alin BORHA, Olivier ETARD, Benjamin DROULERS, Oguzhan COSKUN,
Catherine LALEVEE, Janny LAMBERT, Lucian PETROVICIU

12:40 – 14:00

Lunch

14:00 – 15:30

Session IV, Part D

Varia 4 (Spinal)

Chairmen

Prof. I. Poeta (Romania), Prof. Joseph Giuseppe Gambardella (Italy), Prof. M. Dimancescu (USA)

14:00

1. Microsurgical treatment of symptomatic grade I and II spondylolisthesis. Use of "stand alone" cage.

Puglisi E., Grosso M., Gambardella G., Gervasio O., Zaccone C.,

14:15

2. PREVENTION OF RECURRENT RADICULAR PAIN AFTER LUMBAR DISC SURGERY: A PROSPECTIVE STUDY.

GIUSEPPE GAMBARDELLA, M. D., OLGA GERVASIO, M. D., CLAUDIO ZACCONE, M. D.,
EMANUELE PUGLISI, M. D., M. GROSSO M.D.

14:30

3. Life-threatening infections as iatrogenic complications of outpatient pain treatment - Report on 7 cases

Schütze M., Piek J., Mann S.

14:45

4. Cervical arthroplasty. Indications , advantages and results

R. ASSAKER, Lille

15:00

5. Micro-endoscopic lumbar discectomy

Mihai DIMĂNCESCU, MD

15:15

6. ASYMMETRIC HEARING LOSS IN A PATIENT WITH SYRINGOMIELYA AND CHIARI 1 MALFORMATION: CASE REPORT

A. De Tommasi MD, PHD; C. De Tommasi MD; P. Cascardi MD; P. D'Urso MD; S. Luzzi MD; M. Occhiogrosso MD, PHD.

15:30 – 16:00

Coffee Break & Poster session

Chairmen

V. Ciubotaru MD (Romania), Prof. Jaques Brunon (France), Prof. A. De Tommasi (Italy)

Actual multimodal treatments in AVMs

Ciurea AV, Voinescu D, Coman TC, Brehar F

Brain Injury

Florian I Stefan MD, PhD, Muresan Dafin MD

Brainstem cavernoma. Total removal.

Ciurea AV, Tascu A, Coman TC, Brehar F, Ionescu V

Cerebral metastasis - a rising situation requesting neurosurgical procedures

Ass. Prof. Gorgan Mircea MD, PhD Bucur Narcisa MD, Neacsu Angela MD, Lata Alina MD

Cerebral abscess - a 40 cases series revue

Ass. Prof. Gorgan Mircea MD, PhD Bucur Narcisa MD, Neacsu Angela MD, Lata Alina MD

Cerebral cavernous malformations – analysis of 21 surgically treated patients

Ligia Tataranu, Vasile Ciubotaru, Andra Albert, Mihaela Irimia - Neurosurgical Clinic, « Bagdasar - Arseni » Clinical Hospital, Bucharest, Romania

Clinical and Biomechanics Study on Aneurysms Formation

Ion Poeata, MD, PhD, Prof; Florin Munteanu, PhD; Marcel Ivanov, MD, BSc

CT-scan in the diagnosis of the intraorbital tumors

FI. MIJA, I SZABO, BIANCA SZABO, CARMEN DUMITRAS

Histological – and Clinical Correlations in Chronic Subdural Hematomas

Topor A., Sklerniacof M., Cristescu A., Monica Hodor, Scurtu R.

Histopathological Aspects As Predictive Factors For Acoustic Schwannomas

Gabriela Dumitrescu, Bogdan Oprisan, Nicolai Ianovici, Ion Poeata, Hortensiu Aldea, Remus Lacatusu, Victor Dimov, Corneliu Tarasi

Intracerebral hemorrhage secondary to an internal carotid aneurysm rupture with cavernous sinus dysectasia

Mircea D., Ciurea A.V., Chefneux A.

Image guided surgery-our experience

N. Ianovici, F. Gramada, N. Dobrin, T. Racaru,

Intraoperative electrocorticography in patients with low grade gliomas and epilepsy

Irina Ogrezeanu, V. Ciubotaru, Alina Tataru, L. Beznea

Intramedullary Spinal Thoracal Cavernoma. Case report

G. Iacob, G. Iana, Adina Chiriță, Mihaela Popârdă

Multimodal complex management in pineal area tumors - three different case presentations

Ciurea A.V., Mircea D., Voinescu D, Chefneux A

M.R.I. aspects in VON HIPPEL-LINDAU disease

V. IONESCU, A. V. CIUREA

Microsurgical Anatomy Of The Anterior Communicating Artery Complex In Foetus

Horatiu Stan MD, Alexandru Szathmari MD, Bernard Vallee MD

Microsurgical Anatomy Of The Middle Cerebral Artery In Foetus

Horatiu Stan

Neuropsychological implications in mild head injury in children

Virginia Rotărescu, Ciurea AV, Ligia Tătăranu

Nonconcordance between the Hunt&Hess score and the prognosis of the ruptured sylvian artery aneurysms with intracerebral haematoma

Prof. dr. I. Poeata, dr. I. Streltov, Prof. C. Aldescu, dr. M. Rotaru, dr C. Caillean, dr. B. Iliescu

New trends and advances in anterior circulation aneurysms microneurosurgery

Ion Poeata, Keisuke Ishii, Ziyad Faiyad, Marcel Ivanov, Alexandru Chiriac, Juha Hernesniemi

Our experience in giant intracranial aneurysms.

Ciurea AV, Coman TC, Brehar F, Chefneaux A

Our experience in pineal tumors

Ciurea AV, Voinescu D, Tascu A, Nuteanu L, Brehar F

Parasagittal and falx meningioma - a tree year experience 2001-2004 in the IIIRD Neurosurgical Clinic BAGDASAR-ARSENI Hospital

MD Valentin MUNTEANU, STD Bogdan ENE, MD, PHD Vasile CIUBOTARU

Spinal cervical, C2-C3, intradural, meningothelial meningioma - A case report

G. Iacob, Aurelia Dabu, G. Iana, Adina Chirita, Irina Julea

Surgical Findings in a Series of 100 Consecutive Microsurgical Clipped Anterior Communicating Artery Aneurysm

Ion Poeata, Nicolae Ianovici, Mihai Rotar, Dana Turliuc, Marcel Ivanov, Ziyad Faiyad, Alexandru Chiriac, Adina Postelnicu

The use of Frame based Stereotactic Neuronavigation in Cerebral Cavernomas

Dr. R.Perin, Dr. V.Ciubotaru, Prof. Dr. A.V.Ciurea

The Effects of Cerebrolysin Treatment on Brain Bioelectrical Activity, Cognitive Performance and Functional Outcome in Patients with Traumatic Particularities of Head Trauma Treatment in Neurosurgery Department Iasi

Authors: Dr. Dana Turliuc, Prof.dr.N. Ianovici, Prof. dr.H. Aldea, Dr. A. Iordache

Technical variants in anterior circulation aneurysms' microsurgery in condition of suboptimal endowment with equipment and operator instruments.

Ion Poeata, Ziyad Faiyad

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Timing in surgery of intracranial ruptured Aneurysms. Experience on 68 Cases (2002 – 2004)

Mihaela Teodoru, Cristescu A., Moraru H., , Ioana Darie ,Oana Marinescu

16:00 Poster award (Sponsored by EBEWE Pharma)

16:15

Closing remarks: Prof. Al. Constantinovici (Romania), Prof. A.V. Ciurea (Romania), Prof. C. Costea (Romania)

16:30 – 19:00

Sight seeing tour (foreigner participants)

Business Meeting RSN

**Opening speech: Prof. Dr. Al. Constantinovici
Editorial events**

20:00 Official dinner

02.10.2004

09:00

9ème COURS FRANCOPHONE DE NEUROCHIRURGIE

THEMES

R. ASSAKER

Chirurgie minimale invasive du rachis (état de l'art, indications, techniques opératoires);
rachis antérieur ; rachis postérieur ;

J. BRUNON

Facteurs pronostiques des méningiomes intracrâniens
Stratégies chirurgicales dans les myelopathies cervicarthrosiques

J. CHAZAL

Indications de la Microchirurgie dans le traitement des petits schwannomes
vestibulaires revues à la lumière des données cliniques, anatomiques et
électrophysiologiques.

Syndrome du « bébé secoué ». Hématomes sousduraux aigus avec ou sans contusion
cérébrale associée.

Evolution du cerveau de l'homme à partir des données de la Paléontologie et de la
Biologie

P. COURTHEOUX

Fistules durales intracrâniennes
Syndromes neurologiques de la maladie de Rendu-Osler
Dissections des artères cervicales à destinée cérébrale

J-P. HOUTTEVILLE

Pathophysiologie de la rupture des anévrysmes intracrâniens. Conséquences pratiques.
Indications et techniques opératoires des cavernomes cérébraux.

G. LENA

Tumeurs des ventricules latéraux (série pédiatrique)
Traitement de la syringomyélie chez l'enfant

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ABSTRACT BOOK

TIMIȘDARA, 29 September – 2 October 2004

Microsurgical treatment of posterior fossa meningiomas

H. Bertalanffy

No abstract available

Surgery of Meningioma of the Posterior Fossa : Technique, Pitfalls and Results

Prof. Dr. Keki E Turel, Dr. Nootan Kumar Sharma, Dr. Joy Varghese, Dr. Shashank Joshi

After Acoustic Neuroma, meningiomas are the second most common tumor within the posterior fossa. It comprises 9-10% of total intracranial meningiomas and represents a relatively uncommon group of tumors as compared to supratentorial meningiomas. These tumors can be classified on the basis of site viz. C P angle, cerebellar convexity, foramen magnum, clival, petroclival, tentorial and falcotentorial. They present with myriad symptoms such as headache, disturbance of gait, hearing loss, weakness of face, loss of facial sensation, trigeminal neuralgia (ipsilateral, contralateral and even bilateral) dysphagia and hypoglossal weakness. CT & MRI scan are the main diagnostic tools but audiometry and BAER are the supportive investigations for preoperative diagnosis as well as for follow up.

We have operated 62 cases of posterior fossa meningioma at Bombay Hospital Institute of Medical Sciences, Mumbai, India since 1987. These include meningiomas in following locations: CPA (35 cases), petroclival (10), tentorial (6), cerebellar convexity (5), foramen magnum (5) and falcotentorial (1). Depending on the location a variety of surgical approaches were used viz. retromastoid suboccipital, midline suboccipital, supracerebellar infratentorial, presigmoid, petrosectomy (anterior, posterior and combined) and subtemporal. The logic of selection of approach will be discussed. Total tumor resection was achieved in 49 cases (81%), 3 required combined approach and 2 required two stage removal. 15% of patients had varied neurological deficits. There was no mortality in this series. Petroclival meningiomas produced the greatest challenge in total resection and preservation of neural and vascular structures.

The morbidity associated with posterior fossa meningioma surgery causes concern, yet total excision can be achieved with an acceptable complication rate by proper neuroradiological evaluation and good microneurosurgical technique. These will be demonstrated by video in appropriate cases. It must be re-emphasized that preservation of life and function are more important than demonstration of total tumor removal on postoperative MRI.

RECURRENT MENINGIOMAS: LOCALIZATION ANALYSIS AND PROGNOSIS

Steudel WI , Prowald A, Henn W, Ketter R*

Department of Neurosurgery, Saarland University, 66421 Homburg/Saar

It is well known that in meningiomas there may be recurrences in spite of complete tumor excision. But there is still no agreement concerning which factors may cause , favor or even promote proliferation, further growth or new onset

The goal of our prospective study is to determine whether in meningiomas cytogenetic findings are suitable as a predictive parameter relevant to prognosis.

We examined 1263 patients who underwent surgery between 1973 and 2002. On the basis of their cytogenetic findings, 631 meningiomas were subdivided into four groups: Group 0 meningiomas displayed a normal diploid chromosome set; Group 1 tumors were found to have monosomy 22 as the sole cytogenetic aberration; Group 2 tumors were markedly hypodiploid meningiomas with loss of additional autosomes in addition to monosomy 22; Group 3 meningiomas had deletions of the short arm of a chromosome 1, as well as additional chromosomal aberrations including loss of one chromosome 22.

631 patients in whom tumor resections were determined to be Simpson Grade I or II could be followed up after complete tumor extirpation. In 35 patients, one or several recurrences were documented during the period of observation. Recurrences were found in 3,4% of 468 tumors in groups 0 and 1 and in 13,2% of 101 tumors in Group 2 ; the highest rate of recurrence were found in group 3 with 24% of 62 tumors.

There also exist correlations between the localization of the tumor and the karyotype: In

nearly all meningiomas localized in the convexity of the cerebrum a higher degree of hypodiploidy was observed. The tumors of the spinal canal showed with only two exceptions a monosomy 22 and those of the skull base had mostly a normal karyotype. Conclusion: The cytogenetic classification of meningiomas provides a significant contribution to the predictability of tumor recurrence and is, therefore a valuable criterion for the postoperative management protocol.

HISTOPATHOLOGICAL AND CLINICAL ASSESSMENT IN PRE-OPERATIVELY EMBOLIZED MENINGIOMAS: OUR EXPERIENCE.

Antonio De Tommasi,MD PhD, Claudio De Tommasi,MD, Francesca Sanguedolce,MD, Giuseppe Parisi,MD, Roberto De Blasi,MD, Antonella Cimmino,MD, Michele Occhiogrosso,MD PhD.

Preoperative embolization of meningiomas represents a technique to reduce intraoperative bleeding and facilitate surgical removal of them however it could cause histopathological transformations that could lead to atypical or malignant meningiomas. This paper describes the preoperative embolization in 30 meningiomas considering age and sex of the patients, tumour site and size, interval of time between embolization and surgery and relapses. It was reviewed histological subtypes, grading, mitotic indexes, necrosis extensions, cellular atypias, presence of small cell subclones, the MIB1/Ki67 labeling indexes and the p53, mdm2, bcl2 gene expressions. Necrosis and cellular atypias were detected in 70% of the cases. Mitotic indexes resulted mostly <5/HPF. Fibrinoid necrosis of the vascular walls were observed in 12 cases. The labeling indexes were <1% in 50% of patients, p53 levels were increased whereas bcl2 levels were reduced. The discussion analyzes the efficacy of the preoperative embolization of meningiomas, the interval of time between the embolization and their surgical removal as well as the histological criteria to follow to define grading, differential diagnosis and prognosis of the preoperatively embolized meningiomas.

Microsurgery of posterior fossa meningiomas – a personal serie of 14 cases

Ion Poeata, Nicolai Ianovici, Gabriela Dumitrescu, Cornel Balan, Ziyad Faiyad, Ramona Filipescu, Alexandru Chiriac

Far less frequent than supratentorial location, the infratentorial meningiomas may have different locations. In our serie the meningiomas were located : clivus 3 cases, foramen magnum 2 cases, cerebellar pontine angle 3 cases, posterior foramen lacerum 1 case, lateral sinus 2 cases. In 3 cases there were extensions to the adjacent areas. The patients were operated using the median suboccipital approach or retrosigmoid approach. The authors realized 9 total resections, 3 subtotal and 2 partial resections of the tumors. We present pre, intra and postoperative images, immediate and long distance survey results.

Microsurgical treatment of cerebral cavernous angiomas

Helmut Bertalanffy, M.D.

