

ABSTRACTS

XIITH CONFERENCE OF YOUNG PHYSITIANS ST. ANNA'S UNIVERSITY HOSPITAL IN BRNO 8TH JUNE 2005

R. Zítka, O. Mach (Bakes Memorial Hospital, Brno): **Arthroscopic transtibial reconstruction of anterior cruciate ligament of the knee joint.**

One of the most frequent ligamentous injuries to the knee joint is an anterior cruciate ligament (ACL) rupture, whose potential serious consequence is the development of functional anterior instability of the knee joint. Causal therapy of apparent anterior instability in the present time is arthroscopic transtibial ACL reconstruction according to S.M. Howell (Sacramento, CA, USA).

The method of ACL reconstruction using hamstring tendon grafts of either the semitendinosus or the gracilis is a common procedure and well accepted for the anterior cruciate ligamentous knee reconstruction procedure. This method was introduced in the Czech Republic during the year 1998 and fulfils the standard criteria of anatomical substitution. Since 1999 it has become a method of first choice.

There were 708 patients (547 men and 161 women) operated on between 1998-2004 in the Bakes Memorial Hospital (Brno, CR) with very good results in 89 % (631) of the operated patients, satisfactory results in 10.5 % (74), and failure of ACL replacement in 0.4 % (3).

The established method of ACL reconstruction brings the advantages of adequate reconstruction of ACL, low operation expenses, slight postoperative pain, a short period of hospitalisation stay with the possibility of early postoperative rehabilitation and recovery, and fast return to full sports activity.

L. Gabrielová, T. Skříčka, K. Mazanec (Bakes Memorial Hospital, Brno): **Mucocele of the appendix. A case report.**

Mucocele of the appendix is a rare pathology that causes distension of the appendical lumen with mucus. The incidence ranges between 0.2-0.3 per cent of appendectomies, with a higher frequency in females and people over 50 years old. It is often diagnosed from symptoms of acute appendicitis or, if asymptomatic, as an incidental finding during ultrasonography, CT, or laparotomy.

In the period 2003-2004, 131 patients underwent appendectomy in our hospital. In one case mucocele of the appendix was described.

Case report: A 70-year-old man was admitted to our hospital for a scheduled endoscopic polypectomy of the colon. His history revealed idiopathic proctocolitis with medication therapy, in remission. Two years ago he had undergone endoscopic removal of an adenomatous polyp of the hepatic flexure and caecum.

On clinical examination the abdomen was flat and its palpitation was quite painless. The results of extensive laboratory investigation were within normal limits. The patient underwent endoscopic polypectomy of a polyp of the hepatic flexure; another one of a wide base localised in the caecum was qualified for surgery. During laparotomy an abnormally increased and deformed appendix was found. A resection of the caecal copula was performed. Histological examination showed a cystadenoma of the appendix. The postoperative course was unremarkable.

J.Bartošková (Bakes Memorial Hospital, Brno): **Incidence of thrombembolic pulmonary disease in surgical patients.**

The thrombembolic disease (TED) is an insidious complication of surgical interventions which can even lead to the patient's death. Consequential prevention from TED is a crucial problem of the successful treatment of operated patients with associated disease (IHD, atrial fibrillation, IDDE, cardiology disease, haematology disease, etc.) in both presurgical and surgical periods.

My work deals with the utilisation of heparin, especially low-molecular heparin (Clexane) as a prevention from TED. My work also proves, by evidence of pulmonary embolism in a group of 3463 operated patients in the period of 2003-2004, that pulmonary embolism is a complication of TED. During prophylactic administration of low-molecular heparin the total number of pulmonary embolism was 14, which is 0.4 % risk of pulmonary embolism for operated patients with prophylactic treatment according to the guidelines. Introduction of low-molecular heparin in the prevention from TED contributes to an effective decrease of a large incidence of the thrombembolic pulmonary disease in operated patients.

