



ORIGINAL ARTICLE

Endoscopic endonasal surgery for pituitary tumors. Results in a series of 121 patients operated at the same center and by the same neurosurgeon[☆]



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KEYWORDS

Pituitary adenoma;
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Acromegaly;
Knosp's classification;
Cerebrospinal fluid leak

Abstract

Introduction: Pituitary adenomas account for approximately 15% of intracranial benign tumors. The neurosurgical results achieved since the endoscopic endonasal transsphenoidal (EET) approach was introduced in our center in 2005 are reported here.

Patients and methods: A retrospective analysis of 121 patients with sellar lesions (58% females, age 55.7 ± 16 years, range 18–82) who underwent EET surgery from February 2005 to January 2012 and were followed up for a mean time of 4.58 years (range 1.08–8.58).

Results: Six Rathke cleft cysts (3 intra-suprasellar, 1 intrasellar, 2 suprasellar); 114 pituitary adenomas (16 microadenomas, 98 macroadenomas), and 1 case of normal MRI were included. Baseline findings included hormonal changes in 59 patients (48.7%) and visual field changes in 38 patients (31%); in 7 patients (5.8%), clinical presentation was pituitary apoplexy. Complete resection was achieved in 77 patients (63.6%), subtotal resection in 29 (23.9%), and partial resection in 15 (12.3%). In patients with Grade 3 and 4 cavernous sinus invasion, resection was subtotal in 30% (12/39) and complete in 46% (18/39). Hormonal remission was achieved in 16 patients with Cushing disease (84%), 18 patients with prolactinoma (78.2%), and 18 patients with acromegaly (85.7%). There were 12 cases (9%) of cerebrospinal fluid leak, 4 cases of diabetes insipidus, and 3 cases with transient SIADH/hyponatremia. Seven patients developed panhypopituitarism. Postoperative mortality rate was 2.4%. One hundred and three patients (85.3%) were discharged from the hospital less than 48 h after surgery.

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PALABRAS CLAVE

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Prolactinomas;
Clasificación
de Knosp;
Fístula de líquido
cefalorraquídeo

Conclusion: Our results are similar to those reported by renowned pituitary units. Results achieved using an endoscopic approach in pituitary neurosurgery are better than those of microneurosurgery for cavernous sinus invasion.

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Cirugía endoscópica endonasal en tumores de hipófisis. Resultados en una serie de 121 casos operados en un mismo centro y por un mismo neurocirujano

Resumen

Introducción: Los adenomas hipofisarios representan un 15% de los tumores intracraneales benignos. Presentamos los resultados quirúrgicos obtenidos desde la introducción en nuestro centro del abordaje endoscópico endonasal transesfenoidal (EET) en 2005.

Material y métodos: Análisis retrospectivo de 121 pacientes con lesiones intraselares (58% mujeres; edad 55,7+/-16 años, rango 18-82) tratados mediante EET desde febrero del 2005 hasta enero del 2012, seguidos en promedio 4,58 años (rango 1,08-8,58).

Resultados: Incluimos 6 quistes de Rathke (3 intrasupraselares, uno intrasellar y 2 supraselares); 114 adenomas hipofisarios (16 microadenomas, 98 macroadenomas) y un caso con RMN normal. Los hallazgos basales incluían alteraciones hormonales en 59 pacientes (48,7%), seguidas de alteraciones del campo visual en 38 pacientes (31%); en 7 (5,8%) la presentación clínica fue una apoplejía hipofisaria. Logramos la resección completa en 77 casos (63,6%), subtotal en 29 (23,9%) y parcial en 15 (12,3%). En los pacientes con invasión de seno cavernoso de grado 3 y 4 la resección fue subtotal en 30% (12/39) y completa en 46% (18/39). Se obtuvo remisión hormonal en 16 pacientes con enfermedad de Cushing (84%), en 18 con prolactinoma (78,2%) y en 23 con acromegalia (89%). Hubo 12 casos (9%) de fístula de líquido cefalorraquídeo, 4 casos de diabetes insípida y 3 de SIADH/hiponatremia transitorias. Siete pacientes desarrollaron panhipopituitarismo. La tasa de mortalidad posquirúrgica fue de 2,4%. Ciento tres (85,3%) pacientes permanecieron ingresados menos de 48 horas tras la cirugía.

Conclusión: Nuestros resultados son comparables con los de prestigiosos centros de referencia en patología hipofisaria; los resultados obtenidos mediante abordaje endoscópico en la neurocirugía hipofisaria son superiores a los de la microneurocirugía cuando existe invasión del seno cavernoso.

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Introduction

Pituitary tumors, usually benign, are the most common condition in the sellar region, account for approximately 15% of benign tumors, and are incidentally found in 5–20% of cases.¹ Rathke cleft cysts, usually asymptomatic, may expand and cause compression symptoms such as campimetric defects or hormone changes, in which case they are amenable to surgery.^{2,3}

The treatment of choice of many such lesions is surgery. The surgical approach, initially transcranial, has greatly evolved, first to the transsphenoidal microscopic and finally to the endonasal endoscopic transsphenoidal (EET) approach.

Current endoscopes are based on the design of Harold H. Hopkins in the 50s. In the 90s, endoscopes started to be used in the endonasal approach to nasosinus pathology, and also as an auxiliary tool to the surgical microscope used in neurosurgery. Jho and Carrau reported in 1997 a series of 50 patients operated on by the endonasal endoscopic route with very good results.⁴

Advantages of the EET approach over the microscopic approach include shorter operating time and hospital stay. At our hospital, as in other hospitals experienced in the EET approach, this is the preferred route for treatment of sellar and parasellar tumors.^{5,6}

The purpose of this article is to report the experience in surgical treatment of lesions in the sellar region using the EET approach at Hospital Clínico y Provincial in Barcelona, and to discuss its clinical and hormonal results and complications. The experience of a single neurosurgeon (J.E.) is reported, in accordance with most international consensuses.

Patients and methods

A retrospective, descriptive study was conducted of patients with sellar lesions who underwent surgery using an EET approach at Hospital Clínico y Provincial in Barcelona from February 2005 to January 2012. Exclusion criteria included all cases where the approach was extended to the

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