Department of Neurosurgery,
Philipps University, Marburg, Germany

Abstract

Cerebral cavernous angiomas are hamartomatous vascular lesions with specific morphologic characteristics. They may occur in various locations supratentorially and infratentorially, both in eloquent and noneloquent regions of the brain. Particularly due to their propensity for repeated bleeding, treatment is indicated in many cases. As radiosurgery is ineffective in preventing hemorrhage from a cavernoma, microsurgical removal of the lesion is the therapy of choice. From the surgical point of view, the following aspects are most important: the neuroradiological imaging, the precise localization of the lesion, the selection of the appropriate surgical approach (with adequate positioning of the patient and optimal skin incision and craniotomy), as well as the microsurgical technique of removing the lesion, especially when located in eloquent regions. It is obvious that deep-seated lesions (for instance those within the insula, the basal ganglia, the thalamus and the brainstem) are far more challenging for the surgeon than superficial ones. To localize the lesion intraoperatively, modern tools such as

neuronavigation have gained increasing importance. Recently, we have utilized the navigated ultrasound successfully to localize such deep subcortical lesions. Due to their heterogeneity and the clinical significance of even small hemorrhages, brainstem cavernomas have received special attention. Presently, the author's series comprises 61 patients operated on for a cavernoma within the brainstem and well over 150 cases in various other locations. The presentation details all important aspects of microsurgical treatment of these vascular lesions including several video clips to demonstrate the author's strategy and clinical results.

CEREBRAL CAVERNOUS MALFORMATIONS - OUR EXPERIENCE

Prof. Dr. I. Poeta, Dr. Gabriela Dumitrescu, Dr. Adina Postelnicu

Department of Neurosurgery, Department of Pathology - "St. Trinity" Hospital, Iasi

PURPOSE: To evaluate and share the experience in diagnosis and surgical treatment of cavernomas of both Neurosurgical Departments from our hospital.

MATERIAL AND METHOD: Authors present a study on 9 patients with cavernoma, all of them necessitating neurosurgical treatment, admitted in hospital between 2002 and 31.07.2004. Vascular malformations of the central nervous system are divided in five categories: arteriovenous malformation (AVM), cavernous malformation, capillary teleangiectasia, venous anomaly and varix. In order to put a correct diagnosis and to establish the therapeutic strategies, all cases were investigated by CT-scan. Supplementary, 4 of them were investigated by MRI and 2 of them also by angiography. In all this 9 selected cases the diagnosis was confirmed by anatomico-pathological examination of the bioptic specimens.

RESULTS: The patients had ages between 4 and 58 years, with a mean age of 30 years. There are 3 children, 2 females and 7 males. All patients presented single lesions and we couldn't find any familial aggregation. 6 cavernomas were located supratentorial, the rest of 3 being situated subtentorial. 2 cases presented with intracerebral haematoma, the others having small or no bleeding from the malformation. The symptoms are represented by headache (6 cases), seizures (3 cases), cranial nerve palsies (1 case), subarachnoidian haemorrhage (1 case).The resection was

macroscopically total in 8 patients and subtotal in 1 patient.

Postoperative results were very good (no deficits) – 6 cases and good in 1 case (mild postoperative motor deficit, in remission). The rate of mortality was 22% (2 cases).

CONCLUSION: The access to MRI in Iasi from the beginning of this century and the transformation of CT-scan in a routine exploration in our hospital have led to an increase of patients diagnosed and operated with cavernomas, with improving postoperative results.

KEY WORDS: cavernoma, MRI, surgical treatment

OUR POLICY IN INTRACRANIAL CAVERNOMAS

Ciurea AV, MD, D Voinescu, MD, Coman TC, MD, R Radulescu, MD, M Cristescu, MD.

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INTRODUCTION: Intracranial cavernomas (IC) count of 0.02 - 0.53% of all intracranial lesions and 8-15 % of all AVMs. The association with AVM is found in 10-30% cases. The lesions become symptomatic when the size is more than 1 cm.

MATERIAL AND METHOD: Authors present a series of 69 consecutive cases of IC admitted in the 1st Department of Neurosurgery of the Bagdasar-Arseni Hospital in the period of time between 1997-2003. The sex distribution was 35 males and 34 females aged between 1 and 70 years old with a pick of incidence of 31 y.o. The localization was supratentorial in 47 cases (68.2%), infratentorial in 15 cases (21.7%) and multiple 7 cases (10.1%). The supratentorial lesions were located: F lobe 30.4%, P lobe 14.5%, T lobe 20.3% and O lobe 2.9%. The infratentorial lesions were located: brainstem 17.4% and cerebellum 4.3%. The clinical symptoms were characterized by seizures (53.2%), neurological deficits (19.8%) hemorrhage (9.6%) and asymptomatic (17.4%). The treatment consisted of: surgery 41 cases (59.4%), and abstinence 28 cases

(40.6%). The non-operated cases were: multiple 4 cases, deep situated 9 cases and asymptomatic 15 cases.

RESULTS: The outcome for the 41 operated cases was: GR 32 cases (78%), MD 4 cases (9.8%), SD 3 cases (7.3%), and death 2 cases (4.9%). The neuronavigation was utilized in deep situated lesions. The outcome of the seizures were: in patients with lesion excision only – 56% seizures free, until in patients with lesion and perilesional cortex excision – 75% seizures free.

CONCLUSIONS: IC are rare lesions characterized by epilepsy in the majority of cases. When asymptomatic, the best management is the clinical follow-up. When the main symptom is seizure, the best prognosis results after the excision of the lesion and the perilesional cortex. In SAH the operation is an emergency and in multiple lesions, the hemorrhaged lesion must be operated.

Key words: cavernoma, surgery, epilepsy, intracranial hemorrhage.

ADVANCES FOR A BETTER KNOWLEDGE OF CEREBRAL CAVERNOMAS SURGICAL APPLICATIONS

J-P HOUTTEVILLE, L. PETROVICIU, A. BORHA

(CAEN – TIMISOARA)

Cerebral cavernomas (C.C.) were almost unknown lesions « in vivo » before the advent of modern neuroimaging (CT – MRI) although they are not unfrequent (prevalence 0,5 %). In this lecture we emphasize the main advances given by a multidisciplinary approach and their consequences for the neurosurgeon facing that pathology.

Histology : besides the « pure » forms of cavernomas it exist mixed lesions (20 %) : small A.V.M. at the origin of larger hematomas mainly found in deep locations.

Nosology : coexistence of cavernomas with developmental venous anomaly (the so called “venous angioma”) should be known in order to remove the C.C. and to left in place the DVA at operation.

Occasionally large cavernomas with a mass effect and without any mark of bleeding are observed ; on another hand " de novo" cavernomas have been reported (++) in familial forms or after cerebral irradiation. From these observations we undertook an immuno histological study (PCNA staining) which, showed that the dynamicity of cavernomas is not exclusively conditioned by their capacity of recurrent bleeding but also by an own capacity of growth of their matrix. These features show that C.C must be totally removed in order to avoid rebleeding and regrowth of the lesion. Different examples of bleeding are showed.

C.C. may be found everywhere in the brain :

- When they are localized in the supratentorial region they are often responsible of epilepsy (« superficial » forms). It is important to know that earlier the epileptic status has been related to C.C. better are the clinical results after its resection.
- Deep cavernomas may be found in supratentorial area where they are rarer than in infratentorial one. Examples of operative strategies are showed in this lecture based on our own experience and extensive references to litterature.

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TRANS-SULCAL NEURONAVIGATOR-ASSISTED APPROACH TO CAVERNOUS ANGIOMAS IN ELOQUENT AREAS: OUR PRELIMINARY EXPERIENCE.

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During the last five years, 9 Cavernous Angiomas in eloquent areas were operated on by the authors: 3 lesions were adjacent to sensorimotor cortex, 5 located in close proximity to the internal capsule, one close to deep cerebellar nuclei. The age of patients ranged from 15 to 64 years. The clinical onset was characterised by a cerebral haemorrhage in 3 cases, epilepsy refractory to antiepileptic drugs in 4 cases and increasing neurological deficit in 2 cases. All patients were submitted to MRI with T1 e T2 weighted images.

The use of the Neuronavigation provided a more accurate detection of the lesion, a skin incision designed according to the skin projection of the lesion, an approach to Cavernous Angioma through a cerebral sulcus and avoiding critical regions. To date, the removal of Cavernous Angiomas near critical cerebral areas is associated to elevated risk of surgical morbidity. The neurological morbidity is linked not only to possible direct damage during surgical dissection, but also to surgically induced oedema or haemorrhage in cerebral regions adjacent to the lesions

However, the hemorrhagic risk in natural history of Cavernous Angioma is about 0.7% for year, but double in lesions with previous bleeding. Therefore, in presence of previous hemorrhagic episode, epilepsy refractory to drugs or increasing neurological deficit, the surgery is indicated, also for lesions in critical areas.

Therefore, it is fundamental to reduce surgical morbidity to minimal levels.

In our opinion, the neuro-navigation, compared with conventional frame-based stereotactic systems, provides real-time feedback to the neurosurgeon about anatomical structures encountered in the surgical field. It is better for feasibility, integration and detailed anatomic information "image-guided", achieves a less operative-time for the surgeon and avoids the frame-discomfort for the patient. The neuro-navigation has many advantages, in the resection of critical areas cavernomas: 1) improves surgical approaches, with minimal craniotomy and accurate lesionectomy, 2) avoids critical structures, projecting and modifying the surgical trajectory, 3) guides surgical process, that may not be limited to simple lesionectomy alone, because the adjacent hemosiderin deposit, gliosis and calcification take a part in determining the simptomatology, such as seizures.

Moreover, the Cavernous Angioma, nonglial intraaxial lesion, produces slight intraoperative brain shift; thus, this "image-guided" procedure is highly reliable for treating such lesion.

In all cases, the lesion was totally removed together with gliotic ring and without surgical morbidity. The characteristics, the techniques and the advantages of the

frameless navigation system related to functionally important brain areas are discussed, in comparison with the previous stereotactic localization procedures.

Our experience is still beginning, but extremely encouraging.

Microsurgery of cavernomas located in eloquent areas and basal nuclei

Ion Poata, Florin Gramada, Cornel Balan, Gabriela Dumitrescu, M Ivanov, Alin Iordache

Modern imagistics and neuronavigation realize possible operating on cavernomas located in eloquent areas. We present pre, intra and postoperative images of cavernomas, located in the rolandic area and putamen, surgically resected with excellent results

ActigaitR – fully implantable FES system for Spastic Drop Foot

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ActigaitR – a new fully developed FES (Functional Electric Stimulation) system has been developed to enhance walking among patients with a spastic drop foot. It is based on a cuff-electrode placed around the peroneal nerve connected to a small implanted radio receiver. Radio signals from a heelswich is triggering the stimulations of the nerve and thereby the dorsiflexion of the foot.

The system is demonstrated in an animation.

Pediatric Pineal Tumors : Therapeutic strategy

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Pediatric pineal tumors represent 5 % to 8 % of all intracranial tumors in children. Initial assessment include Pediatric Neurosurgeons and Pediatric Oncologists. Indeed, the initial evaluation (Cerebral and spinal MRI, dosage of blood and CSF markers and search for CSF cells) will determine the initial therapeutic options (oncologic or surgical).

Since MRI era, we have treated 41 children with pineal region tumors : Pineal region (34), Pineal + CSF seeding (3), bipolar (2), multifocal (2). From a pathological point of view, 27 cases (65.8 %) were germ cells tumors, 8 cases (19.5 %) were Pineal cells tumors, 4 cases were benign gliomas and 2 cases were miscellaneous tumors.

An oncologic diagnosis was possible for 7 patients : 4 cases by positive tumors markers and 3 cases by positive CSF cells.

The surgical management concern first the problem of hydrocephalus and the actual standard is the third Ventriculocisternostomy and in few cases the VP shunt. Next the problem of the tumor. Depending of the initial evaluation several options are possible : Stereotactic Biopsy, Endoscopic Biopsy, Surgical Biopsy and Surgical exeresis ; All these options are discussed according with the initial assessment. When a surgical decision is decided, several approaches are possible and are discussed according with the exact location and possible extension of the tumor.

The Oncologic treatment of malignant germ cells tumors was the SIOP protocol and the overall survival was 81 %, while the event free survival was 76 %. The prognosis of benign tumor is excellent , while the prognosis of pinealoblastoma still remain very bad.

BEST MANAGEMENT IN PILOCYTIC ASTROCYTOMA OF THE POSTERIOR FOSSA IN CHILDREN.

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BACKGROUND: Pilocytic astrocytomas (PA) are posterior fossa (PF) benign tumors; 70-80% are found in children.

AIM: The total removal is the first goal of surgery representing the main factor influencing the prognosis.

METHODS: The authors studied 88 consecutive cases of PA operated and histologically verified, admitted in the Clinic Hospital "Bagdasar-Arseni" Bucharest between 1997-2003 (7 years). The incidence by age was preponderant in the group of range: 11-16 y.o.: 55 cases (62.5%). The boys are more frequent affected (61 cases-69.32%). The clinical status was characterized by: ICH syndrome, ataxia and dismetria. The topographical distribution of the PA in this series was: vermis and 4th ventricle – 57 cases (64.8%) and cerebellar emisphere 31 cases (35.2%). All the cases were investigated by CT scan and MRI. The preoperative hydrocephalus (Hy) was present in 71 cases (80.7%) (44 tumors of the vermis and 4th ventricle and 27 cases in tumors of the cerebellar emisphere). The preoperative Hy was managed in 3 cases (4.2%) by external ventricular drainage, in 59 cases (83.1%) a VP shunt was inserted, and in the other 9 cases (12.7%) the 3rd ventriculostomy was performed endoscopically. The actual policy in the last years is to perform the 3rd ventriculostomy at 3 days before the PF approach.

RESULTS: All the 88 cases were managed by open surgery. The total removal was accomplished in 71 cases (80.7%), near total removal in 6 cases (6.8%), subtotal and partial removal in 11 cases (12.5%). The follow-up was between 6 months and 6 years, with median range of 5,3 years. In the first months a CT scan was performed to evaluate the Hy evolution. The following controls were performed at 3, 6 months, 1 year and then yearly. The postoperative complications were: CSF fistula in 5 cases (5.7%), postoperative Hy in 21 cases (23.9%) and meningitis in 3 cases (3.4%). The postoperative outcome at six months (88 cases) was: GR: 75 cases (85.2%), MD in 9 cases (10.2%) SD in 4 cases (4.5%). No vegetative state and no mortality were present in the first year in this series. Recurrences were present in 8 cases (11.3%) from all the 71 cases in which total removal was accomplished. The regrowth reported to the cases operated by near total, subtotal and partial removal (17 cases) was reported in 11/17 cases at 5 years (64.7%). All the 19 cases of recurrences and regrowth were submitted to the second surgery and during the follow-up the third surgery was necessary in 5/19 cases cases. The survival rate at 5 years was 97.7% (86 cases). No radiotherapy or radiosurgery was performed in our series.

CONCLUSIONS: PA is benign tumor located predominantly in the PF in children. The neuroimaging diagnosis is conclusive and MRI is mandatory. The total removal is the first goal of surgery representing the main factor influencing the prognosis. The recurrences and regrowth are best managed by second and third look surgery.

Key words: pilocytic astrocytoma, children, surgery, recurrences, regrowth

PITUITARY ADENOMAS IN ELDERLY PATIENTS

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Since life expectancy increased dramatically in civilized countries, in recent decades also rare diseases are more frequently diagnosed and treated in the aged population. Pituitary adenomas are no exception in this respect. However, the incidence of pituitary adenomas in "elderly patients" is not homogenously defined. We have chosen to arbitrarily define the lower age limit at 65 years, since usually at this age people retire from their work in our country. We have analyzed epidemiological and clinical data of these patients and present their outcome from treatment and the complication rates.