Sviteková M., Feranec R. (Department of Gynaecology and Obstetrics, Faculty of Medicine, Masaryk University, Brno, Masaryk Oncological Institute, Brno): **Carcinoma mammae in the puerperium - a case study report.**

This case study report analyses the occurrence of the mammary gland carcinoma in a woman during her pregnancy and puerperium.

The patient was a 29-year-old woman, without any familiar or personal load. There was a finding of palpable resistance in the lateral superior quadrant of the right breast in the 30th week of gestation, which was considered to be hormonal changes in pregnancy. On the 3rd day after delivery an ultrasound scan of the mamma and the axilla was performed because of persisting mastodynia, a moderate oedema in the described area, and a resistance non-responding to the typical finding in the period of incipient lactation. The result was suspicious of tumour. A core-needle biopsy revealed an invasive ductal carcinoma of grade 3, stage T4b N2 M1, with low oestrogen sensibility.

Because of the high grade of the lesion primordial surgical therapy (modified radical mastectomy) was not indicated. On the recommendation of the mammary commission, neoadjuvant chemotherapy (6 cycles of anthracyclines, 3 cycles of taxanes) was applied. A control PET scan confirmed only a residual tumour in the area of the afflicted breast and in the area of the liver out of the variable tumour cells. Curative radiotherapy (6 MeV, 50 Gy in 25 fractions in the area of the right breast and the regional lymph nodes + 12 MeV, 20 Gy in 10 fractions as boost on the tumour) was effective, after which a palpable regression of the tumour infiltration was observed. A control examination 4 months after the treatment found an extensive bilateral affection of the breast, mediastinum, and liver, thus stating a relapse of the disease. At the present time, 14 months after the delivery, a palliative chemotherapy is planned (taxanes).

From the analysis it follows that obstetricians should take care not only of routine examination, but also of breast changes and, when uncertain, they should use adjuvant diagnostic methods. A preventive examination of the mammary gland must be an integral part of an antenatal clinic.

K.Vodičková, R. Atrata., L.Hromádková., J.Řehůřek (Department of Paediatric Ophthalmology, Medical Faculty, Masaryk University Brno): **Efficacy of transposition procedures for abducens palsy - long-term results.**

The authors evaluated long-term outcomes of two surgical methods for the treatment of sixth-nerve palsy. Eighty-nine patients with paralytic strabismus secondary to sixth nerve palsy underwent surgery in the period from January 1993 to October 2003. Group A included 46 patients, who were treated using a large recession of the medial rectus combined with a supramaximal resection of the lateral rectus. Group B comprised 43 patients, in whom the Hummelsheim transposition procedure was performed with or without resection of the transposed half-tendon vertical muscles, always combined with

a recession of the medial rectus. The modified split-tendon Hummelsheim procedure involves half-tendon transpositions of the adjacent rectus muscles to the insertion of the paralysed muscle, coupled with resection of the transposed halves. The mean follow-up was 34.6 months (range: 6 to 114 months). The deviation and diplopia in primary position were compared in both groups preoperatively and postoperatively. For statistical analysis the Student-t test was used. The mean preoperative primary position deviation in groups A and B was 56 prism dioptres (PD), (range: 28 to 80 PD), and 59 PD (range: 30 to 90 PD), respectively. Diplopia was present in 78 % of Group A patients, and in 89 % of Group B patients. At the last ward round postoperatively, the mean primary deviation decreased to 27 PD (range: 6 to 40 PD) in A group, and 8 PD (range: -8 to 26 PD), ($P=0.038$). Diplopia was present postoperatively in 28 % of A group, and 9 % of B group ($P=0.029$). No cases of anterior segment ischaemia or induced vertical deviation were found. In summary, the use of the augmented half-tendon transposition procedure resulted in a significantly better primary position of the eyes postoperatively than did the single-graded recession-resection procedure of the horizontal muscles.

