



ORIGINAL ARTICLE

## Endoscopic Endonasal Approach for the Treatment of Anterior Skull Base Tumours<sup>☆</sup>

Fernando López, Vanessa Suárez, María Costales, Juan P. Rodrigo, Carlos Suárez, José Luis Llorente\*

Servicio de Otorrinolaringología, Unidad de Base de Cráneo, Instituto Universitario de Oncología del Principado de Asturias, Hospital Universitario Central de Asturias, Oviedo, Asturias, Spain

Received 11 February 2012; accepted 21 February 2012

### KEYWORDS

Endoscopic skull base surgery;  
Craniofacial resection;  
Adenocarcinoma;  
Angiofibroma;  
Skull base surgery;  
Sinonasal tumours

### PALABRAS CLAVE

Endoscopia de la base del cráneo;  
Resección craneofacial;  
Adenocarcinoma;  
Angiofibroma;

### Abstract

**Introduction:** The increasing expertise of transnasal endoscopic surgery has recently expanded its indications to include the management of tumours affecting the skull base. We report our experience with endoscopic management of these tumours, emphasising the indications and surgical technique used.

**Material and method:** A retrospective analysis was performed of patients treated by an endoscopic endonasal approach (EEA) in our department from 2004 until 2011.

**Results:** Sixty-three patients were analysed. We performed an endoscopic craniofacial resection in 32 patients (51%), an expanded EEA in 22 (35%), a transclival approach in 6 (9%) and a transpterygoid approach in 3 (5%). The most frequent benign tumour was nasopharyngeal angiofibroma (24%), while adenocarcinoma (30%) was the most common among malignancies. Mean follow-up was 26 months (range: 6–84 months). The complication rate was 5% and resection was complete in 56 cases (89%). The 5-year overall-survival was 71% in patients with malignant tumours and the effectiveness was 100% in benign tumours.

**Conclusion:** Our results support that endoscopic surgery, when properly planned, represents a valid alternative to standard surgical approaches for the management of skull base tumours.

© 2012 Elsevier España, S.L. All rights reserved.

### Abordaje endoscópico endonasal para el tratamiento de tumores de la base del cráneo

### Resumen

**Introducción:** La progresiva ampliación de las indicaciones de la cirugía endoscópica nasal ha permitido que sea utilizada como vía de abordaje en el tratamiento de tumores que afectan la base del cráneo. Presentamos nuestra experiencia en el tratamiento endoscópico de estos tumores.

<sup>☆</sup> Please cite this article as: López F, et al. Abordaje endoscópico endonasal para el tratamiento de tumores de la base del cráneo. Acta Otorrinolaringol Esp. 2012;63:339–47.

\* Corresponding author.

E-mail address: llorentependas@telefonica.net (J.L. Llorente).

Cirugía de la base del cráneo;  
Tumores nasosinusales

**Material y método:** Se presenta una serie retrospectiva de los tumores tratados en nuestro servicio entre los años 2004 y 2011 mediante un abordaje endoscópico endonasal (AEE).

**Resultados:** Fueron analizados 63 pacientes. En 32 pacientes (51%) se realizó una resección craneofacial endoscópica, en 22 (35%) se realizó un AEE ampliado, en 6 (9%) un abordaje transclival y en 3 (5%) un abordaje transpterigoideo. El tumor benigno más frecuentemente fue el angiofibroma nasofaríngeo (24%) y el adenocarcinoma (30%) fue el más frecuente entre los malignos. El seguimiento medio fue de 26 meses (rango: 6 a 84 meses). La tasa de complicaciones fue del 5% y la resección fue completa en 56 casos (89%). La supervivencia en los pacientes con tumores malignos fue del 71% a los 5 años y la efectividad fue del 100% en los tumores benignos.

**Conclusiones:** Los resultados obtenidos permiten afirmar que, la cirugía endoscópica ampliada a la base del cráneo, con indicaciones precisas, es una alternativa válida a los tradicionales abordajes abiertos.