We have utilized the patients populations who underwent surgical treatment of pituitary adenomas in both, the Departments of Neurosurgery, University of Erlangen-Nürnberg (01.12.1982-31.12.2001) and the University of Göttingen (01.04.2002-01.07.2004). In both departments the rate of "elderly" patients was 14%. Since there is a general comorbidity, it was difficult to establish if it was a symptomatic pituitary adenoma or an incidentaloma detected as a result of a co-existing problem (e.g. glaucoma or cataract). If there was any anaesthesiological risk factor, the indication for surgery was carefully evaluated in any case.

Like in the general patient population suffering from pituitary adenomata, non-functioning adenomas constituted the majority of lesions (76.4%). Acromegaly (12.7%), Cushing's disease (5.3%), prolactinomas (4.6%), thyrotropinomas (0.5%) and Nelson's syndrome (0.5%) were much less frequent. The mean age of the 219 men and 197 woman, who underwent pituitary surgery with an age of more the 65 years in our services was 70 4 years. In 334 cases primary surgery, in 82 cases an operation for recurrent tumour was performed. In 381 cases a transsphenoidal, in 34 patient a

transcranial approach was chosen. A comparison to a younger age population and to the total series is attempted.

Operative technique and potential complications did not differ from younger patient groups. However, when pertinent literature is reviewed one gets the impression that the complication rate is statistically considered, somewhat increased. Certainly, these patients pose specific problems during anaesthesia and in the peri-operative phase. While medical therapies can be applied unrestrictedly, the indication for radiotherapy will be considered less aggressively in high age as compared to younger patients.

SURGICAL TREATMENT OF THE CRANIOCEREBRAL AND PARANASAL SINUS TUMORS WITH SECONDARY INTRAORBITAL EXTENSION

- THE CRANIOFACIAL RESECTION -

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The anterior skull base tumors represent a real challenge not only for the neurosurgeon. Multidiscipline approach of the cases, in operative teams specially trained for this surgery, improved the results in the last 20 years. We present 14 cases of secondary intraorbital tumors admitted in the last 3 years, operated with different craniofacial resections techniques. The primary and the extended tumor are analysed, as well as the craniofacial operative technique recommended. These cases represent 36,8% of the 38 secondary intraorbital tumor cases and 8,9% of the 156 intraorbital masses operated. From pathologic point of view, 7 cases were spindle cell carcinomas, 3 cases undifferentiated carcinomas, 2 cases adenoid cystic carcinomas and one case of fibrous histiocytoma and meningothelial meningioma.

The diagnosis was very precise, made with supraselective CT scan, high definition MRI, 3D reconstructions, postprocessing of the images. The surgical technique and its particularities are presented, including the reconstruction of the skull base.

Total Quality Management and Performance Paid Systems, Four Year Application Results at Hacettepe University

Prof. Tunçalp OZGEN, MD

No abstract available

Acoustic Neuroma : Strategies for improved results

Keki E. TUREL

The surgery for Acoustic Neuromas best exemplifies the progress made by neurosurgery in the past century. Neurosurgeons, operating on Acoustic Neuromas were merely content with saving the life of their patients, at the beginning of 20th century. Today, we are discussing saving not only the 7th but even the 8th cranial nerve, the very nerve from which the tumor arises!. The advent of microsurgical technique, intraoperative cranial nerve monitoring and advances in the field of neuroimaging have been largely instrumental in producing such an enhancement of surgical goals. The present day goals of acoustic neuroma surgery are:

1) preservation of life 2) gross total tumor removal 3) total anatomic and functional preservation of 7th nerve and 4) preservation and even improvement of serviceable hearing in order of importance.

In the last 13 years, I have operated upon 501 cases of C P angle tumors, 445 of which were acoustic neuromas. Meningiomas, epidermoids, hemangioblastoma, tuberculomas, secondaries and a rare neurenteric cyst constituted the remaining few. Preoperative investigations included contrast MRI, CT Scan with bone windows (in case of acoustic neuromas), Audiometry and BAER. In addition to routine operative steps, specific strategies to preserve the 7th/8th cranial nerves include: 1) intratumoral debulking within the tumor arachnoid 2) opening of internal auditory canal and tracing the nerves proximally 3) simultaneously, locating these nerves at the brain stem 4) realization of maximum tumor adhesion with the facial nerve a few mm outside the forns, and best tackled towards the end of tumor removal 5) minimal use of bipolar coagulator 6) saving the internal auditory artery 7) intraoperative use of facial nerve stimulator and electrophysiological recording of 7th & 8th cranial nerves. My basic philosophy of C P angle tumor surgery has always been viewing tumor removal as a byproduct of

surgery, the main goal being identification and preserving the cranial nerves.

Our overall rates of facial nerve preservation have been 91% and amongst tumors less than 3cm size, the corresponding figure was nearly 100%. With regard to the hearing nerve, functional hearing preservation was possible in only 33% of 190 patients who had useful hearing before the operation. This disparity in results of preservation of 7th and 8th nerves are due to the latter being very vulnerable to heat, pressure and traction, while the former being relatively resistant to all these factors. Complications in the current series were minor and correctable. These included CSF leak (3.5%), bacterial meningitis (0.8%), aseptic meningitis (1%), lower cranial nerve paresis, exposure keratopathy and late onset hydrocephalus. Noticeable is the fact that mortality amongst this series of 501 patients was zero.

To conclude, C P angle surgery has come a long way from early 20th century when Harvey Cushing, the pioneer neurosurgeon called C P Angle as "that dark corner of Neurosurgery". Today, total microsurgical removal of acoustic neuroma is very much possible with preservation of 7th nerve in almost all, and 8th nerve in a fair number of cases – a fact amply testified by our series of 501 cases, and of other pioneers.

Initial Experience with Radiosurgery Linac-based in the Treatment of Acoustic Neuroma

Dr. Bujor Laurentiu¹, Dr. Ciubotaru Vasile², Dr. Perin Radu²

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With the advent of a dedicated system for stereotaxic radiotherapy Linac-based, between our departments initiated a collaboration for assessing the feasibility of radiosurgery approach in acoustic neuroma.

Our system consists of cones of different sizes between 7.5-35 mm, carbon head-ring, target localizer, BrainScan 5.02 planning system, Winston-Lutz device for check the

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accuracy of the isocenter (all BrainLab items) and Clinac 2300 C/D dual photon energy linear accelerator (Varian).

Between VII.2003-VI.2004 we treated seven pts (5 females,2 males) aged between 48-70 (median yo, with acoustic neuromas with dimensions 20-34 mm (volumes 2-10.27 cmc) using radiosurgery. Unique fractionation delivered doses ranged 12-18 Gy @ isocenter with X-rays of 6 MV, employing 3 to 5 non-coplanar arcs.

Due to short follow-up we can only state that radiosurgery is an elegant method which might be used in our country for the management of acoustic neuroma as an alternative to microsurgery. Because the tumor is not removed by radiosurgery only long term follow-up can determine the efficacy of this technique.

In our department is also available fractionated stereotactic radiotherapy with thermoplastic masks which we are using to date in two cases of acoustic neuromas relapsed after surgery.

DYNAMIC INTRA-OPERATIVE NON-INVASIVE FUNCTIONAL ASSESSMENT IN NEUROSURGERY

Mihai D. Dimancescu, M.D.

ABSTRACT – August 2004

In today's medicine and surgery, functional outcomes of treatment have become the standard of measurement of the success or failure of therapeutic intervention.

In neurosurgery there is no risk free non-invasive method to assess cortical function intra-operatively.

The technique presented makes use of dynamic infrared imaging developed from NASA and SDI technology. The equipment consists of a quantum well infrared photon detector (QWIP) licensed to OmniCorder Technologies for biomedical applications and a computer to process ¼ gigabyte of data with a proprietary software analysis program developed by Dr. Anbar at the State University of N.Y. in Buffalo, N.Y.

Cortical perfusion changes were assessed for determination of malignancy and

for residual tumor in 21 patients (12 meningiomas and 9 malignant tumors), and for brain mapping in 11 patients to determine seizure foci or to localize eloquent functional areas of the cortex during tumor surgery. Two 20 second scans were taken in each case. Cortical blood flow was assessed by spectral analysis of the modulating frequencies and by average corrected temperature assessment with a sensitivity of 0.009°C.

The results demonstrated a difference in modulating frequencies over the area of pathology or at the margins of the pathology. An increase in the area of 1.0 – 1.4 Hz frequency was present over cortical seizure foci corresponding to EEG recordings. A similar increase was noted over functional areas of the brain activated by peripheral stimulation or by awake functional activity. A 0.1 Hz frequency characterized benign tumors while a 0.2 Hz frequency was consistently displayed in malignant tumors. The latter frequency disappeared after complete tumor removal but persisted in cases of residual tumor.

This new technology provides an additional tool to the neurosurgeon for low cost non-invasive intra-operative functional assessment.

Mihai D. Dimancescu, M.D., F.A.C.S., Neurosurgery, OmniCorder Technologies, Inc., East Setauket, N.Y., 11733, U.S.A.

**Cerebral arteriovenous malformations. Embolisation?
Radiosurgery ? or combined techniques**

Jean CHAZAL, Clermont-Ferrand

Vascular malformations of medulla. Neurointerventional approach

Pierre COURTHEOUX, Caen

No abstract available

How shall we neurosurgeons learn to operate intracranial aneurysms in the future?

By Jens Haase MD,

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Until the introduction of coiling some 500 aneurysms were operated upon each year in our five neurosurgical departments in Denmark. The current neurosurgical vascular "experts" on aneurysm surgery have thereby developed a huge technical "hidden – or intuitive knowledge" that gives the creative mind of the surgeon the necessary possibilities to handle even the most difficult aneurysms, when found in the operative field. This scenario has today been radically changed by the introduction of endovascular coiling. Today 70-80% of all aneurysms are treated by coiling.. Each of our five departments will now operatively handle approximately 20 aneurysms – and most important - only the more broad based, irregular types not amenable to coiling. The consequence of this fact is that neurosurgeons shall face severe technical problems not far from now as the method of learning aneurysm surgery is not applicable anymore.

The visualized "hidden knowledge" is not present anymore and cannot be developed among the younger neurosurgeons unless we change our learning perspective in a drastic way. We can share external worlds but we cannot share imagined worlds (Waterworth) and therefore we must develop a new type of external world – through virtual reality.

We need a worldwide strategy for how to teach our new generation of neurosurgeons the surgical skills of attacks on these irregular aneurysms.

What is needed from the speaker's point of view is:

#1 Selection of potential new expert surgeons based on a testing program - agreed upon universally - must be inferred.

#2 3-D imaging /Virtual Reality (VR) visualization of aneurysms must be available preoperatively - eventually through Telemedicine. This enables the trainee to learn the visualization of the operative space (habitat) similarly to what was the case when participating a large number of operations.

#3 Haptics must be further developed and integrated in these VR visualizations in order to be able to sense and test-occlude (manipulate) the aneurysms in the VR environment.

#4 Models of aneurysms that can be test occluded with different types of clips should be given in a universal set-up for training purposes.

#5 Flow demonstrations of turbulence in the aneurysm should be demonstrated as a tool for determining what kind of occlusion is best tailored and with lowest risk for the patient.

- and perhaps the most radical suggestion:

#6 all vascular neurosurgeons with huge experiences must from now on devote 75% of their surgical practise in teaching these selected young colleagues the operative skills being mentors for them giving them their hidden knowledge - and not by carrying out the operative procedures themselves.

The consequence of this is that the preoperative evaluation and decision making is pushed forward to a preoperative scenario. In this scenario the young surgeon can also be mentored adequately via telemedicine and a Virtual Reality scenario and the surgical expertise sufficiently developed. The graduation from a proficient neurosurgeons to an expert surgeon with creative ideas is then open – otherwise we face disaster in our surgical scenario.

New trends- advances in anterior circulation aneurysms microneurosurgery

Prof. Juha Antero HERNESNIEMI, MD, PhD

No abstract available

Treatment of intracranial aneurysms. What to do?

Jaques BRUNON, St. Etienne

No abstract available

Giant intracranial aneurysms

Prof. Tuncalp OZGEN, MD

No abstract available

MICROSURGICAL COIL REMOVAL FOLLOWING MIGRATION OF THE COILS DURING ENDOVASCULAR TREATMENT OF UNRUPTURED INTRACRANIAL ANEURYSMS

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OBJECTIVE: ON THE BASIS OF THE INCREASING NUMBER OF ENDOVASCULAR PROCEDURES, THE FIGURES OF INTERVENTIONAL RELATED COMPLICATIONS DURING ANEURYSM TREATMENT ARE RISING. COIL MIGRATION WITH THE RISK OF CEREBRAL ISCHEMIA AND IMPENDING NEUROLOGICAL DEFICITS IS A RARE BUT SEVERE COMPLICATION, AND HAVE TO BE HANDLED AS AN INTERDISCIPLINARY EMERGENCY.

METHODS: THIS REPORT DETAILS THE INTERDISCIPLINARY MANAGEMENT IN THREE PATIENTS WITH COIL MIGRATION DURING ENDOVASCULAR TREATMENT OF UNRUPTURED INTRACRANIAL ANEURYSMS. THE DETAILED SURGICAL PROCEDURES FOR SUCCESSFUL REMOVAL OF THE MIGRATED COILS IS PRESENTED. THREE DIFFERENT STRATEGIES ARE SHOWN: 1) THE INDIRECT APPROACH THROUGH THE ANEURYSM, 2) THE DIRECT APPROACH VIA ARTERIOTOMY WITH COMPLETE AND 3) WITH PARTIAL COIL REMOVAL.

RESULTS: IN ORDER TO RESTORE CEREBRAL BLOOD FLOW AS SOON AS POSSIBLE, DIFFERENT TREATMENT STRATEGIES WITH TOTAL REMOVAL OF ALL COILS AND RETRIEVAL OF THE MIGRATED COIL ALONE WERE PERFORMED. THE TYPE OF THE ARTERIAL INCISION AND TECHNIQUE OF ARTERIAL RECONSTRUCTION IS IMPORTANT. INEVITABLY, THE FURTHER MANAGEMENT OF THE ANEURYSM OCCLUSION HAVE TO BE DETERMINED. INTRAOPERATIVE ANGIOGRAPHY IS RECOMMENDED TO SHOW THE CURRENT SITUATION OF THE RESIDUAL COILS WITHIN THE ANEURYSM. ALSO INTRAOPERATIVE MICRODOPPLER IS NECESSARY TO MONITOR BLOOD FLOW AND ESPECIALLY TO DETECT THROMBOEMBOLIC VESSEL OCCLUSION IMMEDIATELY AFTER THE COIL REMOVAL OR AFTER THE SUTURE OF THE ARTERIOTOMY.

CONCLUSION: A PERFECT INTERDISCIPLINARY COOPERATION IS THE PREREQUISITE OF SUCCESSFUL TREATMENT IN THESE RARE COMPLICATIONS WITH RAPID CEREBRAL REVASCULARIZATION AS AN OVERALL GOAL.