M.Žáčková, I.Drtilková (Department of Psychiatry, Faculty of Medicine, Masaryk University Brno): **Evaluation of the response to treatment in patients with a hyperkinetic conduct disorder treated with a combination of methylphenidate and risperidone.**

Before initiating the treatment of a hyperkinetic conduct disorder it is important to differentiate between a hyperkinetic conduct disorder (F90.1 according to ICD 10) and a disturbance of attention and activity (F90.0) or conduct disorders (F91). The term 'hyperkinetic conduct disorder' is used when diagnostic criteria for both disturbance of attention and activity and conduct disorders are met. As the aetiopathogenesis of each disorder is different, the algorithms of the treatment should be different, too. As stated in the latest recommendations in the "International consensus statement on AD/HD and disruptive behaviour disorders" (Kutcher et al., 2004), psychostimulants are used as first-choice drugs in the pharmacotherapy of hyperkinetic conduct disorders and, in case of insufficient response to the treatment, risperidone should be added. The combination was often used in in-patients of the Paediatric Ward of the Dept. of Psychiatry of the Faculty Hospital in Brno with a good impact on psychopathology before the latest recommendations were published. The question is: Could we quantify the treatment efficacy? The efficacy of the treatment with the combination of psychostimulant methylphenidate and risperidone was evaluated in our retrospective study. The study was carried out with 20 in-patients between the ages of 5 and 15 years, hospitalised on the Paediatric Ward of the Dept. of Psychiatry of the Faculty Hospital in Brno with the diagnosis of a hyperkinetic conduct disorder, treated with a combination of methylphenidate and risperidone. The changes of psychopathology were analysed in each in-patient during the treatment. The evaluation with the usage of the Clinical Global Impression (CGI) and especially of the Children's Parent Questionnaire (CPQ) was carried out. The differences between the total scores of psychopathology before initiation of the treatment and after the termination of hospitalisation were compared. According to the differences between the initial and the final scores of psychopathology in both applied examinations, most patients responded to the treatment. At the same time, the symptoms related both to disturbance of attention and activity and conduct disorders were reduced. In CGI, the symptoms related to both disturbance of attention and activity and conduct disorders were reduced in 44 % of the patients and those related to either disturbance of attention and activity or conduct disorders were reduced in 88 % of the patients. In CPQ, symptoms related to both disturbance of attention and activity and conduct disorders were reduced in 72 % of the patients and those related to either disturbance of attention and activity or conduct disorders were reduced in 27 % of the patients.

Supported by project IGA MZ ČR 6520-5

M. Krejčí, T. Novotný, Z. Gregor, J. Podlaha (Second Department of Surgery, St. Anne's Faculty Hospital, Faculty of Medicine, Masaryk University, Brno): **Vascular surgery output in the years 2003 and 2004.**

Vascular surgery includes a wide scale of operations. We present a survey of vascular surgical procedures performed at our department during the years 2003 and 2004.

Ninety-nine men and 21 women (average age 66.5 years) were operated on for carotic stenosis. We did 107 endarterectomies with venous (57) or prosthetic (50) patch angioplasty, 7 everse angioplasties, and 6 other procedures. Twenty-one internal shunts were used. We had no infection or perioperative death. In 10 patients the operation was cancelled for perioperative complications.

In the upper extremities, thrombectomy was done in 9 men and 14 women (average age 60.2 and 78.2 years, respectively). Other operations were rare.

In the aortofemoral region 73 men and 11 women were operated on for aortic aneurysm, 21 of them operated on urgently for aneurysmal rupture. The average age was 69 and 73 years respectively. There was no perioperative death, 4 patients died before operation. Other 60 men and 3 women were operated on for occlusive disease – average age 63.5 and 55 years respectively. To the majority of the patients aortobifemoral prosthesis was implanted. Sixteen other reconstructions (iliofemoral bypass...), 29 anastomotic corrections, 28 thrombectomies, and 4 perioperative PTAs were done. Eight infected prostheses were removed (all implanted before 2003) followed by extra-anatomic revascularisation in 4 patients (4 axillofemoral, 1 axillopopliteal, and 2 cross-over bypasses), leg amputation in 2, the rest were left on conservative therapy.

