



Prognostic significance of the proliferative index Ki67 for patients with craniopharyngioma

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Background: Craniopharyngioma is a benign, slow-growing epithelial tumor, in children it contributes to 5-10% of all brain tumors. Its incidence is 0,5-2 per 1,000,000 person-years. 30-50% of these tumors are recognized in childhood, most often in ages 5-14, no sex predilection is observed. It is located mainly in the sellar/parasellar region. In children adamantinomatous variant, with tendency to recur, is the most common type.

Views on the usefulness of immunohistochemical examinations Ki67 in predicting recurrences are inconclusive. The examination was conducted on small group containing both children and adults, so it concerned both adamantinomatous and papillary variants.

Objective and hypotheses:

The aim of the study was to evaluate the prognostic value of Ki67 in recurrence of craniopharyngioma in children.

The research was conducted on 84 patients with craniopharyngiomas (male 42, female 42).

Median age at tumor diagnosis was 10,22 (2-18) years.

Patients were surgically treated, 73 patients underwent total resection and the other 11 received partial resection.

All cases were adamantinomatous variant.

Tumor recurrence and regrowth occurred in 20 of 84 patients (23,8%), 12 after total resection and 8 after partial resection, over a period from 0,5 to 6,5 years (mean 2,28) since treatment.

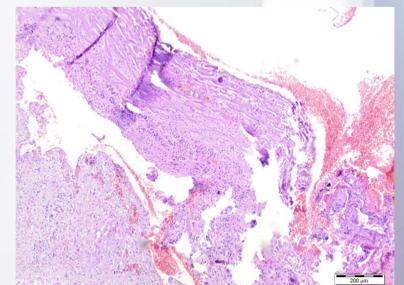
Method: All specimens were routinely stained with hematoxylin and eosin (H&E) and index of proliferation Ki67 was performed by immunohistochemistry (IHC). Mitotic rate was counted on 5 random fields in area of the greatest number of mitotic figures.

Results:

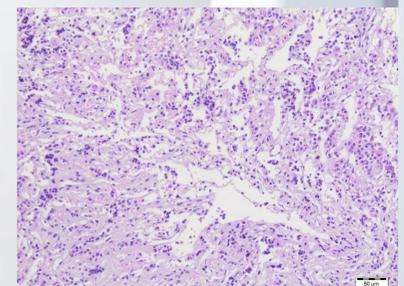
Nuclear index Ki67 varied from 0% to 20% (mean 4,1%) in patients, in which recurrences were not observed and from 0% to 20% (mean 4,2%) in patients with observed recurrence.

No statistical difference between both groups has been shown.

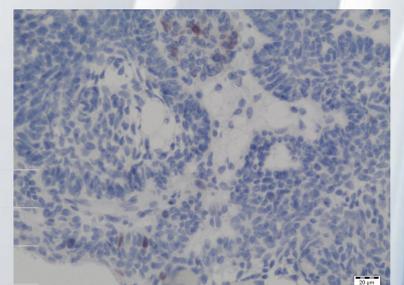
Ki67 of primary tumors was 4,8% and of recurrent tumors 5,3% (examinations were conducted on 9 tumors).



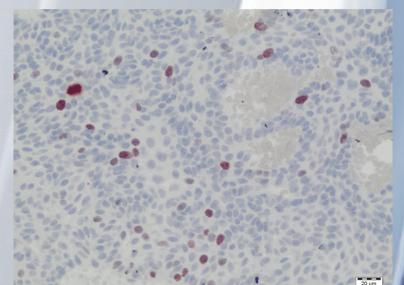
Craniopharyngioma pediatric type. The picture shows trabeculae of epithelium in fibrocollagenous stroma. H&E, original magnification x 100.



Craniopharyngioma pediatric type, area from central part of the tumor. H&E, original magnification x 200.

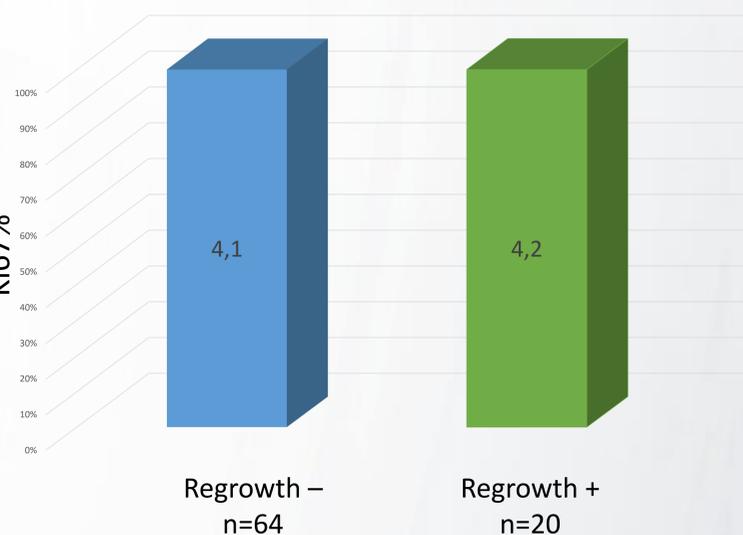


Craniopharyngioma pediatric type. Index of proliferation is low, in this case up to 2%. Ki67 staining, original magnification x 400.

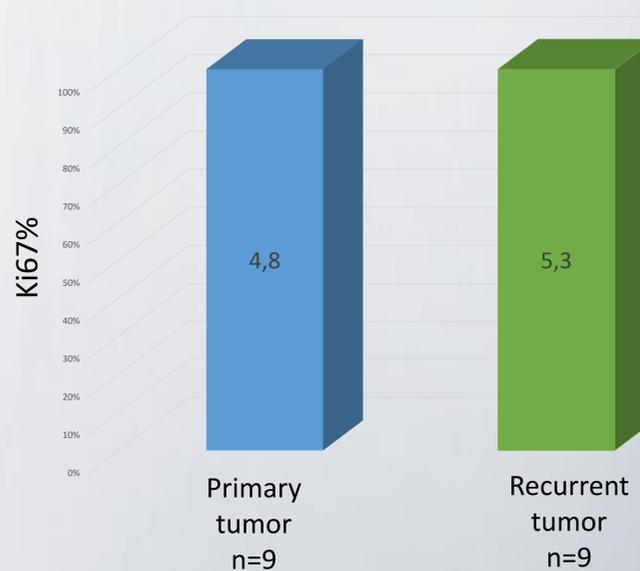


Craniopharyngioma pediatric type. Positive Ki67 staining area with strong (up to 20%) and diffuse immunohistochemical reaction, original magnification x 200.

Ki67%



Ki67%



Conclusion:

- Ki67 labeling indices of primary tumors did not have prognostic value for predicting tumor recurrence.
- Proliferative index Ki67 of recurrent tumors was insignificantly higher than that of primary tumors.