Giant aneurysms of internal carotid artery

Prof. dr. I. Poeata, dr. I. Streltov, dr. Z. Faiyad, dr. M. Rotaru, dr. C. Clement, dr. R. Filipescu

Summary

We analyse retrospectively a series of 16 giant aneurysms of carotid internal artery, treated surgically from 1995 to 2003. We used microsurgical clipping of the aneurysm in 9 cases (associated with temporo-sylvian anastomosis in 3 cases), carotid trapping in 2 cases, carotid ligation in 5 cases. We are discussing the results, the advantages and disadvantages of each method.

NEUROSURGICAL PROBLEMS: MULTIPLE ANEURYSMS

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INTRODUCTION: Multiple intracranial aneurysms (MIA) represent. - 15-33.5% of cases of SAH . The best management in these cases depend on the general status of the patient, preoperative evaluation and the operative timing and steps.

MATERIAL AND METHOD Authors present a series of 52 cases of MIA admitted in the "Bagdasar – Arseni" Clinical Hospital in the period of time between 1999 - 2004 (5 years). These cases represent 16.9% from all 308 aneurysms operated in this period of time. From all of 52 cases of MIA, 46 cases were operated. The multiplicity included: two aneurysms in 32 cases 61.5 %, three aneurysms in 11 cases 21,2%, five aneurysms in 4 cases 7,7% and association MIA with AVMs 5 cases 9,6 %. The localization was: anterior circulation : same side: 18 cases, both side: 23 cases and

anterior and posterior circulation: 5 cases. The HH score at admission was: HH grade 1- 13 cases (25.0%), HH grade 2 -25 cases (40.1%), HH grade 3 - 8 cases (15,4%), HH grade 4 - 6 cases (11.5%).

RESULTS: The number of cases submitted to open surgery was 46 (5 cases wrapping and 41 cases clipping). No cases of embolization with GDC were in this series. The non-operated cases: 6 cases (3 case bilateral giant aneurysm of ACI and 3 cases HH > 3: died). From all operated cases, the MIA + AVM 2 cases (1 cases AVM resection and 1 case aneurysm clipping). The outcome was: (60,9%) GR - 28 cases, (21,7%) MD - 10 cases, (10.9%) SD - 5 cases, (0%) VS - 0 cases and (6.5%) D - 3 cases.

CONCLUSIONS: In MIA the diagnosis by complete and precise neuroimaging is the most important step. The strategies treatment depend on complete and exact preoperative evaluation and the preoperative neurological status. In our opinion the one stage operation is best treatment in these cases. The difficulties of surgical intervention and outcome are related to the vertebrobasilar aneurysm association.

Key words: multiple aneurysms, surgery, outcome

Treatment of intracranial aneurisms in patients all over the age 70: early surgery or endovascular coiling?

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This study was conducted on 82 patients all over the age of 70 affected by aneurismal sub-arachnoid hemorrhages. The paper compares aneurismal early surgical clipping to endovascular coiling in order to evaluate their respective efficacy in relation to the incidence of secondary cerebral damage (vasospasm and hydrocephalus). Of the 82 patients considered, 47 had undergone aneurism clipping (Group 1) and 35 endovascular coiling (Group 2). Prior to treatment the patients were subjected to clinical evaluation according to the Hunt-Hess scale, CT scan to evaluate the presence of intracistern blood, hydrocephalus evaluation in acute phase and around the 12th to 14th day following treatment, vasospasm evaluation. The number of vasospasm cases in Group 2 (10 out of 35) was greater than in Group 1 (7 out of 47). Regarding hydrocephalus, none of the 10 cases in Group 1 required a permanent ventricular-peritoneal shunt, while it

was necessary in 3 out of 6 cases in Group 2. Washing of the cisterns and prolonged liquor drainage from the cisterns reduced the risk of vasospasm and post-hemorrhagic hydrocephalus. Once a vasospasm occurred, both groups presented an equal percentage of clinical worsening.

Our Experience in Microsurgical Treatment of Anterior Circulation Aneurysms

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Since 2002 until 2004, 36 patients diagnosed of intracerebral aneurysm have been treated using microsurgical and endovascular treatment techniques in our department of neurosurgery. In 25 cases the aneurysms were located in the anterior circulation. In 90% cases the first symptom was the SAH. In most of the cases the treatment was performed in the late stage after subarachnoid hemorrhage.

Peak age for aneurysmal SAH is 40-60 years. The incidence of aneurysmal SAH is more increased in winter and summer months. Diagnostic evaluation consisted of cerebral angiogram in 36 patients. We detected spontaneous SAH in all cases with lumbar puncture, cerebral CT-scan – 35 cases, MRI – 14. Hunt- Hess classification of SAH was used to decide the opportunity time for operation of the patients with arterial aneurysms. The patients with anterior circulation aneurysms were treated by surgical procedures including surgical clipping, endovascular treatment, wrapping of the aneurysms with muscles and polymers. The most frequent complications were rebleeding, vasospasm, increased neurological impairment.

THE OPTIMAL TREATMENT OF THE ANTERIOR CIRCULATION ANEURYSMS

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Until October 1977 there were no cases of intracranial aneurysms diagnosed and treated in our department. Since then the patients with aneurysms in the Willis circle were diagnosed and treated based on clinical and neuroimaging investigations. This article reflects the authors' experience in this field.

This study was based on 76 patients, admitted between October 1997 and December 2003, with the sex ratio (male/female) 1:2, aged between 22 and 74 years, the peak decade being 40-49 (36%). The cases were rigorously analyzed; we made correlations between the state on admission, the time between the debut-admission, emergency treatment and state at discharge.

We emphasized on CT scan, as the first investigation, as well as early angiography for a well conducted treatment. Good results obtained in over 50% of severe cases which otherwise were considered hopeless made us to strongly recommend an energetic therapeutical attitude, that requires a complete emergency set of investigations and an early neurosurgical therapy adapted for each case in particular.

Postoperative Complications in Aneurysms of the Anterior Willis Circle (Experience 2003 - 2004).

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The authors present the experience on a casuistic of 65 aneurysms of the anterior part of Willis circle, operated among 2002, January 1st – 2004, June 30. Distribution on sex was : 34 males – 51,5 % and 32 females -48,5%, and the mean age - 51 years (range 18 – 69 years). The investigation protocol consisted of CT scan at arrival to E.R., with evidence of S.A.H., followed by digital subtraction angiography . Distribution recording to S.A.H. Fishers' CT classification was: gr.I – 9 cases / 13,6 %; gr.II – 31 / 47,0%; gr.III – 16 /24,2%, and gr.IV – 10 / 15,2%. Localisation of aneurysms was : - Com. ant. A. – 27 cases; - Com.post.A. – 12; - M.C.A. – 23; - Pericalosal A. – 2; Multiple aneurysms – 2. Mean time interval among S.A.H. onset and surgery was 11 days (range 1 – 30 days).Rebleeding before surgery were

present in 4 cases. Nimodipine was given to all patients recording to current protocols.

Mean time interval between admission and surgery was 11 days (range 1 – 30 days). Microsurgical approach was performed in all cases, completed with endoscopic assistance in the last cases. Results recording to G.O.S. at release were : GOS 5 – 18 cases/ 27,3 %; - GOS 4 – 20 cases / 30,3 %; GOS 3 – 11 / 16,7 %; GOS 2- 0/0,0%; GOS 1 – 17 / 25,7 %.

- Intraoperative incidents: - rupture of aneurysm in 15 cases (temporary clipping , repositioning the clip).

- Postoperative intracranial hematoma – 1 patient under abusive anticoagulant treatment (reintervention, cured);

- Focal ischaemia post clipping - 3 patients (1-Int.Carotid A. and Intracranial bifurcation of I.C.A.; 1 – M.C.A.,and 1- Post.Com.A. aneurysms. Partial or total arterial obstruction was evidenced using T.C.D. There was only 1 reintervention (M.C.A. – repositioning of clip which stenosed M1), because of the poor condition of other patients.

- Persistent Vasospasm - 5 cases: - TCD investigation, Nimodipin, hiperhidratation, higher CPP; In prevention and fighting the ischaemic disturbances the best help was introduction of endoscopic assisted microsurgery, as well as the TCD monitoring of patients suspected for such complications

- Diabetes Insipidus – 1 case,transitory ,(administration of ADH);

- Inefficiency of neurointensive care in order to maintain an adequate general and cerebral blood pressure.

- Somatic complication in the postoperative period, patients being in the Neurointensive Care Unit:

- Bronchopneumonia - 9 cases, 7 deceased;

- Multiple Organ Failure - 2 cases , deceased;

- Urinary infection - 16 cases

It is necessary to develop efforts in order to improve both the surgical techniques, as well as an real improvement of Neurointensive Care.

SUBARACHNOID HAEMORRHAGE IN PATIENT WITH CEREBRAL ANEURYSM AND LUMBAR SCHWANNOMA: CLINICAL MANAGEMENT AND SURGICAL PLANNING.

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ABSTRACT

Literature reports very few cases of association between cerebral aneurysm and no vascular pathology of the nervous system.

No association between intracranial aneurysms and lumbar Schwannomas have been described in the literature.

This paper describes the case of a 73 year-old female patient suffering from a Cauda Equina syndrome who presented a sudden headache and rigor nuchalis.

During hospitalization she resulted awake in Hunt-Hess grade II.

Emergency CT-scans revealed blood in the basal cisterns.

Cerebral angiography showed an Anterior Communicating Artery aneurysm suddenly treated by GDC coiling.

Sixteen days after embolization a spinal MRI showed a T12-L1 Schwannoma which justified Cauda Equina syndrome.

Even though an emergency tumour removal would have been necessary to obtain a better outcome, the authors decided to postpone the surgery since the haemodynamic variations related to the general anaesthesia might have induced a cerebral vasospasm.

Twenty-six days after the aneurysm endovascular coiling, a T12-L1 laminectomy was performed and lumbar Schwannoma was totally removed.

Post-operative period was good and patient had no neurological deficits related to both treated pathologies.

The discussion analyzes the clinical management and the timing of spinal surgery related to the aneurysm rupture as well as the anaesthesiology behaviour of this unusual case.

Special lecture

Biological Solutions in Modern Neurosurgery: from surgical hemostasis and sealing to tissue regeneration

Raymond F. Nistor, Reiner Spaethe, Johann Odar, Heinz Redl

CONTROVERSIES IN EPILEPSY SURGERY

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Epilepsy surgery should be considered when pharmacoresitancy of seizures is established. A variety of surgical procedures are currently available. Their efficacy and safety has been thoroughly evaluated. However, in several sectors evidence basis of management protocols is not convincingly established. The author reviews a few of the current problems, based on historical developments, pertinent current literature and his personal experience gained in this field on the basis of a series of operations in a government supported centre of epilepsy surgery.

The fashionable topic of "tailored resections" is initially addressed. A set of preoperative diagnostic workup procedures and intraoperative electrocorticography is utilized to minimize brain tissue resection. With more precise techniques to localize the suspected focus it was supposed that less voluminous resections could be performed. Topectomy versus lobectomy was claimed to preserve more function and cause less neuropsychological disturbances. This issue is critically evaluated.

Since the focus may be adjacent or even extend into eloquent cortical areas mapping of these is to date considered crucial. There are several options available: Awake craniotomy utilizing local anaesthesia, implantation of subdural grids and extensive neuropsychological testing and neuronavigation, using non-invasive means of generating pre-operative data on cortical functions, such as MSI and functional MRI. The advantages and problems of each of these approaches are pointed out.

There is some dispute about open surgery versus radiosurgery in the generation of lesions. Recently, gamma knife surgery centres reported about mesial temporal resections, callosotomies and the treatment of hypothalamic hamartomas, causing gelastic epilepsy. Of course, the established therapies for all these problems are direct surgical approaches. A comparison is attempted.

Another topic that is addressed is the competition between open palliative surgical procedures and stimulation techniques. In generalized seizures, that involve eloquent cortex, multiple subpial transections, hemispherectomy and corpus callosotomy compete with the implantation of stimulation devices that carry high costs but a low operative risk, such as vagus nerve stimulation.

Last but not least the question is posed whether the use of intraoperative high cost

technology is justified. Neuronavigation, intraoperative imaging and perioperative recordings are very sophisticated but also expensive techniques. We recognize that it is nice to have them but we question whether their use has increased the efficacy or lowered the complication rate of epilepsy surgery operations.

Surgical management of space occupying lesions associated with epilepsy

Prof. Izhak FRIED, MD, PhD, FACS

The value of mobile phones in data and image transfer in neurosurgical practice.

Application and first clinical results.

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Purpose: Transfer of images like MRI or CT scans usually requires either personal transport (which is time-consuming) or extensive computer equipment and network resources. Today mobile phones with integrated digital cameras offer new opportunities of mobile image transfer for neurosurgeons on call.

Method: In order to test the feasibility and usefulness of mobile image transfer via mobile phones all doctors of our department were equipped with the latest generation of mobile phones (Sharp GX 30). This handy was the first one available in Germany which offered a 1 Mio pixel camera resolution. Images needed for information exchange were just photographed at the bedside by the neurosurgeon on call and transferred as a MMS message to the mobile phone of the senior neurosurgeon at home. The individual case could then be discussed between them on the base of the pictures transmitted and the oral information via mobile phone. - Additionally a stand-alone laptop equipped with an UMTS/GPRS card (Vodafone) for quick data transfer was installed in our department. This was used during working hours for image transfer and post-processing.

Results: The first results of our ongoing study show that image transmission with this new generation of mobile phone is reliable and safe. Quality and resolution of the images transferred are high enough to provide reliable informations for immediate

decisions (e.g. indications for emergency operations). In order to give the auditorium an impression of this technique, images which have already been transferred in our department will be presented after the lecture. As a summary this technique saves time and ways to the hospital for the senior surgeon on call. As a second step a detailed cost-benefit-analysis of routine use over a 12 month period has been launched with the results to be published later.

The surgical management of supra-tentorial gliomas located in eloquent areas.

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Recent works have shown that patients with a low grade glioma have a better prognosis when a total or subtotal removal was performed, than those who had just a partial removal or a biopsy. However, there are limits to such a surgical approach : 1st, if the tumour has a diffuse shape, or is extending over more than one lobe, gross resection is clearly not possible; 2nd, if the tumour is located very close to functional areas of the brain, its removal can be complicated by a permanent post-operative neurological deficit. Recent developments of older physiological assessment methods have allowed, however, a broader surgical approach to this second category of patients. We shall consider only two groups of lesions : those located in central areas, and those located near speech areas of the brain. For both, we shall describe the preoperative functional imaging, using either fMRI or functional PET, which helps defining the operability of the tumour ; then the intraoperative physiological monitoring, which will assess both cortical and subcortical structures, and will prevent the occurrence of a permanent post-operative deficit.

Gliomas of the central (somatosensory) area of the brain.

For those tumours, the preoperative functional imaging, can identify the primary motor area and define its relationships with the tumour. However, and specially in patients who have no deficit, this stage is not mandatory. The intraoperative management will be performed in the patient under G.A., in 2 steps : 1st, identification of the central sulcus by recording the SSEP obtained by stimulating the opposite median nerve ; 2nd, identification of the different parts of the motor primary area and subcortical motor pathways by bipolar stimulation. This control will be followed upon

during the full tumour resection. In our experience, this method has allowed complete removal without postoperative sensory or motor deficit and long remissions in patients in whom surgery was initially discarded in other institutions.

Gliomas of the speech areas of the brain.