In 108 men and 26 women (average age 63 years), femoropopliteal bypasses (84 venous and 50 prosthetic) were implanted. Thirty-one of the 42 subarticular bypasses were venous. There were also 28 profundoplasties, 71 thrombectomies, 9 anastomotic corrections, 12 short supra-infra genu bypasses for popliteal aneurysm, 10 other reconstructions, and 13 perioperative PTAs. Postfunctional femoral pseudoaneurysms were solved in 35 cases. We explanted 4 infected prostheses (2 implanted before 2003), infection rate was 1.5 %.

During the years studied, crural venous bypass was implanted in 9 men and 4 women with an average age of 65.4 years (distal anastomosis to posterior tibial artery in 12 cases). Pedal venous bypass was implanted in 15 men and 6 women (in 16 patients to dorsal pedal artery). The average age was 69.1 years. In 10 other patients the vessels were insufficient for pedal bypass surgery. Nine reconstructional and 13 crural arterial thrombectomies were done.

In patients with renal failure 269 arteriovenous shunts were prepared. A radiocephalic fistula was the most frequent type (122 on the left forearm, 34 on the right). One hundred and one cubital shunts were established. In 6 men a prosthetic fistula was created. We did 36 shunt thrombectomies. In 3 patients shunt infection was solved by abortion of the native radiocephalic fistula (1 woman, shunt prepared in 2002) or by prosthetic explantation (2 men). The infection rate was 0.74 %.

During the 2 years 33 lumbar sympathectomies were done. Ten arterial injuries were treated. In 78 men and 29 women (average age 62 and 74.5 years, respectively), 59 pedal, 10 crural, 70 femoral, and 6 hip amputations were done. The primary amputation rate was 24.1 %.

We summarise that both the spectrum and the frequencies of our operations are fully comparable to other centres of vascular surgery

I. Palčíková (Department. of Psychiatry Faculty Hospital, Brno – Bohunice, Faculty of Medicine, Masaryk University, Brno): **Gonadal functions in patients with anorexia nervosa.**

The eating disorders anorexia nervosa and bulimia nervosa have assumed an increased importance over the past two decades as clinicians and investigators have recognised their prevalence and the difficulties associated with their treatment. Moreover, cases unresponsive to therapy are associated with a significant mortality. About 5 per cent of such patients die as a result of these disorders. A chronic form of eating disorders develops in about 25 per cent of the patients. Frequently, such patients experience a variety of metabolic complications and psychosocial sequelae, including a high prevalence of affective and anxiety disorders.

Anorexia nervosa is characterised by a deliberate, self-imposed starvation owing to a relentless pursuit of thinness and fear of fatness, leading to varying degrees of emaciation.

Bulimia nervosa is characterised by episodic patterns of binge eating accompanied by a sense of loss of control, and efforts to control body weight such as through self-induced vomiting or use of laxatives.

Some patients display the features of anorexia nervosa with bulimia or alternate between features of anorexia and bulimia nervosa.

The aim of the study was to present our own experience and determine those hormonal alternations in the gonadotropin-ovarian axis that are related to eating behaviour. Earlier theories of weight loss, decreased body fat, or exercise do not fully explain the aetiology of amenorrhoea in anorexia nervosa.

The application of contraceptives in therapy has to be taken into consideration.

The luteinising hormone (LH), follicle-stimulating hormone (FSH), oestradiol, and progesterone were measured in blood samples of patients who suffered from eating disorders.