© 2012 Elsevier España, S.L. Todos los derechos reservados.

## Introduction

The treatment of tumours affecting the skull base remains a challenge for otolaryngologists due to their centroparanasal location and the proximity of vital neurovascular structures, the central nervous system and orbit.

There is a wide variety of benign and malignant neoplasms which may affect the cranial base. The treatment of most tumours affecting this location is based on surgical resection followed by postoperative radiation therapy, which yields an overall survival rate of 50%–60% at 10 years.<sup>1</sup> However, for some histological types, the initial treatment consists of chemoradiation therapy, with surgery being reserved for salvage treatment after recurrence.

Surgical resection of these tumours is complex and requires a high degree of specialisation. The open craniofacial approaches introduced by Ketcham et al.<sup>2</sup> enable monoblock resection of a segment of the facial mass through a combined transcranial and transfacial approach. The philosophy of this approach was based on the observation that pure transfacial resection of tumours of the paranasal sinuses involving the ethmoid roof was insufficient to ensure radical treatment. The development of wide anterior and lateral approaches enabled surgical resection of tumours involving the ventral skull base. Although in experienced hands these approaches have acceptable rates of morbidity and mortality, Ganly et al.<sup>3</sup> reported postoperative mortality and major complications in 4.7% and 36.3% of patients, respectively. Furthermore, in a study by Fukuda et al.,<sup>4</sup> all patients reported a decrease in quality of life after surgery in relation to aesthetic and functional aspects.

Since Jho and Carrau,<sup>5</sup> among others, described the use of endoscopic surgery for resection of pituitary and sinonasal tumours in the late 1990s, and its indications have gradually increased and exceeded the limits established in the initial stages of the technique.<sup>6,7</sup> Endonasal endoscopic approaches (EEA) provide surgical access to the ventral skull base, enabling treatment of a wide variety of intradural and extradural conditions, as well as reconstruction of the resulting defects.<sup>8–12</sup> The evolution of these techniques has been influenced by an increase in surgical skills and a better understanding of the complex anatomy of the skull base.<sup>13</sup> As established in numerous studies,<sup>10</sup> EEA allows the

resection of lesions involving the skull base in a minimally invasive manner, with less morbidity compared with open approaches and without losing effectiveness and oncological radicality.

The purpose of this study is to present our experience in the treatment of sinonasal and skull base tumours by EEA.

## Material and Method

We reviewed the surgical registry of the Otolaryngology Service from 2004 to June 2011, collecting data from medical records concerning 63 patients with tumours affecting the anterior section of the skull base and who were operated by EEA. Of these, 29 patients (46%) had been referred from hospitals in other Spanish regions. We included in the study those patients with a minimum follow-up period of 6 months. We excluded isolated cases which had taken place before the starting date of the study, as well as those patients who underwent EEA for the treatment of inverted papillomas<sup>14</sup> and cerebrospinal fluid (CSF) leaks, because the philosophy and objectives of these surgeries were different from those of oncological surgery. We also excluded pituitary adenomas.

Data collection was based on a review of clinical histories, from which we recorded data on age, gender, anatomopathological diagnosis, prior treatment, tumour size and staging, surgical approach, complications, length of hospital stay, complementary therapies, current status and follow-up.

All patients underwent computed tomography (CT) with contrast and magnetic resonance imaging (MRI) before surgery, in order to study tumour extension. In addition, they also underwent angiography 24–48 h before surgery, so as to carry out preoperative tumour embolisation in patients presenting lesions with hypervascularisation (e.g. angiofibromas, meningiomas).

In all cases, patients were advised of the possibility of having to conduct an open approach, based on surgical findings, in order to achieve an oncologically safe resection.

The mean follow-up period was 26 months (range: 6–84 months). Unless they presented new symptoms, patients with malignant tumours were explored using nasal

Download English Version:

<https://daneshyari.com/en/article/4101113>

Download Persian Version:

<https://daneshyari.com/article/4101113>

[Daneshyari.com](https://daneshyari.com)