

Objectives: Determine tumour parameters in operated patients with pituitary adenoma and their clinical manifestations.

Methods: In 2013-2018, 109 patients were operated due to pituitary adenoma; among them 52 females and 57 males respectively. The average age of patients was 49.4 ± 1.2 years. 18 patients (19.8%) experienced reoccurrence of tumour growth. Surgeries were performed using a transnasal and transsphenoidal approach with an operating microscope. 3 patients (2.8%) died.

Results. Removed tumours included 84 pituitary macroadenomas and 25 microadenomas. In 9 cases (8.3%), the tumour size exceeded 4 cm in diameter. In 58 cases, the growth direction was suprasellar, in 10 cases - parasellar, cavernous sinus and orbit were observed in one case each. Functional adenomas constituted 62.4% of all operated tumours. 50 prolactinomas were diagnosed, while hyperprolactinemia was observed in 21 patients (>17 ng/ml). Somatotroph pituitary adenoma was diagnosed in 18 patients (10 females and 8 males) with acromegalia. An increased STH level (> 3.0 ng/ml in males and > 8.0 ng/ml in females) was noted in 11 patients. In two cases, hypersomatotropinemia was accompanied by hyperprolactinemia. Changes in the thyroid-stimulating hormone (TSH) and thyroid hormone values (general triiodothyronine – T3 and general thyroxin – T4) were rare: out of 39 cases where the TSH was detected, its level was normal in 33 cases, reduced in 6 cases (less than 0.4 mU/l). Out of 18 cases when T4 was detected, its values were normal in 15 cases and reduced in 3 cases (<65 nM/l); out of 6 cases when T3 was detected, its values were within a norm in 4 cases and reduced in 2 cases (<40 ng/ml). Adrenal insufficiency was found in 6 patients (5.5%), cortisol was increased in 2 patients (>25 mcg/dl) and reduced in 4 patients (<5 mcg/dl). 41 patients had no hormonal disorders. Visual impairment was observed in 68.8%. 46 patients noted visual impairment due to optic disk atrophy, 25 suffered from bitemporal hemianopsia and 4 had – ophthalmoplegia.

Conclusions: Pituitary tumours shall be diagnosed based on hormone release visualization and assessment (functional tests). In each case, when tumours are found in the Turkish saddle area during imaging review, the pituitary hormonal activity shall be assessed in view of the high frequency of hormonal shifts. All pituitary tumours should undergo histopathological analysis, which should include a minimum immunodetection of pituitary hormones and Ki-67 proliferative index evaluation to predict the reoccurrence.

Keywords: pituitary adenoma, transsphenoidal surgery, pituitary hormones.

30. Two-stage surgical treatment of giant pituitary adenomas.

O. Maydannik, O. Voznyk Ia, Zinkevych, A. Lytvynenko, R. Ilyuk, B. Maniak

Center of neurosurgery, GAP clinical hospital “Pheophania”, Zabolotnogo str., 21, Kyiv, Ukraine.

Introduction: one-stage surgery of invasiveness giant pituitary adenomas with sub- and intracranial spreading remains a difficult problem due a high mortality and morbidity risks. Authors describes own experience of two-stage surgical treatment of patients with giant pituitary adenomas (GPA). **Matherials and methods:** presented 9 cases of two-stage surgery application in patients with GPA. In presented group average age amounted 41,3years, women – 5, men – 4. Performed 18 operations with combination of surgical approaches: 10 – transnasal transsphenoidal, and 8 – transcranial approaches.

Results: no one case of gross total resection; subtotal resection (70-90%) – 5 cases; almost full resection (more than 90%) – 4 patients; any cases of mortality. Described complications in early post-op period and it's dynamic.

Conclusions: two-stage surgical treatment of some patients with invasiveness GPA effective and provide long-term good clinical results. Combination of transcranial and transsphenoidal approaches for treatment of GPA permits to combine benefits of both of them.

Key-words: giant pituitary adenoma, two-stage surgery, transcranial approach, transsphenoidal approach.

31. New approaches to improvement of topographic and anatomic classification of pituitary adenoma based on own experience and literature review

Background. Currently, there are many topographic and anatomic locations of pituitary adenomas (PA). The most common are: J. Hardy (1970) scheme, modified by S.V. Wilson (1979); topographic and anatomic classification of M.G. Yasargil (1996); B.A. Kadasheva et al. (2007). Each of them has advantages and disadvantages.