During the period from September 2004 to June 2004, 8 patients were hospitalised who suffered from anorexia nervosa and 16 patients with bulimia nervosa in the psychotherapeutic ward of our department. In the case of two anorexia-inpatients the lower levels of gonadal hormones caused the development of osteoporosis and the sexual feeling of these inpatients was extremely decreased. On the other hand it turned out that the bulimia-inpatient levels of FSH, LH, oestradiol, and progesterone correlate with the behaviour, which results in a reduction of body fat mass – especially being on a reduction diet. Just one of these bulimia-women associated the decrease of her sexual feeling with her eating disorder. Some papers show that about 20 per cent children of these patients may suffer from growth retardation because of not enough food being prepared by their mothers – patients with eating disorders.

O. Sochor (First Department of Internal Medicine – Cardioangiology, St. Anne's Faculty Hospital, Brno): **How to treat (and not treat) Romany patients.**

It is possible to avoid some of the complications in the treatment of Romany patients, sometimes it is possible just to wait for them. Without the knowledge of strong and weak points of our most populous ethnic minority, the probability of inadequate treatment is on the increase.

The differences of laboratory results, somatic, but mainly cultural differences concerning family, housing, foods, decency, hygiene, dependencies or different comprehension of time are analysed. A model of confrontation in the waiting room is mentioned as well as disestimation or overvaluation of symptoms, the principle of non-resistance or pseudo-accord. A theory of extreme poverty of Miller is also referred.

We will treat Romanies (more diseased and relatively more numerous), it just depends how.

Z. Šubrt, A. Ferko, B. Opluštil, P. Dvořák, Z. Sedláček, P. Hoffman (Department of Field Surgery, Faculty of Military Health Sciences, University of Defence, and Department of Surgery, University Hospital, Charles University, Hradec Králové, Department of Radiology, University Hospital, Charles University, Hradec Králové): **Posttraumatic intraparenchymatous hepatic haematoma: the course of the disorder.**

Posttraumatic intraparenchymatous hepatic haematoma (IHH) is potentially suitable for non-operative management, but the major risk is bleeding and abscess formation. The aim of the study is to evaluate the course of the disease in patients with IHH. A retrospective study of patients with blunt liver trauma and IHH treated in the years 2000–2004 at the Department of Surgery in Hradec Králové was designed. These patients underwent the checkup in February 2005 focused on the liver parenchyma healing. Fifty-nine patients were admitted due to blunt hepatic trauma, 14 (25 %) had IHH. Ten patients (90 %) apparently healed without any intervention on IHH. One patient developed expanding haematoma and a liver abscess that was managed by endovascular embolisation and surgical drainage

of the abscess. One patient had a residual focus in the place of IHH 4 months after the injury. We advise non-operative management and long-time follow-up until the IHH has evidently healed. If complications develop, they should first be managed by interventional techniques. Surgery should be definitively reserved for the failure of the interventional techniques.

B. Kuřecová (Department of Gynaecology and Obstetrics, Faculty Hospital, Faculty of Medicine, Masaryk University Brno): **Common variable immunodeficiency in pregnancy.**

Common variable immunodeficiency (CVID), the most prevalent symptomatic primary immunodeficiency disease, is characterised by impaired antibody responses. Patients with CVID have decreased serum levels of immunoglobulin G and A. Males and females are affected equally, the mode of inheritance is not understood. One of the age peaks, when the diagnosis is made, is between 26 and 30 years so that women in their fertility age are affected, too.

Regular periodic replacement therapy with intravenous immunoglobulins (IVIG) is used in pregnant women as well as in other CVID patients. The regimen of IVIG administration is proposed in order to reach satisfactory levels in the blood of the newborns. Most of the IgG crosses the placenta in 6 to 8 weeks' time before delivery and the transport is dose-dependent. Therefore increasing doses of infusions are needed.

Case studies: Between 2002 and 2004 three pregnant women with CVID had been in the care of the Department of Gynaecology and Obstetrics, Faculty Hospital, Brno. All of them received therapy with human IgG, therefore no infectious complication occurred. Each woman underwent an induction of labour in term in order to time the very last dose of therapy 5 to 7 days before planned delivery. In two primiparae caesarean section delivery was performed (caused by placental insufficiency and cervicocorporeal dystocia), the para III delivered vaginally. The puerperium proceeded without any complications; all newborns were females and were breastfed.