The preoperative functional imaging is more important in these cases than in the previous tumours group, due to the inter individual variability of the speech localization, and to the effects of both anatomical shifts and neural plasticity. It should allow a clear identification of cortical areas involved in speech function, and provides a major help to surgical indication and operative planning. In a few cases, it can allow performing tumour removal under G.A. In most cases, operation will be performed under local anaesthesia, and electrophysiological mapping of both cortical and subcortical speech areas and pathways. Using this approach, we could perform subtotal tumour resection and obtain long term remission in some patients in whom surgery would have been discarded by a more traditional approach.

Conclusion: New imaging modalities and intra-operative monitoring methods can allow surgical removal of some gliomas located in eloquent brain areas, with no post operative morbidity and a good remission. Apart from a better oncological control, surgery often reduces significantly the epileptic symptoms, which constitute the most handicapping consequence of these lesion.

Microsurgical treatment of symptomatic grade I and II spodylolisthesis. Use of "stand alone" cage.

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INTRODUCTION

Treatment of low grade spondylolisthesis is sometimes required by a persistent radiculopathy not responder to non-surgical therapies.

In such cases, radicular decompression can be obtained by microsurgical technique, whereas the following stabilization is performed by macroscopic technique using an interbody cage positioned by anterior or posterior approach and pedicle screws.

This work shows our experience on an exclusively microsurgical treatment, by a posterior, approach, using interbody cages allowing an immediate stabilization.

CLINICAL MATERIAL AND METHODS

Sixteen patients suffering of symptomatic grade I and II spondylolisthesis were treated by microsurgical technique using a posterior approach. In all patients, a careful radicular decompression was performed and titanium interbody cages were positioned. In seven patients, we used cages manufactured by Aesculap that were positioned by screwing; in nine patient the B-Twin – Expandable Spinal System by Discotek s.r.l. was used.

CONCLUSIONS

Follow-up (at least six months) showed a decrease of radicular compression signs and a good stability with tendency to interbody fusion. The suggested technique allows a rapid patient mobilization and a significant reduction of the post-surgical pain.

Both the systems allows satisfactory results yielding. The second system has the advantage to allow distraction, usefull in obtaining a satisfactory radicular decompression.

In order to reduce intraoperative bleeding, an adequate anaesthesiologic management was used:

- General anaesthesia
- Adequate positioning
- Mechanic ventilation
- Insufflation's pressure not higher than 20-25 mmHg
- EtCO₂ about 30
- SpO₂ about 100

PREVENTION OF RECURRENT RADICULAR PAIN AFTER LUMBAR DISC SURGERY: A PROSPECTIVE STUDY.

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SUMMARY

Background: Postoperative epidural fibrosis is a major causative factor of low-back pain even if microsurgical techniques are adopted to reduce this phenomenon. To prevent the recurrent radicular pain caused by this problem, we utilized adipose tissue drawn from the same patient; at the end of surgical procedure, the fat was placed around the spinal root or the dural sac. This procedure was evaluated by a prospective, randomised study.

Method: Among 180 patients operated on for lumbar discectomy from January 2000 to December 2001, 74 were enclosed in the study. In 37 patients, the spinal root was covered by autologous fat (group A), in the other 37 (control group, B), this procedure was not adopted. One year after surgery, all the patients were evaluated with clinical

and radiological (Magnetic Resonance Imaging) follow-up. Only two patients were lost to follow-up.

Findings: 71% of the patients in the group A had 100% of clinical and radiological post-operative outcome score; this result was obtained only in 35 % of the patients in the group B. A clinical score valuating pain syndrome (from 0 to 5 grade) and a radiological score valuating postoperative fibrosis (from 0 to 4 grade) was adopted. Therefore, the group A had best outcome, compared to control group.

Conclusions: The authors found a positive effect in the reconstruction of epidural fat with autograft of adipose tissue, to prevent the postoperative scar and failed-back syndrome related to postoperative fibrosis. In other previous reports, the use of free fat grafts is reported as clinically ineffective [3, 6], but, in this work , are important some critical technical expedients:

- The microsurgical placement of autologous fat graft in the epidural space, performed by a small opening of the yellow ligament, forms an impermeable layer to the coagula and the blood coming post-operatively from the superficial tissues. The blood macrophages, transforming in fibrocytes, are responsible for the formation of the fibrous tissue.
- Maintenance of a low venous pressure intra- and post-operatively
- A good post-operative analgesia, that achieve the maintenance of a low intra-abdominal venous pressure

Key Words: fibrosis, lumbar disc surgery, recurrent pain, discectomy, postoperative scar

Life-threatening infections as iatrogenic complications of outpatient pain treatment - Report on 7 cases

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Purpose: Invasive treatment of radicular pain by various methods including epidural injections, epidural catheterization and periradicular infiltrations has become very popular in Germany. Severe complications of these, mainly, outpatient procedures may occur but are rarely published.

Method: The authors present a prospective clinical series of 7 life-threatening infections occurring within 2 years following such procedures.

Results: The patient group included 4 males and 3 females (age 32 - 71 years). There were 3 cases of pyogenic meningitis, 3 paracervical abscesses, and 1 subdural/epidural empyema/spondylitis with subsequent septicemia and multi-organ failure. Causative organisms were exclusively E.coli and Staph. aureus species. Besides proper antibiotic treatment 5 patients were operated on (one removal of a remaining lumbar catheter tip, 3 evacuations of cervical abscesses, and one spondylectomy /spondylodesis. 6 patients recovered completely; one patient died as a result of her septicemia after 6 weeks of ICU treatment.

Conclusions: Infectious complications following invasive outpatient pain treatment are often neglected. For medicolegal reasons, however, it should be kept in mind that even a "harmless" injection may lead to life-threatening complications and may even kill patients.

Cervical arthroplasty. Indications , advantages and results

R. ASSAKER, Lille

LUMBAR MICROENDOSCOPIC DISKECTOMY

Mihai D. Dimancescu, M.D.

ABSTRACT – August 2004

The first lumbar diskectomy was performed in 1909. Almost 90 years of evolution of surgical technology have been necessary to enable lumbar microendoscopic diskectomies.

The indications for lumbar microendoscopic diskectomy are the same as for any type of lumbar diskectomy, usually consisting of intractable radicular pain and/or neurologic deficits. A convincing additional indication for the microendoscopic approach is the improvement in outcome with respect to post-operative pain and return to work. Over the past 50 years, as the surgical incisions have become smaller, the duration of post-operative pain and hospitalization has decreased. The 5 cm incision of the 1950's was associated with an average of 10 days hospitalization. In 2002, the MED 1.4 – 1.6 cm

incision reduced hospital stay to 0.04 – 0.24 days.

Operative time for a microendoscopic procedure is the same as for the open 2.5 cm incision procedure, but recovery time is shortened: patients are able to return to sedentary work in 1 – 7 days post-operatively and to manual labor 4 weeks post-operatively. The disc herniation recurrence rate is 3.3% in our MED group versus 7 – 10.4% in comparable groups with the standard open procedure.

MED presents a significant operative technique improvement in the surgical management of herniated lumbar discs.

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ASYMMETRIC HEARING LOSS IN A PATIENT WITH SYRINGOMIELYA AND CHIARI 1 MALFORMATION: CASE REPORT

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INTRODUCTION: Chiari 1 malformation is a frequent cause of neurological deficits often related to cranial nerves impairment. We report the case of a patient with Chiari 1 malformation and cervical syringomyelia presenting with isolated asymmetric hearing loss.

CASE REPORT: A 57 yo patient presented a progressive left unilateral hearing loss within 6 months. Oto-neurologic evaluations showed the retrocochlear origin of the deafness. This prompted an MRI of the craniovertebral junction that revealed cerebellar tonsils herniation through the foramen magnum and a C2 – C5 syringomyelia. A posterior fossa decompression was performed and a CT scan in postoperative day two demonstrated a complete reduction of the syrinx. An otoneurologic evaluation performed at 6 and at 12 months follow-up confirmed the hearing recovery.

CONCLUSIONS: Chiari 1 malformation only rarely has its onset with a single cranial

nerve impairment like in the case here reported, and even an accurate otologic evaluation can sometime not consider isolated hearing loss as an initial manifestation of this complex disease. The case here reported demonstrate that, when the correct diagnosis is promptly achieved, better surgical results and a good recovery of the impaired functions can be obtained by surgical decompression.

Brainstem cavernoma. Total removal.

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Brainstem cavernoma represent about 15% of all intracranial cavernoma. They have a great risk of bleeding and are a neurosurgical challenge.

Authors present a case of brainstem cavernoma treated surgically with good results. MT, 12 yo, female, admitted in the 1st Neurosurgical Department of the Bagdasar-Arseni Hospital with mild hemiparesis on the right side, and paresis of the cranial nervs VII and VIII. The symptoms onset two months ago and increased progressively. Cerebral CT shows an hiperdensity lesion in left part of brainstem. The MRI detected a brainstem cavernoma localized in latero-posterior left pons with hemorrhage and edema. The girl was submitted to surgical intervention by suboccipital approach. The microscopically total removal of the lesion was performed. In the postoperative period a complete recovery of the neurological deficits was accomplished. Postoperator MRI demonstrate total tumor removal.

The patient return two month after surgical intervention. Clinical status was good, without neurological deficit. MRI at two months post operator shows no sign of recurrence.

Authors consider that in brainstem cavernomas with hemorrhage, the surgery is mandatory and the recovery depends on the early operative timing.

Key words: brainstem cavernoma, surgery, outcome.

Our experience in giant intracranial aneurysms.

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Background: Giant intracranial aneurysms (GIA) count of 6-9% of all intracranial aneurysms; from all of these, 25% presents of symptoms of SAH.

Material and method: Authors present a series of 23 consecutive cases of GIA admitted in the Bagdasar – Arseni Clinical Hospital in the period of time between 1999 - 2004 (5 years). These represent 9.3% of all 248 cases of intracranial aneurysms operated in this period of time. There were: 14 males (61%) and 9 females (39%) aged between 12-59 years (median age 43 years old). The onset symptoms were: compression-mass effect: 16 cases (69,6%) and SAH: 7 cases (30,4%). The most frequent clinical features at admission were: headache 23 cases (100%) and nausea, vomiting 20 cases (88.2%). The Glasgow Coma Scale score at admission was: GCS 15 in 12 cases (53%), GCS 13-14 in 7 cases (29%), GCS 12-9 in 4 CASES (18%). All the cases were investigated by CT scan, DSA (main tool for diagnosis), MRI / MRA or echodoppler (no routinely).

The GIA distribution by location were: internal carotid A. 7 cases (30,4 %), P.com.A. 2 cases (8,6 %), A.com.A. 4 CASES (17,4 %), Middle cerebral A. 3 cases (13 %), Basilar A. 6 cases (26 %) and Vertebral A. 1 case (4,3 %). The GIA treatment consisted of: surgical aneurysm clipping – 12 cases (52%), surgical wrapping – 5 cases (24%), abstinence – 4 cases (18%), coils embolization – 2 case (6%).

Results: The postoperative complications for all the 17 operated cases were: metabolic complications 9 cases (52 %), hydrocephalus 5 cases (29.4%), cerebral edema – raised ICP 4 cases (23.5%), neurological deficits 3 cases (17.6%), visual disturbances 3 cases (17.6%), third nerve palsy (transient) 4 cases (23.5%), seizures 5 cases (29.4%), secondary hydrocephalus 2 cases (11.7%), subdural effusion 2 cases (11.7%), respiratory infection 4 cases (23.5%). In cases of endovascular techniques treatment (GDC), the follow-up by angiography is mandatory. The overall morbidity/mortality rate was 9.4%. The overall recanalization rate was 20.9 % (disadvantages). Delayed aneurysm rupture was registered in 0.5-1.6 % cases.

The outcome – GOS at 6 months (17 operated cases) was: good recovery 9 cases (54%), moderate disability 3 cases (15%), severe disability 2 cases (8%), vegetative state 0 cases, death 3 cases (23%).

Conclusions: the GIA represents an important neurosurgical challenge. The clinical features are dominated by neurological signs vs. SAH. The DSA and MRI are the main tool for diagnosis. Aneurysm clipping and resection are the treatments of choice. In the postoperative period, adequate 3h therapy is mandatory.

Key words: giant intracranial aneurysm, surgery, embolization, outcome.

POSTER

OUR EXPERIENCE IN PINEAL TUMORS

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Introduction: Pineal tumors represent in Europe and USA 0,4-1% of intracranial tumors in adults and 3-8% of intracranial tumors in children. In Northeastern Asia the percentages are higher: in adults 2,2-8% of intracranial tumors and in children 12, 5% of intracranial tumors.

Material and Method: Authors present a series of 68 consecutive cases of (62 pathologically verified) pineal tumors admitted in the 1st Department of Neurosurgery of the "Bagdasar-Arseni" Hospital in the period of time between 1991-2003 (12 years). From all of these, only pineal area tumors were 42 cases, and posterior part of 3rd ventricle and pineal area tumors 26 cases. The age distribution was 0-59 y.o. with median age of 26 y.o. the sex distribution showed a male preponderance: 40 males (59%) and 28 females (41%). The pathological distribution relives: germ cell tumors 31 cases (46%), pineal parenchymal tumors 13 cases (19%), glial cell tumors 22 cases

(32%) and miscellaneous tumors 2 cases (3%). The group of 31 cases of germ cell tumors was represented by: germinoma 16 cases, teratoma 7 cases, epidermoid and dermoid 2 cases, teratocarcinoma 1 case, endodermal sinus tumors 2 cases, and mixed germ cell tumors 3 cases. The group of 13 cases of pineal parenchymal tumors was represented by: pineocytoma 5 cases, pineoblastoma 3 cases and mixed pineal cell tumors 5 cases. The group of 22 cases of glial cell tumors was represented by: benign cystic astrocytoma 3 cases, astrocytoma 8 cases, ependymoma 10 cases and gangliocytoma 1 case. The miscellaneous tumors group count meningioma 1 case and cavernoma 1 case. The predominant clinical features were: raised ICP in 59 cases (85.2%), Parinaud syndrome in 47 cases (70.4%), consciousness disturbances 8 cases (11.4 %), convergence paralysis 14 cases (21.3 %), nystagmus retractorius 11 cases (16.4 %), and precocious puberty 10 cases (15.6 %). The management in this series was: open surgery 62 cases, CSF drainage - VP shunt 21 cases, and neuroendoscopy 2 cases. The adjuvant therapy consisted of: radiotherapy (first option 6 cases and second option 44 cases) and chemotherapy 18 cases. No cases of radiosurgery were in this series. The surgical approaches were: occipital transtentorial (OTA) 53 cases and supracerebellar infratentorial (SIA) – 9 cases. The neuronavigation was used in cases in which was needed to establish optimal trajectories to avoid the large bridging veins, to achieve minimally invasive keyhole approach or to assist the endoscopic approach. The surgical treatment was the first option in 62 cases. In base of the SIOP classification – 1995, the total removal was accomplished in 16 cases, near total removal in 13 cases, partial removal in 24 cases and biopsy in 9 cases. The management of hydrocephalus was necessary in 57 cases (83.8%): external preoperative EVD 15 cases (26.3%), external intraoperative 19 cases (33.3%), internal: VP shunt 21 cases (36.8 %) and neuroendoscopy 2 cases (3.5%). The radiotherapy was utilized in 44 cases of sensitive tumors: germ cell tumors 21 cases, pineal cell tumors 6 cases, ependymomas 9 cases, and anaplastic astrocytomas 8 cases. The protocol of radiotherapy consisted of: whole brain 40 Gy, pineal area 15 Gy and spinal 30 Gy. The chemotherapy utilized in 18 cases consisted of cisplatin, bleomycin and actinomycin D therapy. the sequence followed was radiotherapy – chemotherapy, indicated in germ cell tumors 8 cases, pineal parenchymal tumors 3 cases and anaplastic astrocytomas 7 cases.