The aim of our study. Analyze outcomes of surgical treatment of pituitary adenoma (PA) for 13 years and, based on obtained experience, develop a topographic and anatomic classification given advantages and disadvantages of already existing classifications.

Methods. Prospective study of treatment outcomes in PA patients, who underwent examination and treatment in Mechnikov Dnipropetrovsk Regional Hospital from 2000 to 2013 inclusive, was performed. The study included 232 successively operated PA patients.

Result. The key criterion in tumor location assessment was its growth direction, which was determined preoperatively based on computerized tomography (CT) and magnetic-resonance imaging (MRI). Having assessed the obtained data, we identified 4 PA categories by their topographic and anatomical location as follows:

Category A, endosellar location. A tumor is located within the sella turcica or broadens its walls with own volume.

Category B, endosellar location with a one-way growth direction: suprasellarly, infrasellarly, laterosellarly (to the right or left), retrosellarly, or anterosellarly.

Category C, endosellar location with a two-way growth direction. suprainfrasellarly, supralaterosellarly (to the right/left), with two-way laterosellar location and other possible variants.

Category D, endosellar location with a three (or more)-way extension: suprainfraretrosellar location, suprainfralaterosellar location, and other possible variants.

Category A made 9% of all operated PAs, category B 42%. Major prevalence (38% of this category tumors) of suprasellar growth should be noted. 24% and 25% of cases were categorized as C and D, respectively.

46 (20%) patients had intraoperative complications. 34% of complications had cat. B, 27% cat. C, 22% cat. A, 17% cat. D.

21 (9%) patients had postoperative complications. The most common postoperative complication were: suprasellar growth (67%), cat. C (26%), cat. D (7%).

37 (16%) patients were operated due to PA relapse. In most cases, tumor relapses were associated with suprasellar growth – 57% of all relapses. In categories C and D, relapses made 20% and 17%, respectively; in category A, 6%. Lethality was 0.86% (2 patients).

The suggested PA classification differs from the existing ones by the fact that all directions of tumor growth, including combination of multi-way extension in a single case, are taken into account.

Conclusion. Large percentage of cases, intraoperative and postoperative complications, tumors relapses, and the lowest indicators of radical removal fell within the categories that included more complex topographic and anatomic PA location, which requires their separation into individual groups.

KEY WORDS: pituitary adenoma; topographic and anatomic classification; complication; lethality; categories; advantages; disadvantages.

32. Супрацеребеллярний інфратенторіальний доступ до пінеальної ділянки

Смоланка А.В.^{1,2}, Смоланка В.І.^{1,2}, Гаврилів Т.С.^{1,2}

¹Обласний клінічний центр нейрохірургії та неврології, Ужгород, Україна

²ДВНЗ “Ужгородський національний університет”, Ужгород, Україна

asmolanka@gmail.com

Мета: дослідити ефективність та безпечність супрацеребеллярного інфратенторіального підходу до пухлин пінеальної ділянки

Матеріали та методи: Протягом 2019 року в Обласному клінічному центрі неврології та нейрохірургії прооперовано 7 хворих з пухлинами пінеальної ділянки. В 2 випадках було виконано ендоскопічну тривентрикулостомію та біопсію пухлини, а в 5 спостереженнях виконано видалення пухлини. У всіх випадках було виконано супрацеребеллярний інфратенторіальний підхід в положенні пацієнта на боці. Оцінювали радикальність видалення пухлини та виникнення нового неврологічного дефіциту після операції.

Результати: В 1 хворого досягнуто тотального видалення пухлини, в 3 випадках - субтотального, а в одному спостереженні було виконано тільки біопсію. Гістологічні результати: гермінома (2 хворих), пінеоцитома, гліобластома, метастаз. Жоден з пацієнтів не погіршився неврологічно після хірургічного втручання.

Висновки: Супрацеребеллярний інфратенторіальний підхід є ефективним та безпечним.

33. Brain metastases: From Whole Brain Radiotherapy to Stereotactic Radiosurgery

Olga Silaieva

Radiotherapy Department, Universal Clinic «Oberig», Kyiv, Ukraine

e-mail: olga.silaieva@gmail.com

Background. Brain metastases are common manifestation of advanced cancers, observed in up to 30% of cancer patients. Multiple treatment options are available for patients with brain metastases. Whole brain