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Endoscopic trans-sphenoidal surgery in children: 8-year institutional experience

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Introduction: Endoscopic endonasal surgery (EES) has gained popularity in the management of skull base pathology, though experience in children remains scant.

Methods: A retrospective review of 39 surgeries in 35 pediatric patients who underwent EES at our institution from January 2006 to December 2013 was performed.

Results: We operated on 17 males and 18 females (mean age 12.7y, range 1-17y). Clinical onset was consistent with endocrine deficits in 16 cases (41%) and neurological in 8 (20.5%). In the remaining cases the diagnosis was made at follow-up (8=20.5%) or incidentally (7=17.9%). The preoperative hormonal status was severely compromised in 9 cases (23.1%) and 8 patients presented with diabetes insipidus (20.5%). Lesion site was sellar-sovrasellar (23=43.5%), intrasellar (10=25.6%), and other (9=23.7%). An external lumbar drainage was placed in case of intraoperative CSF leak (9=23.7%). Grade of resection was judged total in 25 (64.1%), subtotal in 8 (20.5%), partial in 6 (15.4%). Pathological diagnosis included pituitary adenoma (14=35.9%), adamantinous craniopharyngiomas (11=28.2%), Rathke's cleft cysts (5=12.8%), other (9=23.1%). Perioperative mortality was nil, postoperative complications were CSF leaks (7=17.9%), neurological worsening (2=5.1%), and CSF infection (1=2.6%). Treatment of CSF leak required the placement of external lumbar drainage in all cases and the reconstruction of the sellar floor in 2 cases. Hormonal replacement therapy was required in 12 patients (33.3%), new onset of diabetes insipidus was not observed in the postoperative period. At follow-up (mean 25m, range 1-89m) 1 recurrence and 4 progressions of residual tumor were observed. Exitus occurred in one patient with sarcoma.

Conclusion: EES is a safe and feasible approach for the management of skull base pathology in children. In spite of anatomical limits secondary to the age, this approach may achieve optimal outcomes. EES allows fast recovery that may be necessary to early starting the oncologic treatments in case of malignant tumor.