The administration of IVIG replacement therapy in pregnancy and around the labour time is very important for the mother's immune competence; moreover it is crucial for the infant's immunity in the first months of its life. Cooperation of the obstetrician and the immunologist is very advisable. There is a necessity of programming labour; however, CVID has no influence on the mode of delivery.

T. Novotný, M. Krejčí, J. Leybold, J. Jeřábek, J. Buček (St. Anne's Faculty Hospital, Second Department of Surgery, Faculty of Medicine, Masaryk University, Brno): **An ideal method of inguinal hernia repair – a never-ending story.**

Hernia is a very common disorder. Its incidence ranges from 3 to 5 % of the population in different countries. Inguinal hernia represents 75 % of all hernias. The only therapeutic option is surgical repair, which is one of the most frequent operations performed in general surgery.

Today there are 3 groups of surgical procedures: conventional (Shouldice), open tension-free (Lichtenstein), and laparoscopic tension-free (TAPP). These groups were compared using meta-analyses of 61 randomised trials to find out which group is the best for inguinal hernia repair. The methods of anaesthesia (local, regional, general) for open inguinal hernia repair were also compared using the results of two randomised trials.

All methods of hernia repair have disadvantages and complications. Meta-analyses confirm that open tension-free methods are the best option today. There are no differences between mesh (tension-free) and non-mesh (conventional) open repair groups in complications including infections, and it is confirmed that the use of mesh is associated with a substantial reduction in the risk of recurrence. The laparoscopic approach has yet to await further analysis. A comparison of the forms of open inguinal hernia repair anaesthesia confirms considerable advantages of local anaesthesia over regional or general anaesthetics.

We can conclude that an ideal method of inguinal hernia repair does not exist. Much work remains ahead of us to develop it. The best methods that we have today are open tension-free techniques. We can also expect a renaissance of local anaesthesia for open inguinal hernia repair.

V. Raiser, M. Kunstova, J. Pechackova (Follow-up Surgical Care Ward, Bakes Hospital, Brno): **New Methods of Bedsores Local Therapy – Economic Profit?**

Bedsores represent a common problem of inpatients in perhaps all of the health-care settings. It is also ourselves who have to deal with this problem at our ward. Since January 2005 we have been using new methods of bedsores trimming using the techniques of moist wound therapy. The goal of our study was to establish which technique of bedsores local therapy brings economic benefit. We retrospectively compared a group of 19 patients whose bedsores had been treated with the classic trimming technique (dressings with solutions of Braunol, Persteril, etc.) with a group of 20 patients whose bedsores had been treated with modern methods of moist-wound therapy (hydrogels, alginates, active carbon, etc.). We evaluated the costs of used materials, dressings, sterilisation of surgical instruments, and work of the health-care staff. The average costs of one-day bedsores trimming using the classic methods were: 126.00 Kc for a calcaneal bedsores, 144.0 Kc for a sacral bedsores. The average costs of one-day bedsores trimming using the modern methods were: 58.00 Kc for a calcaneal and 67.00 Kc for a sacral bedsores. Modern techniques of moist-wound therapy are economically more beneficial than the classic methods in the local management of bedsores.

J. Ventruba (Department of Ophthalmology and Optometry, St. Anne's Faculty Hospital, Brno): **Colour vision in patients before and after cataract surgery.**

The purpose of this study was to assess colour vision (CV) before and after cataract surgery, to compare CV of arthephagic eyes with healthy controls, to find out the possible correlation of a colour vision defect with the subjective evaluation of visual functions, and to compare CV after two types of intraocular lenses had been implanted.

Thirty cataract patients were examined before and 2 months after the cataract surgery.