Results: From all 62 operated cases, the perioperative mortality (first month) was 3 case (4.8%) because of deep postoperative hemorrhage and pulmonary infection. The complications were: ocular movement disorders 21 cases (33.8%), altered

consciousness 14 cases (22.5%), seizures 13 cases (20.9%), ataxia 11 cases (17.7%), pupillary abnormalities 11 cases (17.7%), hemianopsia 9 cases (14.5%), motor deficits (hemiparesis) 8 cases (12.9%), diabetes insipidus 3 cases (4.8%). During the first 6 months of follow-up, from all 62 operated cases, the recurrences were present in 15 cases (24.1%): germ cell tumors 4 cases, pineal parenchymal tumors 3 cases, astrocytomas 4 cases, ependymomas 3 cases and ganglioglioma 1 case. The management in recurrences was second surgery +/- chemotherapy in 13 cases. The outcome calculated in base of the Karnofsky performance scale at 6 months for all 68 cases was: better & good 45 cases (66%), unchanged 10 cases (14.7%), worse 7 cases (10.2%) and death 6 cases (8.8%).

Conclusions: Pineal tumors are deep mass located near to vital neural and vascular structures. The germ cell tumors are preponderant (46 %). The multimodal treatment: surgery + radiotherapy + chemotherapy is necessary. The main approaches are OTA & SIA. The radiotherapy are the second option therapy. The outcome by Karnofsky performance was better & good in 66 % cases according to pathology.

Key words: pineal tumor, surgery, radiotherapy, chemotherapy, outcome

ACTUAL MULTIMODAL TREATMENTS IN AVMS

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Introduction: AVM represents 1/10 of cerebral aneurysms in USA, which count 1/100.000/year cases. The overall annual risk of hemorrhage is 2-4%.

Material and method: Authors present 79 consecutive cases of AVMS operated in the 1st Neurosurgical Department of the "Bagdasar-Arseni" Hospital in the period of time between 1992-2004 (12 years). These represent 79/3607 cases of mass lesions (2.19%) operated in this period of time. There were 35 females (43.9%) and 44 males (56.1%) aged between 0 - 70 years with mean age of 21.9 years. The most affected group was 11 - 30 years: 53 cases (67,1%). The including criteria: 79 cases were: admission, transfer & follow-up - in the 1st neurosurgical department, diagnosis: neuroimagic

armamentarium (CT-scan, MRI, MRA, angiography) and microsurgical management. The non - included cases 11 cases represent embolization alone and gamma knife alone. The localization of AVMs was: superficial supratentorial 57 cases (72%), deep supratentorial 11 cases (14%), brainstem 8 cases (1%) and cerebellum 10 cases (13%). The clinical onset by hemorrhage was present in 55 cases (69.6%), seizures in 14 cases (17.7%), headache/progressive non-hemorrhagic neurological deficit 10 cases (12.7%). The clinical features was dominated by headache in 66 cases (83.5%), followed by hemiparesis in 34 cases (43.0%), seizures 31 cases (39.1%) and vomiting in 26 cases (32.9 %). The distribution in basis of the Spetzler - Martin Grading System (1986) was: grade I 21 cases (27%), grade II 15 cases (19%), grade III 19 cases (24%), grade IV 13 cases (16%) and grade V 11 cases (14%). The treatment consisted of: embolization and microsurgery 7 cases (8.9%), from which total removal 5 cases and partial removal 2 cases. The microsurgery alone was performed in 62 cases (78.5%) in which: one-stage total removal in 53 cases and gradual total removal in 9 cases. The microsurgery (partial excision) and gamma-knife was performed in 10 cases (12.7%).

Results: The complications were: recurrent hemorrhage 5 cases (6.3 %) and obstructive hydrocephalus in 8 cases (10.1%) in who the V-P shunt was inserted. The postoperative neurological evaluation at 6 months showed: hemiparesis 16 cases (20.2%), seizures 23 cases (28.9%), cognitive deficits 18 cases (23.1%), mental disturbances 7 cases (8.6 %), visual disturbances 5 cases (5.7%) and obstructive hydrocephalus 8 cases (10.1%). The outcome assessment by Glasgow Outcome Scale showed: good recovery 62 cases (78.4 %), moderate disability 10 cases (12.6%), severe disability 5 cases (6.3%), persistent vegetative state no cases and death 2 cases (2.5%).

Conclusions: The cerebral hemorrhage is the initial symptom in AVMs. The microsurgery represent the best treatment in gr. I-III AVMs. The large (IV – V) AVMs in functional areas requires a multimodal treatment : embolization, microsurgery and radiosurgery.

Key words: arteriovenous malformation, treatment, outcome.

MULTIMODAL COMPLEX MANAGEMENT IN PINEAL AREA TUMORS - THREE DIFFERENT CASE PRESENTATIONS -

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Abstract.

The authors present three different cases of tumors involving pineal area, with three different options for treatment strategy. The classical treatment consists in Surgery, radiotherapy and chemotherapy.

In the first case, a 9y.o. boy is admitted in the hospital presenting Parinaud syndrome and altered level of consciousness (somnolence) with progressive evolution. Neuroimaging investigations reveal a pineal area tumor, with un-homogenous aspect on MRI. The surgery was performed, by occipital transtentorial approach, with total resection of the tumor. Anatomopatological result was: immature teratoma. Consequently, the boy was submitted to adjuvant radiotherapy. The evolution was perfect, in early and late postoperative period, without neurological deficits.

The second case was a girl 14y.o. admitted for signs of raised intracranial pressure (ICP) – cephalaea, vomiting – associated with progressive ataxia. Paraclinical evaluation reveals an intracranial tumoral mass located in the pineal area, a well-defined homogenous tumor on MRI images resembling a germinoma, associated with internal hydrocephalus. Also, axial and sagittal MRI images revealed a metastasis in the suprasellar area. Considering the age, the location of the tumoral mass, and the high probability for a germinoma, surgery was not indicated. Radiotherapy only was performed and the post-irradiation images show an almost complete remission of the tumoral mass in pineal area and the disappearing of the metastasis in the sellar area. Clinical evolution was also very good.

The last case, represented by a 13 y.o. boy, was admitted for signs of progressive raised ICP associated with a Parinaud syndrome. The neuroimaging investigation reveal a pineal tumor associated with multiple spinal metastases. Because of the progressive clinical symptoms, surgery was performed, by occipital transtentorial approach, with complete removal of the pineal tumoral mass. Anatomopathology result: germinoma. For the rest of the metastases, in spinal axis, adjuvant complementary radiotherapy was indicated, including the spinal axis. The post irradiation images reveal the good remission of the spinal secondary tumors.

Conclusion: Pineal area tumors require a complex multimodal management, depending on the aspect, location, clinical signs and secondary metastases. Preoperative neuroimaging evaluation is mandatory in order to plan a perfect and individualized therapy strategy.

The use of Frame based Stereotactic Neuronavigation in Cerebral Cavernomas

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A serious problem in the surgery of cerebral cavernomas is the difficulty in finding them, once the bone flap is done and the durra mater is incised. The cavernomas are usually seated in the depth of the brain, and usually give no cortical "clues" to where their real position is.

The modern response to that problem is image guided neuronavigation (N.N.). But that technique is very costly and technically very fastidious. A less expensive, and time saving method is the neuronavigation with the help of a stereotactic frame.

In this view, we performed a series of 4 hemispherical cavernomas with the aid of the CRW(Radionics) stereotactic device.

The bone flap was much reduced in size. The damage to the cortex was minimal, though all lesions were seated bellow eloquent brain areas and the path to the cavernomas was straight, without damage to the surrounding brain.

The results were excellent, with the discharge of the patients, with no neurological deficits, after 1 week.

The frame based stereotactic neuronavigation is a simple and cost effective method, in conjunction with microsurgery, in the treatment of cerebral cavernomas.

INTRACEREBRAL HEMORRHAGE SECONDARY TO AN INTERNAL CAROTID ANEURYSM RUPTURE WITH CAVERNOUS SINUS DYSECTASIA

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Abstract.

The authors present a rare case of cavernous sinus dysectasia due to the rupture of an internal carotid aneurysm with secondary massive intracranial hemorrhage.

A 27 y.o. boy is admitted in the hospital, presenting signs of raised ICP (cephaleea, vomiting, photophobia) associated with a right sixth cranial nerve paresis. The first CT scan evaluation was normal. Consequently, an angiography was additionally performed (DSA – digital subtraction angiography) and the investigation revealed a right internal carotid artery aneurysm. Few hours later the patient installs severe headaches, right palpebral ptosis and palpebral chemosis, intracranial wheezing, and fever. It was supposed a right carotic-cavernous fistula, associated probably with a cavernous sinus trombophlebitis. A new CT scan revealed a huge intracranial hemorrhage with intraventricular effraction. A second arteriography shows the effraction of the aneurysm, which probably dissected the cavernous sinus, with consecutive chemosis, ocular edema and intracranial wheezing. Because of the altered level of consciousness, a palliative surgical intervention was performed: the cervical ligature of internal carotid artery, associated with an external ventricular drainage. Unfortunately, the evolution was rapidly lethal few hours later. The autopsy confirmed the diagnosis of internal carotid aneurysm rupture inside of the cavernous sinus, with intracerebral hematoma and massive intraventricular blood effraction.

Conclusion. Sometimes, after the first minimal clinical signs, the internal carotid artery aneurysm could have fulminant evolution. This case is a rare case of cavernous sinus dysectasia due to the intracavernous rupture of the aneurysm, with a rapid lethal evolution. The neuroimaging complex investigation was performed, in order to establish the correct diagnosis and evolution of the vascular cerebral lesion.

Neuropsychological implications in mild head injury in children

Virginia Rotărescu, Ciurea AV, Ligia Tătăranu

M.R.I. ASPECTS IN VON HIPPEL-LINDAU DISEASE

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PURPOSE

PRESENTATION OF SOME IMAGISTIC ASPECTS OF VON HIPPEL-LINDAU DISEASE

MATERIAL AND METHOD

THREE PATIENTS WITH MULTIPLE C.N.S. HEMANGIOBLASTOMAS - BRAIN AND/OR SPINAL CORD - EXAMINED BY THE AUTHOR BETWEEN JANUARY 2001 - MAY 2004 ON A M.R.I. MACHINE 1T SIGNA HORIZON GENERAL ELECTRIC. ALL THE CASES WERE MALES BETWEEN 20 AND 40.

THE BRAIN AND SPINE M.R.I. EXAMS WAS COMPLETED BY AN ABDOMINAL M.R.I. IN ORDER TO CHECK THE ABDOMINAL ABNORMALITIES MET WITH VON HIPPEL-LINDAU DISEASE.

RESULTS

IN TWO CASES WE FOUND THE PREDOMINANCE OF HEAMGIOBLASTOMAS EITHER IN THE SPINAL CORD OR IN THE BRAIN - IN THE LATTER THE HEMANGIOBLASTOMAS WAS SITUATED EXCLUSIVELY IN THE POSTERIOR CRANIAL FOSSA.

ONE OF THE CASES PRESENTED MULTIPLE HEMANGIOBLASTOMAS BOTH IN THE BRAIN AND IN THE SPINAL CORD. THIS CASE HAD SUPRATENTORIAL HEMANGIOBLASTOMA WHICH REPRESENT A RARITY.

ALL CASES PRESENT RENAL AND/OR PANCREATIC CYSTS.

CONCLUSIONS

THE VON HIPPEL-LINDAU DISEASE THOUGH A RARE ENTITY WITH QUITE A GREAT GAMUT OF IMAGING ASPECTS BENEFITS BY M.R.I. FOR CHECKING OF THE LESIONS.

IT IS ESSENTIAL FOR THE IMAGING FOLLOW UP OF THESE PATIENTS TO SHOW THE LESIONS ASSOCIATED WITH CLINICAL SYMPTOMS (HIGH INTRACRANIAL PRESSURE) AND ALSO THE LIFE THREATENING LESIONS (RENAL CELL CARCINOMAS).

M.R.I. EVALUATION OF SPINAL ARTERIOVENOUS MALFORMATIONS

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PURPOSE

PRESENTATION OF 5 CASES OF SPINAL ARTERIOVENOUS MALFORMATIONS (A.V.M.s) STRESSING THE DIFFICULTIES IN THE NONINVASIVE EVALUATION OF THESE ENTITIES AND NAMELY BY M.R.I.

MATERIAL AND METHOD

THE 5 PATIENTS OF THE STUDIED GROUP WITH CLINICAL SUSPICION WAS PROVED BY M.R.I. TO ESTABLISH THE VASCULAR AFFERENCES AND EFFERENCES AS WELL AS THE REPORTS OF THE VESSELS WITH THE SPINAL CORD WE USED M.R.A.

ALL THE CASES WERE EXAMINED BY PC M.R.A., TWO OF THEM BENEFITED BY 3D TOF SPGR M.R.A. WITH CONTRAST MEDIUM.

THE CASES WERE MADE ON AN M.R.I. MACHINE 1T SIGNA HORISON GENERAL ELECTRIC.

RESULTS

THE MIP RECONSTRUCTIONS SHOWED THE VASCULAR AFFERENCES AND EFFERENCES, M.R.I. SUCCEEDED IN PROVING THE REPORT OF THE VESSELS WITH SPINAL CORD AND ALSO THE PRESENCE OF THE INTRAMEDULARY BLEEDING.

DESPITE THE NARROW VESSELS IN THIS REGION THE MANIPULATION OF THE DATA DURING THE RECONSTRUCTION OFFERED USEFUL IMAGES FOR THE CLINICIANS.

IT'S RATHER DIFFICULT TO SEPARATE THE ARTERIES FROM THE VEINS ON M.R. IMAGES. INSPITE OF ALL THE EFFORTS OF ADAPTING THE VENC FOR PC M.R.A. AS

WELL THE DELAY FOR 3D TOF SPGR THE DIFFICULTY STILL REMAINS.

CONCLUSIONS

THE M.R.I. AND M.R.A. CONSTITUTE IMAGING METHOD OF HIGH VALUE IN EVALUATION OF SPINAL ARTERIOVENOUS MALFORMATION.

IN THE MEANTIME, HOWEVER, THEY CANNOT REPLACE THE SPINAL ANGIOGRAPHY FOR THE PATIENTS WHO SHOULD BENEFIT BY THE SURGICAL TREATMENT OF THE SPINAL ARTERIOVENOUS MALFORMATIONS.

Image guided surgery-our experience

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Our paper presents the importance of the neuronavigation system (Radionics) which was introduced in our Clinical Hospital since 2002, which has become indispensable in contemporary neurosurgery with the progressive development of the hardware and software equipments. We present 53 cases with diverse neurosurgical pathology which were operated using image guided surgery during 2002–2004. Our series consisted of 29 brain metastases, 4 meningiomas, 3 low grade gliomas and 17 frameless stereotactic biopsies (9 glioblastomas, 6 abscesses, 2 lymphomas). The Radionics System allows surgeons to integrate different images (CT and MRI) in the surgical planning with satisfactory precision, to avoid eloquent brain structures pre and intraoperatively. The image guided surgery is easy to use, identifies precisely the target and the risk structures, and avoids intraoperative manipulation and injury of the brain. Results depend on the acknowledgement of the navigation errors after skull opening in real time. Our work advises over the use of image guided neurosurgery systems, as in our series analysis patients had a low complication rate, it brought good neuropathological diagnoses and it is easy to use and reliable.

