

об'ємного образования не отмечалось, у 5 опухоль была удалена субтотально.

Летальний исход был в 1 случае, причиной явилась развившаяся в раннем послеоперационном периоде тромбозомболия легочной артерии у больной с декомпенсированным сахарным диабетом. 2 (9,5%) пациентам произведена повторная операция субфронтальным доступом в связи с КТ данными за рецидив процесса, на операции были выявлены лишь кисты селлярной области и жировая клетчатка (установленная при трансназальной операции). В 1 случае после операции развилась назальная ликворея, прекратившаяся после консервативной терапии. Послеоперационных менингитов не отмечено.

В 2 случаях нами использовалась лазерная фотодинамическая интраоперационная терапия аденом гипофиза с целью воздействия на неудаленную часть опухоли.

**Заключение.** Трансептальный трансфеноидальный доступ к области турецкого седла эффективен, отличается малой травматичностью, позволяет четко ориентироваться в анатомических структурах в ходе операции и эффективно использовать операционный микроскоп.

## Experiences with the image fusion guided brachytherapy of brain tumours in the St. John's Hospital, Budapest

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1. Intracavitary irradiation of cystic craniopharyngiomas and glioma cysts with  $^{90}\text{Y}$  yttrium silicate colloid

Since December 1975 we have instilled  $^{90}\text{Y}$  colloid into craniopharyngioma cysts in 89 procedures for 63 patients. Our results confirm the data of 74–100 % decrease in volume following high energy beta irradiation of the cystic craniopharyngioma. Cysts which remained unchanged, remained so through the observation period even for decades. The mean survival after intracavitary irradiation was 9.4 years. The neuroophthalmological state completely recovered in 10, it improved in 15 %. In 70 % it did not change and in 5 % it worsened. Our long-term results support the view that the intracavitary yttrium-90 irradiation is proved to be a non invasive and very effective method of treatment of craniopharyngioma cysts.

To evaluate the role of stereotactic endocavitary irradiation by  $^{90}\text{Y}$  of glioma cysts, we retrospectively reviewed our experience with 17 patients (8 female, 9 male) during a 19 year interval. In low grade gliomas (grade I and II) more than 50% of the cysts disappeared and 25% of them shrank up to one third of the starting volume.

2. Interstitial irradiation of brain tumours with stereotactically implanted I-125 seeds. We indicated the interstitial irradiation similar to Kretsch & Ostertag: mainly low grade glioma with progressive clinical signs and progressive tumor shown on CT and MRI images; diameter of the tumor is less than 4 cm, Karnofsky performance scale is at least 70. Inoperable pinealoblastomas, brain stem tumors, recurrent meningiomas, acoustic neurinomas were irradiated by this method too. We performed 87 operations on 71 patients since 1996. For 3D treatment planning we used the BrainLab-Target 1.13 system. After the planning

the localisation, the catheters were loaded with the I-125 seeds (3M-Amersham) and then they were stereotactically inserted into the tumour temporarily. The mean tumour volume was 13.7 cm<sup>3</sup>. The mean dose of radiation given at implantation was 61.2 Gy. (65.8 at HGG and 59.8 Gy at LGG) The mean DVH was 92.9% and the mean dose rate was 23.3 cGy/hrs.

Mean follow-up for 26 living patients was 28.8 months (median 22.2). Mean survival was 27 months (median 18.9) for 15 lost patients. Mean overall survival was 27.2 months (median 22.2) from the date of isotope implantation. The mean survival of 16 HGG was 13.2 months (median 21.6) and 27 LGG patient lived 29.4 months (mean, median 21.6). This experience demonstrates more than 1.5 year survival at 56% of high grade glioma patients and more than 5 year survival near at 30 % of the low grade glioma patients.

3. Ir-192 3 Dimensions High Dose Rate Afterloading interstitial brachytherapy of residual malignant primary brain tumours. We executed 31 HDR AL treatments in 29 patients of residual malignant gliomas between 1997 and 2005. The catheter implantation was made in the neurosurgical operating theatre at St. John's Hospital. Further dose calculations and treatment with a microSelectron afterloading unit using an Ir-192 high dose rate stepping source was made in the National Institute of Oncology. Our first experience proved that interstitial HDR AL irradiation could be a well tolerated salvage treatment for residual bulky malignant gliomas.

4. CT or image fusion guided stereotactic LINAC irradiation of brain tumours or AV angiomas.

Since 2002 we performed 21 operations. In a PhD work we compared the parameters and effects of the LINAC and interstitial irradiation

5. Interstitial treatment planning supported by image fusion. Multimodality visualisation aims at efficiently presenting integrated information obtained from different modalities, usually combining a functional (SPECT, PET, functional MRI) with an anatomical (CT, MRI). We have used image fusion for the past year. But the advantages are already obvious: 1) In planning achieving better visualisation of primary or recurrent gliomas with all the available image fusion 2) Postoperative verification the position of catheters position via CT- CT fusion, just after the implantation. 3) During the check-up the differentiation between the necrotic and live part of gliomas is more visible and it helps in determining the internal or external reirradiation or reoperation.

## Дослідження протипухлинної дії активності деяких імунomodуляторів

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Відомо, що імунomodулятори здатні як підсилювати, так і гальмувати активність імункомпетентних клітин, в той же саме час їх пряма дія на пухлини вивчена недостатньо, хоча існують припущення, що ці препарати можуть стимулювати або, навпаки, пригнічувати пухлинний ріст.

**Метою** роботи було вивчення в умовах in vitro прямої дії на пухлинні клітини різних за походжен-