A posterior chamber intraocular lens (PC IOL) made of PMMA or soft acrylate was implanted. For CV testing, the standard Farnsworth D-15 test and a desaturated Lanthony DD-15 test were used. The questionnaire included Cataract Symptom Score (CSS) and the patients' self-reported troubles and satisfaction with vision. The control group consisted of healthy persons with a natural clear lens.

After the cataract surgery, a significant decrease in the number of errors in both tests ($p < 0.05$) and an overall improvement of CV ($p < 0.01$) were detected. The CV of arthephagic eyes does not differ from that of the control group. Among the various CV parameters, only a correlation of the number of major errors in the D-15 test with the extent of bothering caused by a CV defect in CSS ($p < 0.05$) was detected. No difference in CV or subjective evaluation was found after the PMMA or hydrophobic acrylate intraocular lenses had been implanted.

Cataract surgery improves CV, which is postoperatively comparable to the CV of healthy persons. The study suggests that mild and moderate CV defects have no influence on general self-reported trouble and satisfaction with vision and the PC IOL type does not influence postoperative CV parameters and subjective evaluation of visual functions.

A. Mrlian, M. Smrčka, M. Klabusay (Department of Neurosurgery, Faculty Hospital, Brno Department of Haemato-oncology, Faculty Hospital, Faculty of Medicine, Masaryk University Brno): **Controlled mild hypothermia and the immune system status in patients after severe head injury.**

A group of 89 patients after severe brain injury (Glasgow Coma Scale ≤ 8) divided into two parts underwent our research detecting changes of immune system parameters during the early period after the insult. We have searched for a relation between the use of mild hypothermia and immune system disorders. In both of the groups we observed a significant decrease of CD3+ lymphocytes and CD4+ lymphocytes levels after the insult and their gradual normalisation. Higher levels of C-reactive protein also appeared during our research. C3, C4, ceruloplasmin, and orosomucoid levels decreased. The most surprising moment of our research was the level of IgE antibodies. They were high and even got higher. They achieved values typical of atopic reaction or parasitic diseases.

Most patients with immune system decrease developed extracranial inflammatory complications. Immune system disorders appeared more frequently in patients with a lower Glasgow Coma

Scale after admission. Using mild hypothermia caused an unimportant increase of extracranial complications ($p < 0.01$).

However, the prognostic value of immune system disorders in patients after severe brain injury is low. Intensive treatment of intracranial hypertension fundamentally affects the results of our treatment (Glasgow Outcome Score). Using controlled mild hypothermia does not escalate the occurrence of extracranial inflammatory complications after severe brain injury.

M. Bočková, I. Rektor (Department of Neurology, Masaryk University, St. Anne's Faculty Hospital, Brno): **Executive functions and intracerebral cognitive event-related potentials.**

The study was designed to investigate the neurocognitive network of executive functions (planning, abstract thinking, attention, etc.) during the performance of four different visuomotor cognitive tasks.

Intracerebral P3 (cognitive event-related potentials) were recorded using depth electrodes implanted in order to localise epileptogenic foci in five epilepsy surgery candidates. The subjects performed two simple non-executive tasks (counting and copying randomly presented letters from the monitor) and two complex executive tasks (writing a letter other than that which appears on the monitor and writing a "mirrored" version of a different letter). The inter-trial interval was 16 sec, the mean number of trials in the stimuli-triggered average was 50. The differences between the executive and non-executive tasks in terms of the distribution of P3 generators were analysed.

P3 generators were observed during the performance of all four tasks in several areas: the hippocampus, the amygdala, the gyrus frontalis medialis, and the parieto-occipital cortex. The medial temporal gyrus (area 21) and the prefrontal cortex (area 46) were activated only during the two complex executive tasks; P3 generators did not appear in these areas during the simple non-executive tasks.

In addition to the prefrontal cortex, the medial temporal gyrus participates in the neurocognitive network for executive functions.

Compiled and revised by J. Litzman