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Endoscopic endonasal surgery in pediatric craniopharyngiomas

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Introduction: The aim of this study is to evaluate the efficacy of the endoscopic endonasal approach for pediatric craniopharyngiomas.

Material: All consecutive pediatric craniopharyngiomas, operated on through an endoscopic transsphenoidal approach between 1998 and 2013 at Center for endoscopic skull base surgery, Bologna, were collected. Clinical and radiological features of these patients has been reviewed, and the outcome has been established basing on last follow-up (mean 52 months, range 6-118).

Results: The series is composed by 17 patients, who underwent 20 transsphenoidal procedures. In 10 cases craniopharyngiomas presented a sellar and suprasellar extension, and in 6 a purely suprasellar extensions, the remaining case was purely endosellar. Gross Total Removal was achieved in 16 patients. Visual impairment normalized in 3 cases out of 9 patients with pre-operative visual disturbances, improved in another 3, and remained unchanged in the 3. At last follow-up all patients presented DI, associated to panhypopituitarism in 15 cases and partial anterior hypopituitarism in 2. Complications consisted in three cases of CSF leak, and one of hypernatremia with femoro-iliac deep vein thrombosis. At last follow-up all patients are in good clinical condition, without signs of hypothalamic compromission. Four recurrences have been observed: three were treated by endoscopic transsphenoidal re-interventions and one by transcranial transcallosal approach.

Conclusions: In our Center, endoscopic endonasal surgery has become the approach of choice for midline pediatric craniopharyngiomas. In patients younger than 13 years nasal fossa narrowness and delayed sinus pneumatization make the approach more demanding. In patients older than 13 years there is not technical difference than in adults, but the management requires a special care of the somatic growth and sexual development.