CEREBRAL ABSCESS - A 40 CASES SERIES REVUE

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Authors analyze 40 cases series of cerebral abscess operated between March 1991-March 2003, in the Fourth Neurosurgical Department by the same team. We underline the general series profile: peak of age in the fifth decade -13 cases (32,5%), predominance in females -26 cases (65%), association with heart defects in four cases (10%), positive bacteriological examination for germs in only 18 cases (45%), all negative for HIV infection.

Majority of cases presented a supposed medical condition favoring dissemination of a previous infection: malnutrition, tuberculosis, chronic alcoholism, chronic liver malady, neglected dental or ear infections, and only 4 cases (10%) have been diagnosed with secondary immunodeficiency syndromes following autoimmune systemic diseases.

According to our treatment policy all cases except one, (treated by puncture and aspiration) benefited of open surgery and total removal of the lesions, without local recurrence. Four cases remained with permanent motor deficit (10%), one (2,5%) with controllable seizures, we recorded no recurrence and one peri-operative decease.

Follow-up have been extended up to three years for at least 2/3 of patients, who resolved in time medical or surgical conditions which determined cerebral dissemination of the infection. Two patients deceased because of the previous illness one year later (complicated diabetes, and liver failure). Despite of a poor medical and biological condition, the patients with cerebral abscess outside of HIV infections, benefit from neurosurgical adequate treatment, and if supportive medical and general therapy is continued and sustained, the healing and survival in good neurological status is the rule. Our findings are similar to the results of recent works, although in our series, there is a higher frequency of aerobe germs. No differences were observed between the surgical techniques used nor between the past and current antibiotherapy patterns.

**CEREBRAL METASTASIS - A RISING SITUATION REQUESTING
NEUROSURGICAL PROCEDURES**

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Authors analyze the increasing number of cerebral metastasis with neurosurgical indication operated in the Fourth Neurosurgical Department between March 1991- March 2004. From 978 cerebral tumors operated, 120 were metastasis, 100 cases (83,33%) supratentorial, and 20 cases (16,66%) infratentorial, 36 (30%) with known origin, and 84 (70%) with undiagnosed primary origin in the moment of the operation. Dynamics of the increasing number of cases year after year reflects the increasing survival of treated cancer patients, and an increasing addressability for neurosurgical procedures when the lesion have been detected on a CT scan, available now in many diagnosis centers.

Our policy related to open surgery for a single cerebral metastasis is the same as in cerebral tumors, (we take in consideration all neurological, medical and neurosurgical criteria able to alleviate the patients status) and was not changed in time.

We dealt too with a significant increasing number of multiple cerebral metastasis of known or unknown origin (see table), these cases being the subject of oncologists.

The 36 patients with known etiology of the metastasis before surgery confirms the higher incidence of lung (52,77%) breast (13,88%) and ovarian (11,11%) cancer, but we recorded too other etiologies (22,24%).

11 cases (9,16%) were re-operated for local re-growth (3,33%) or for other brain new metastasis (5%), and one specific case (0,83%) supported five operations for mass effect and/or re-growth of three sequential metastasis of adenocarcinoma.

The postoperative course (till the patients leave our department) is excellent in 62% (complete neurologic recovery), steady in 22% (stability of symptoms and neurologic examination) and bad in 14,33%, with worsening of the neurological deficits, 1.66% deceased.

Neurosurgical operation for a single brain metastasis increases the total surviving time

for every patient according to primary cancer type, in a good neurological status. The presence of multiple brain metastases does not automatically contraindicate surgery because in properly selected patients, resection of multiple metastases can extend survival and enhance the quality of life. An awareness of how the modalities of open craniotomy, whole-brain radiotherapy, and stereotactic radiosurgery best complement each other will result in the best outcomes.

Brain metastases remain an important cause of morbidity and mortality for patients with cancer, but the majority of patients still succumb to widespread systemic disease. The goal of treatment of brain metastases should be palliation with minimal infringement upon the patient's quality of life.

CEREBRAL CAVERNOUS MALFORMATIONS – ANALYSIS OF 21 SURGICALLY TREATED PATIENTS

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To analyse clinical characteristics and prognosis after surgical treatment in cavernomas, the authors performed a retrospective study on 21 patients (12 males and 9 females), aged 21 – 53 years, who were treated microsurgically for cerebral cavernous malformations between 1999 and 2004 in the Neurosurgical Clinic of “Bagdasar – Arseni” Clinical Hospital, Bucharest, Romania. Familial forms were observed in 5 cases (23.8 %). Multiplicity in familial lesions was 19 % (4 cases). In 2 cases (9.5 %) a venous malformation clinically silent was associated. The majority of lesions occurred in the supratentorial compartment (17 cases – 80.9 %). There were 2 cases of incidentally discovered cerebral cavernous malformations. Asymptomatic patients were follow clinically and with sequential MRI. Clinical presentation was with: seizures in 11 cases (52.4 %), hemorrhage in 8 cases (38.1 %) and progressive neurological deficits secondary to mass effect in 2 cases (9.5 %). The bleeding episode was never life threatening. The neuroimaging techniques (CT scan and MRI) were used for identification, diagnosis, assessment and follow-up. Microsurgical removal of the lesion was total in 19 cases (90.5 %), and partial in 2 cases (9.5 %), both in brain stem

location. In one case of partial removal a recurrent hemorrhage occurred after 1 year, with permanent neurologic worsening. Glasgow Outcome Scale was assessed: 15 patients (71.4 %) had good recovery, 4 patients (19 %) were moderately disabled and 2 patients (9.5 %) were severely disabled.

Because of the dynamism of cavernomas, the accessible symptomatic cavernomas should be completely resected, the overall results being generally favorable.

Intraoperative electrocorticography in patients with low grade gliomas and epilepsy

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Electrocorticography (ECOG), the intraoperative recording of cortical potentials has been traditionally used in the surgical management of medically refractory partial epilepsies to identify the locations and limits of the epileptogenic area and to map out cortical functions in order to guide the extent of resection. Although the questions regarding indications and limitations of this method have remained unanswered, most of the surgeons use this method considering that it increases the safety regarding the cure of epilepsy.

We review the literature about the use of electrocorticography in patients with brain tumors an intractable epilepsy and describe our 2 year experience of using electrocorticography to guide the resection of low grade gliomas associated with resistant epilepsy.

PARASAGITAL AND FALX MENINGIOMA - A TREE YEAR EXPERIENCE 2001-2004 IN THE III TRD NEUROSURGICAL CLINIC BAGDASAR-ARSENI HOSPITAL

MD Valentin MUNTEANU, STD Bogdan ENE, MD, PHD Vasile CIUBOTARU

Meningiomas ,slow groing ,extra-axial,with arachnoid cap-cell origin are curabile intracranial tumors if completely removed,wich is not always possible.

Most commonly located along falx,convexity and sphenoid bone.They account for 14,3-19% of primary intracranial tumors.There is a preponderance in wemen with a high incidence around 45 years age.

Among meningiomas aprox 30% occur along the falx and parasagittal .

Over 50% invade the superior sagittal sinus .1/3 of these are in the anterior part of the sagittal sinus with clinical sign of headache and mental disturbances.

Ours experience is based on 318 cases of meningiomas between 2001-2004 ,and from this 94 were parasagittal and falx meningiomas .

All these cases were initially investigated with CT scan ,all contrast and with MRI .

In approximately 40% we had an angio-MRI but even in these cases we perform in all cases of parasagittal and falx meningioma a angiography especially to see the sagittal sinus patency but also the external carotid vascularisation with the characteristic tumour blush.

None of these cases have been embolised before surgery.

The most important conclusion in these cases is that we performed in 88 cases a total removal of the tumor and in the left 6 cases a grade II on the Simson scale was performed.-cases with large falx insertion.

All patients have been cured of the prior existing seizures.

We find that in 18 % of cases after the surgery , a new deficit or an increase of a prior deficit hase occurred .In these cases 15 % at a six month period folw-up the deficit was at 4 out of 5 on the ASIA scale.All cases were independent.

3% of cases had a persisting disabling deficit wich requires help for their day by day leaving.2 cases dyed after 8 and 10 month one after pulmonary oedema and one after myocardial infarction.WE THINK THAT SURGERY IS WITH A REAL BENEFITH FOR THESE PATIENTS ,IRESEPECTIVE THE AGE, AS LONG AS THE PACIENT AND FAMILY WILL IN THESE MATHER SUSSTEIN THE SURGERY.

The Effects of Cerebrolysin Treatment on Brain Bioelectrical Activity, Cognitive Performance and Functional Outcome in Patients with Traumatic Brain Injury

Florian I Stefan MD, PhD, Muresan Dafin MD

Abstract

Design

Material and methods

Sixty patients with acute TBI (twenty-six women and thirty-four men; aged 18-63 years), mild and moderate cases, were included in this study. Thirty patients received 30 ml/day Cerebrolysin associated to the conventional treatment currently prescribed in our clinic (experimental group). Another group of thirty patients received only the conventional treatment (control group). We selected the patients without severe consciousness disturbances in order to be able to perform clinical and psychological tests.

Including/excluding criteria

Initially, patients were included in one of the two groups according to clinical investigation only.

If the laboratory examination (e.g. computerized tomography) infirmed the diagnosis or brought into the light the presence of any associated diseases (renal, hepatic insufficiency), the patients were excluded from the group and replaced with the next hospitalized patient.

Study design and treatment regime

The aim of this study was to evaluate the effect of repeated i.v. infusions of Cerebrolysin solution (30ml/infusion/day, 30 infusions) on bioelectrical activity and on cognitive performance in acute and postacute TBI patients. The schedule of the clinical trial includes: 1) a baseline evaluation, performed before starting Cerebrolysin treatment; 2) 30 days of Cerebrolysin treatment; 3) a posttreatment evaluation:

Clinical and Psychological Tests

1. Consciousness level scale
2. Muscular Power Deficit Scale
3. Sensitivity Disturbance Scale set up by the author used in our clinic.
4. Mini-Mental State Examination (MMSE)
5. Van Allen's Aphasia Test
6. Clinical Global Impression (CGI)

Laboratory data

1. Computerized EEG/brain mapping
 2. CT-scan, in order to check the etiologic and topographic clinical diagnosis.
 3. Current laboratory tests
-

Results

Brain bioelectrical activity

If on the 1st day (before treatment) the differences between control and experimental group were not significant (9.39 ± 6.36 , respectively 8.96 ± 5.69), after Cerebrolysin treatment (day 30), and in comparison with baseline recordings, TBI patients showed a statistically significant decrease in average EEG power ratio score (5.5 ± 2.1 versus 8.96 ± 5.69 , $p < 0.05$) compared to the control group.

Cognitive performance

A significant improvement in cognitive performance evaluated with the MMSE was observed after the Cerebrolysin treatment. These improvements were statistically significant ($p < 0.05$) for direct scores of the MMSE items consisting of learning, attention and calculation and repeating of the 4 words.

Clinical results

If on the 1st day before treatment differences between two groups on CGI scale were not significant, after the Cerebrolysin treatment the experimental group proves a higher statistical significant level of global improvement (2 ± 0.76 versus 1.4 ± 0.72 , $p < 0.005$).

Safety

No-treatment-emergent adverse events were reported in our study. Further, no clinically relevant changes in vital signs or lab parameters were observed. Physical and neurological examination of the patients did not reveal any adverse effects of Cerebrolysin. Overall, Cerebrolysin treatment was well tolerated and safe.

Conclusion

The computerized EEG data obtained in this study indicate that repeated i.v. Infusions of Cerebrolysin increase fast (beta and alpha) frequencies and reduce relative activity power for slow waves (delta and theta) in TBI patients. These results suggest that Cerebrolysin improves the brain bioelectrical activity as it is clearly reflected by the significant reductions in power ratio values.

According to our study results Cerebrolysin treatment also improves cognitive performances (memory and attention- which are most affected in TBI).

We observed significant correlation between MMSE scores and PR values which supports the idea that TBI-associated cognitive impairment depends on brain trauma severity and is related to the level of brain bioelectrical activity as reported by others (Thatcher et al., 2001; Rapoport et al., 2002).

The improvement in MMSE scores was accompanied by significant reduction of PR scores, again indicating that EEG and cognitive functions appear to be interrelated in

TBI patients and Cerebrolysin improves both.

A significant improvement of clinical outcome was found in TBI patients after treatment with Cerebrolysin.

Recordings of biological parameters and adverse events indicate that Cerebrolysin is safe and well tolerated.

In summary, the administration of i.v. infusions of Cerebrolysin induce the following positive effects in TBI patients: 1) a reduction of EEG power ratio by increasing fast frequencies and decreasing slow activity; 2) enhance cognitive performances in tasks evaluating attention and memory functions; 3) improve functional clinical outcome. Our data show that Cerebrolysin is a suitable neurotrophic and neuroprotective treatment to improve the recovery of patients with traumatic brain injury.

Particularities of Head Trauma Treatment in Neurosurgery Department Iasi

Authors: Dr. Dana Turliuc, Prof.dr.N. Ianovici, Prof. dr.H. Aldea, Dr. A. Iordache

The authors studied a number of 500 patients with head trauma admitted and treated in our department in the last year. We followed the evolution of the patients in terms of the circumstances of trauma, body areas interested, diagnosis, degree of gravity, treatment options.

The results showed a more frequent association of head lesions with abdominal lesions, more superficial head trauma in women, more life threatening lesion in men, more frequent cases of secondary deterioration in women.

HISTOPATHOLOGICAL ASPECTS AS PREDICTIVE FACTORS FOR ACOUSTIC SCHWANNOMAS

Gabriela Dumitrescu, Bogdan Opri^oan**, Nicolai Ianovici***, Ion Poeat^a***, Hortensiu*

2004 CONFERENCE of the ROMANIAN SOCIETY OF NEUROSURGERY

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OBJECTIVE OF THE STUDY: to evaluate the correlation of the histopathological aspects with the tumour growth rates and the age of the patients with acoustic schwannomas.

PATIENTS AND METHODS: 77 consecutive patients with histologically confirmed acoustic schwannoma. These patients were treated at Department of Neurosurgery Iași between 1993 and 2003. The medical files of the patients were analysed retrospectively. We noted the patients' age and sex, the tumour size according to Koos stage, the number and the time interval between surgical removals at the same patient (when there were 2 or more operations). We re-examined the histological specimens using morphometrical analysis, searching for the quantity and for morphology of tumour cells and of intratumoral vasculature (cellular density, nuclear pleomorphism, nuclear pseudoinclusions, number and morphology of vessels).

RESULTS: We found a sex predilection with female: male ratio of 5:2. The median age at presentation was 50,2 years (age range, 17-71 years). Acoustic schwannomas of patients younger than 50 years appeared to contain significantly more Antoni type A cell tissue with striking nuclear variation and densely cellular areas. Patients older than 50 years presented conventional acoustic schwannomas with predominance of Antoni B cell tissue, with fewer enlarged hyperchromatic nuclei and thick hyalinised vessels. Independent of age of the patients, acoustic schwannomas grade IV (Koos stage) presented with densely cellular areas, with numerous enlarged hyperchromatic nuclei, containing eosinophilic pseudoinclusions or visible nucleolus. Acoustic schwannomas with two particular vascular reactions: endothelial proliferation forming irregular lumens or adventitial proliferation forming large abnormal-appearing vascular channels with walls of variable thickness and containing smooth muscle or fibrous tissue needed a second operation after a median time of 2 months, or presented a recurrence after a median time of 28,8 months.

