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ORIGINAL ARTICLE

# Primary tumours of the parapharyngeal space. Our experience in 51 patients

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**KEYWORDS**
Parapharyngeal space;
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Schwannomas

**Abstract**
*Introduction and objectives*: Tumours of the parapharyngeal space are rare, representing only 0.5% of head and neck oncology. The aim of this study is to present our experience with the diagnosis and therapies for these tumours.
*Patients and method*: This study is a retrospective review of 51 patients diagnosed as having tumours of the parapharyngeal space and treated surgically between 1984 and 2006. Tumours originating in the deep lobe of parotid gland were excluded.
*Results*: Seventy percent of the parapharyngeal space neoplasms were benign and thirty percent malignant. Pleomorphic adenoma was the most common neoplasm (37%), followed by miscellaneous benign tumours (34%), paraganglioma (21%), and neurogenic tumours (8%). Surgery was chosen in all cases, with the transcervical approach used in 32 cases, the cervical-transparotid approach in 13 cases, the transmandibular approach in 4 cases (with mandibulectomy in 1 patient), the transoral approach in 1 case, and the infratemporal fossa approach in 1 case. The most common complications were those deriving from damage to nerve structures.
*Conclusions*: Most parapharyngeal space tumours can be removed surgically with a low rate of complications and recurrence. The transcervical approach is the most frequently used.



**PALABRAS CLAVE**
Espacio parafaríngeo;
Tratamiento quirúrgico;
Tumores parafaríngeo;

**Tumores primarios del espacio parafaríngeo. Nuestra experiencia en 51 pacientes**

**Resumen**
*Introducción y objetivos:* Los tumores originados en el espacio parafaríngeo son poco frecuentes, y representan el 0,5% de la enfermedad oncológica de cabeza y cuello. El objetivo de este estudio es presentar nuestra experiencia en el diagnóstico y el tratamiento de estos tumores.

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Tumores de glándulas salivales;
Paragangliomas;
Neurinomas

*Pacientes y método:* Realizamos un estudio retrospectivo de 51 pacientes, diagnosticados y tratados quirúrgicamente de una tumoración parafaríngea, durante el período comprendido entre 1984 y 2006. Se excluyeron los tumores originados en el lóbulo profundo de la parótida.
*Resultados:* El 70% de las neoplasias del espacio parafaríngeo fueron de naturaleza benigna y el 30%, maligna. El adenoma pleomorfo fue el tumor más frecuente (37%), seguido por un grupo de tumores de origen misceláneo (34%), los paragangliomas (21%) y los tumores de origen neurogénico (8%). En todos los casos el tratamiento fue quirúrgico. Se realizó un tratamiento transcervical en 32 pacientes, un tratamiento cervical-transparotídeo en 13 pacientes, un tratamiento transmandibular en 4 pacientes (sólo se precisó de mandibulectomía en un caso), un caso de tratamiento transoral y un caso de tratamiento infratemporal tipo A. Las complicaciones más frecuentes fueron las derivadas de lesiones de estructuras nerviosas.
*Conclusiones:* La mayoría de los tumores localizados en el espacio parafaríngeo son subsidiarios de tratarse de forma quirúrgica, con una tasa baja de complicaciones y recurrencias. El más utilizado es el tratamiento transcervical.



## Introduction

The parapharyngeal space is a virtual anatomic region in the shape of an inverted triangular pyramid, extending from the skull base to the hyoid bone. It is possible to define a base, a vertex, and 3 walls. Its upper limit, or base, is the petrotympanic region of the temporal bone, and its lower limit, or vertex, the greater horn of the hyoid bone. An external wall formed by an aponeurotic muscle bundle comprising the sternocleidomastoid muscle and its aponeurosis, the superficial cervical aponeurosis lining the parotid, and the ascending branch of the lower jaw, with the pterygoid and masseter muscles. The medial wall is formed by the lateral face of the pharynx. The posterior wall is formed by the aponeurosis, the prevertebral muscles and the cervical transverse apophyses. This space is divided into 2 compartments by a styloid diaphragm or osteomuscular aponeurotic sheath originating in the styloid apophysis, and following a top-down angled plane running from back to front and lateral to medial location. The anterior or pre-styloid compartment is occupied by the deep lobule of the parotid, fat, and lymph nodes, the internal maxillary artery and the inferior, lingual and auriculotemporal alveolar nerves. The posterior or retro-styloid compartment contains the neurovascular axis, comprising the carotid artery, the jugular vein, the cervical sympathetic chain and the IX, X, XI, and XII nerve pairs.[1] After this complex anatomical description, it is easy to understand the great histological diversity of tumours that may have their origin in the parapharyngeal space.[2]

Parapharyngeal tumours, also known as pharyngomaxillary, pterygomandibular, pterygopharyngeal, or lateropharyngeal tumours, are infrequent in head and neck oncology, representing only 0.5%.[3] Nonetheless, the parapharyngeal space is of particular importance, both for the diversity of structures it houses and for the varied nature of the tumours it can contain. The anatomical characteristics of these tumours hinder early diagnosis with a standard physical examination. Complementary imaging studies, particularly computerized tomography (CT), and, above all, magnetic resonance imaging (MRI), are greatly reducing these limitations in the diagnosis and planning of surgical treatment. The benign nature of most of these tumours and their surreptitious anatomical setting require a surgical treatment capable of ensuring the complete extirpation of the lesion with minimal morbimortality. The most common treatments of choice are the transparotid approach in pre-styloid tumours and the transcervical treatment in retro-styloid tumours.

## Material and method

We report here a retrospective study of 51 patients with tumours in the parapharyngeal space undergoing surgical treatment at our hospital between 1984 and 2006.

The method used was to review their clinical and pathology records, analyzing patient data such as age, gender, clinical presentation, examination, treatment, and follow-up.

Patients were excluded from this study if their tumours were not primary but only invaded this region from an adjacent area or if they originated in the deep lobe of the parotid, as were lymph node metastases.

## Results

The age range of our study group was very large, going from months to 81 years of age; the mean was 45 years and the median, 43 years. There was a predominance of males: 30 (60%) versus 21 females (40%).

The most common reasons for coming to see a doctor was the emergence of a mass, either in the cervical area, as presented by 13 patients (25%), or in the oropharynx area, presented by 10 patients (20%). A common symptom was upper dysphagia, present in 10 patients (20%). Other less frequent symptoms included respiratory failure through the nose, dysphonia, earache, neck pain, and ageusia. We should point out that there is a group of 9 patients (18%) in our series where the illness coursed asymptomatically and diagnosis was an accidental finding after imaging study was required for other reasons.

The most common findings on physical examination were swelling of the posterior wall of the oropharynx and the