CONCLUSIONS: Acoustic schwannomas need carefully histological examination, especially upon the intratumoral vasculature, in order to assess the possibility of a recurrence.

Intramedullary Spinal Thoracal Cavernoma. Case report

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Abstract: Despite cavernous malformations of the CNS are pathologically similar, intramedullary cavernous malformations are very rare lesions, generating gradual neurological decline, with severe deficits or acute loss of spinal function.

In this report we present a 48-years-old man with a spinal T6 intramedullary cavernoma. The lesion was radically resected via a posterior thoracic laminectomy and midline myelotomy by the senior surgeon (G.I). The gross appearance of the lesion confirmed by further histopathological examination was that of an intramedullary cavernoma, clearly demarcated from the adjacent spinal cord tissue, excised and gently extracted from the the hemosiderin-stained bed inside of the spinal cord. The postoperative clinical course was uneventful and the patient neurological condition remarkably improved 1 week later.

Angiographically occult, these lesions should be diagnosed by MRI. For symptomatic intramedullary cavernous malformations extended to the dorsal surface of the spinal cord, total resection with microsurgical techniques can offer good or excellent outcome; to asymptomatic patients a closed observation is mandatory, deeper lesions entail a higher operative risk.

Spinal cervical, C2-C3, intradural, meningotheial meningioma - A case report

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Abstract: High cervical, spinal, intradural meningiomas are rare lesions, generating gradual neurological decline, with severe deficits or acute loss of spinal function.

In this report we present a 44-years-old woman with a spinal, intradural C2-C3 meningioma. The lesion was radically resected via a cervical postero-lateral approach by the senior surgeon (G.I). The gross appearance of the lesion, confirmed by further histopathological examination was that of an meningothelial meningioma. Defining an arachnoid plane along the anterior spinal cord, tumor was dissected, gradually debulked along the lateral aspect of the spinal canal and gently extracted from the antero-lateral dural attachments. The postoperative clinical course was uneventful and the patient neurological condition remarkably improved 1 month later.

Early diagnosed by MRI, high cervical spinal meningiomas can be successfully resected by a cervical postero-lateral approach or by a cervical lateral approach, with favorably outcomes, using microsurgery, surgical laser technology, ultrasound aspiration devices, methods of spinal reconstruction and instrumentation. Advantages, disadvantages, possible complications related to approaches as like as optimal treatment options are discussed.

CT-scan IN THE DIAGNOSIS OF THE INTRAORBITAL TUMORS

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SUMMARY

Ct scan is a generally available method for the diagnosis of the intraorbital masses. It has a great value for screening the patients for further examinations.

We present the most important findings in the different types of intraorbital masses in our personal 160 cases. 112 patients, representing 75,6 % of the 148 patients, admitted after 1989 were examined with Ct-scan. Standard CT sections and special sections for the orbit and optic nerve were made.

For the orbital walls and the optic canal, supraselective, 120 degrees anteriorly declined

axial sections were performed. In 84 patients the examination was made even with contrast media.

Special 3D images, postprocessing and measurements were performed for postoperative reconstructions. This technique permitted the identification of the tumor, the intratumoral calcifications and the surrounding tissues.

Characteristic Ct scan images for vascular tumors, neurogenic tumors, mesenchymal tumors, cystic tumors, lacrimal gland tumors, intraorbital metastases and secondary intraorbital tumors are presented.

Nonconcordance between the Hunt&Hess score and the prognosis of the ruptured sylvian artery aneurysms with intracerebral haematoma

Prof. dr. I. Poata, dr. I. Streltov, Prof. C. Aldescu, dr. M. Rotaru, dr C. Cailan, dr. B. Iliescu

We analyse retrospectively a series of 34 consecutive cases of intracerebral haematoma caused by rupture of a medium cerebral artery aneurysms, in the period 1995-2003. We have studied sylvian, temporal, frontal or mixed haematoma with the diameter bigger than 2,5 cm. At a number of 6 patients, although they came in a state of deep coma (Hunt&Hess score 4 and 5), the evacuation of the haematoma led to a rapid and spectacular improvement in the state of consciousness.

In 4 of these cases, the aneurysm was clipped in the same surgery time with the haematoma evacuation and in 2 cases afterwards. From the series analysed result that the Hunt&Hess score doesn't have prognostic relevance for this category of patients, the gravity of the evolution depending first of all on the mass effect of the haematoma and secondly on the seriousness of the subarahnoid haemorrhage.

New trends and advances in anterior circulation aneurysms microneurosurgery

Ion Poata, Keisuke Ishii, Ziyad Faiyad, Marcel Ivanov, Alexandru Chiriac, Juha Hernesniemi

2004 CONFERENCE of the ROMANIAN SOCIETY OF NEUROSURGERY

In centers with high trained teams, aneurysm microsurgery knows continuous technical improvements, with operative results superior to those of endovascular methods.

We present some technical advances from the experience of the last author, well known neurosurgeon with more than 3000 operated intracranial aneurysms:

- operations based on angio-CT, renouncing at conventional angiography in most cases
- the straightforward of the pterional approach
- saline instilling of the sylvian fissure (a kind of low pressure water dissection)
- the use of the temporary clip on the aneurismal sac followed by the modeling of the sac and application of the final clip; if necessary temporary clips on the feeding vessels, Doppler intraop control of vessels permeability or intraop angiography (seldom indicated)
- the preparation of the team is important as before any performance acting (see musical conductors, gymnasts) and starts with head positioning, a really act of mental neuronavigation
- perfect collaboration with anesthetists and nurses
- some new situations can appear as evacuation of coils or clipping of restant aneurysms post endovascular procedures

In case of dedicated operative teams, the technique of microsurgical clipping of aneurysms knows continuous improvements, with results (performances) superior to endovascular methods.

Anterior circulation aneurysms' microsurgery: technical variants in suboptimal equipments and instruments conditions

Ion Poata, Ziyad Faiyad

We present some technical surgical variants (options) used in a serie of more than 300 anterior circulation aneurysms, treated by the team of the 2 authors. These variants are:

- operating with 3-4 hands (contrary of Yasargil's principle "microneurosurgery is one man's surgery"). One of the hands retracts the brain with a spatula when autostatic retractors are not available – the advantage is that in case of aneurismal rupture, 2 suctions directed to the rupture realize quick a dry field to apply a temporary clip on the

aneurismal sac or on the feeding vessel

- the application of the temporary clip is avoided as possible due to the insufficiency of cerebral protection methods on behalf of neuroanesthesists
- the preponderant use of hooks and micro dissectors can replace an imperfect microforceps elasticity or micro scissors with imperfect cut
- the use of the fronto-orbito-pterional approach, simply and quick to realize, even with classic tools (burr hole and Gigli saw) when craniotome is not available
- the approach is usually a bit larger than in one man (2 hands) microneurosurgery, providing space for 4 hands maneuvers
- the advantage of concomitant manipulating of the aneurysm by 2 operators is the possibility of reciprocal advising . The maintaining of the team requires continuous training

These technical tricks offer the possibility of microclipping anterior circulation aneurysms with results similar to those of highly equipped neurosurgical centers. Those are ways to get out of trouble when all conditions are not available (electric drill, craniotome, autostatic retractors, some microinstruments).

Technical variants in anterior circulation aneurysms' microsurgery in condition of suboptimal endowment with equipment and operator instruments.

Ion Poata, Ziyad Faiyad

We present some technical surgical variants (options) used in a serie of more than 300 anterior circulation aneurysms, treated by the team of the 2 authors. These variants are:

- operating with 3-4 hands (contrary of Yasargil's principle "microneurosurgery is one man's surgery"). One of the hands retracts the brain with a spatula when autostatic retractors are not available – the advantage is that in case of aneurismal rupture, 2 suctions directed to the rupture realize quick a dry field to apply a temporary clip on the aneurismal sac or on the feeding vessel
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These technical tricks offer the possibility of microclipping anterior circulation aneurysms with results similar to those of highly equipped neurosurgical centers. Those are ways to get out of trouble when all conditions are not available (electric drill, craniotome, autostatic retractors, some microinstruments).

Surgical Findings in a Series of 100 Consecutive Microsurgical Clipped Anterior Communicating Artery Aneurysm

Ion Poeata, Nicolae Ianovici, Mihai Rotar, Dana Turliuc, Marcel Ivanov, Ziyad Faiyad, Alexandru Chiriac, Adina Postelnicu

In this paper we retrospectively analyses a consecutive series of one hundred anterior communicating artery aneurysms operated in our department during the period of 45 months. The aneurysms direction, dimension, associated hematoma, associated vascular lesions or variants, Hunt&Hess grade, number of applied clips, mortality, sex ratio and age were analyzed by reviewing angiography and intraoperative records. Aneurysms directions were: antero-inferiorly 59 cases, antero-superior 16 cases antero-lateral 4 cases, post-superior 8 cases, postero-inferior 7 cases, median 5 cases and fusiform 1 case. There were: 4 giant aneurysms (larger than 20 mm), 17 small aneurysms (less then 6 mm), 76 middle size aneurysms (between 7-19 mm). 21 cases were associated with hematoma requiring emergency evacuation (3 subdural, 18 intracerebral or/and cysternal. Upon hospital admittance, grade 3 of Hunt-Hess scale was most frequently observed (53 cases). Hunt-Hess grade at admission was 2 in 25 cases and grade 4 in 22 cases. Female/male ratio was 64/36. Associated lesions were: multiple aneurysms 3 cases, vascular anatomical variants 26 cases, associated preaneurysmal lesions 11 cases, pituitary adenoma 1 case. Intraoperative rupture

occurred in 8 cases. Mortality related with surgery 4 cases. Microsurgical approach for anterior communicating artery aneurysms is relatively safety procedure, with possibility of improvement. It gives a low mortality rate and offers the visualization of some associated lesions or anatomical variants.

Clinical and Biomechanics Study on Aneurysms Formation

Ion Poeata, MD, PhD, Prof; Florin Munteanu, PhD; Marcel Ivanov, MD, BSc

Saccular aneurysm origin, growth and rupture are still unclear: arterial wall area of medial layer displasia together with blood flow characteristics is involved. In our previous papers we consider several possible preaneurysmal stages: microaneurysm, blister-like aneurysm, infundibular dilatation and thin wall fusiform dilatation. In this study, a biomechanical model was used to analyze how preaneurysmal lesions evolve into a saccular aneurysm in specific hemodynamic conditions. From a prospective series of 63 cases with ruptured saccular aneurysm microsurgical clipped during 12 months period we selected 16 associated preaneurysmal lesions (early stage aneurysmal lesions ESAL): 2 microaneurysms, 2 blister-like aneurysms, 7 infundibular dilatations, 5 fusiform dilatations. A mathematical model was used to explain the possible sequence thin arterial wall area- preaneurysmal lesion- saccular aneurysm related to blood flow characteristics in specific areas: arterial bifurcation, branching, loop. Saccular aneurysm origin from arterial dysplastic wall areas is flow related and predictable mathematically if flow characteristics are recorded.

Histological – and Clinical Correlations in Chronic Subdural Hematomas

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There are presented 32 cases of operated Chronic Subdural Hematomas with histological examination of the parietal capsula. The main microscopic aspects were, recording to main cellular infiltration, as follows: - 1.- fibrous inflammatory

nonspecific tissue – 14 cases; 2.- eosinophilic – 6; 3.- diffuse granulocytic – 5; 4.- limpho-granulocytic – 4; 5.- limpho - plasmocytic - 1; 6. fibro-conjunctive tissue with psamomatous corps – 1; fibro-conjunctive tissue with abundance of neoformation vessels – 1. Histological findings were related to sexes, age, clinical onset – surgery time interval, G.O.S. at release. There was no valid conclusion relating clinical symptomatology and the histopathological aspects, that implies existence of other factors which could contribute to this developments.

Timing in surgery of intracranial ruptured Aneurysms. Experience on 68 Cases (2002 – 2004)

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Bucharest Emergency Hospital, Dept. of Neurosurgery, (Head: A. Cristescu, MD, Ph.D.)

Over a 2 ½ years period, 68 patients were admitted as SAH emergency cases, and angiographic confirmed as ruptured intracranial aneurysms, being operated. All have been on an investigation - initial CT scan and "four vessels" cerebral digital subtraction angiography, - and management protocol including Nimotop in all cases. There were excepted other 11 cases belonging to Hunt & Hess classification gr. V., or with other concomitant severe diseases, especially cardio-vascular, and 8 cases with negative angiography. The structure of our casuistic consisted in 36 males and 32 females, with mean age 51 years (range 18 - 69 years). Recording to localization, this was as follows: - Ant.Com.A. – 27; - Post.Com.A. - 12; - M.C.A. - 23; - Pericalosal A. – 2; - Int.Carotid. A – 1; - Basilar A. – 2 ; - Vertebral A. – 1.

Onset of SAH symptoms was in 62/68 – 91,2% cases in the last 24 hrs. before the admission. Mean time interval between onset and surgery was 11 days (range 1 -30 days) .Recording to GOS at release , it could not establish significant differences among early operated (day 1 – 4) patients, and late operated ones. There are analyzed some causes which lead to later surgery : - status of patient, rebleeding, late acces to angiography.

MICROSURGICAL ANATOMY OF THE ANTERIOR COMMUNICATING ARTERY COMPLEX IN FOETUS

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ABSTRACT

Thirty formalin-fixed foetal brains (3 to 7 month old) taken from cadavers were used for study. The anatomical details of the anterior communicating artery (ACoA) complex, together with the A1 and proximal A2 segments of anterior cerebral artery were examined. The results of different diameters ratio in the three groups of age show the transformation of the cerebral vessels from the foetal to the adult type. We had found that the functional diameter represent a better approximation of the outer diameter of composite ACoA than the mean value. The less important asymmetry of the A2 segment comparing with A1 show the role of ACoA in equilibrating the distal blood flow between the two hemispheres. The perforators were classified in three types. Type I, which consist in many separate arteries without any extracerebral branch, was present in 19 cases (33%). Type II, formed by independent arteries without any extracerebral branch and arteries with the origin in one and more common stems, was found in 38 cases (arteries with the origin in common stems, was not identified (67%). Type III, which presents only arteries with origin in common stems, was not identified. the anomalies found and described in our series are the accessory middle cerebral artery , A1 segment fenestration and supreme ACoA. As far as we know an optic branch originating in Heubner artery was not described since now.

Key words: cerebral artery, foetus, anatomy.

**MICROSURGICAL ANATOMY OF THE MIDDLE CEREBRAL ARTERY
IN FOETUS**

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ABSTRACT

The microsurgical anatomy of middle cerebral artery (MCA) were studied in 30 foetuses 3 to 7 month-old. They were embalmed with formalin. We have divided the 52 undamaged hemispheres in three groups related to the outer diameter of the internal carotid artery (ICA). We studied the main and the secondary trunks, the lenticulostriate arteries and the cortical branches. The cortical arterial branches studied were the orbitofrontal, prefrontal, precentral, central, anterior parietal, posterior parietal, temporopolar, anterior temporal, middle temporal, posterior temporal, temporooccipital and angular arteries. We presented the results for length, outer diameter, number, site of origin and other particularities for all arterial structures. The study contributes to a better knowledge of the changes occurred in the cerebral arteries morphology during lifetime, placing itself in addition to the aneurysm formation research.