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Complete resection of parotid pleomorphic adenoma via Blair's modified approach

Resección completa de un adenoma pleomórfico parotídeo mediante el enfoque modificado de Blair

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ABSTRACT

Pleomorphic adenoma is the most frequent benign tumor of the major salivary glands, 80% located in the parotid gland, it has an age of onset between the fourth and fifth decade of life, being more prevalent in men. Its diagnosis is mainly clinical associated with ultrasonography or aspiration biopsy as a confirmatory study. Although its rate of malignancy is very low, its risk of recurrence makes the mainstay of its treatment the complete excision of it. However, there is still no consensus on the extent of the resection or on the ideal surgical approach that is associated with a lower rate of complications. This article presents a case of a female patient with a diagnosis of pleomorphic adenoma in the left parotid region, with complete tumor resection using the modified Blair approach proposed by Hernandez and Gómez. This approach technique was used with the main objective of preserving the superficial lobe of the parotid and the facial nerve, obtaining a satisfactory and uncomplicated aesthetic result. Thus exposing this approach as a useful alternative in the resection of benign parotid pathologies with a low risk of facial nerve injury and a better aesthetic result.

RESUMEN

El adenoma pleomórfico es el tumor benigno más frecuente de las glándulas salivales mayores, el 80% se localiza en la glándula parótida, tiene una edad de aparición entre la cuarta y quinta década de la vida, siendo más prevalente en hombres. Su diagnóstico es principalmente clínico asociado a la ecografía o a la biopsia por aspiración como estudio confirmatorio. Aunque su tasa de malignidad es muy baja, su riesgo de recidiva hace que el pilar de su tratamiento sea la escisión completa del mismo. Sin embargo, todavía no hay consenso sobre la extensión de la resección o sobre el enfoque quirúrgico ideal que se asocia con una menor tasa de complicaciones. En este artículo se presenta el caso de una paciente con diagnóstico de adenoma pleomórfico en la región parotídea izquierda, con resección completa del tumor mediante el abordaje de Blair modificado propuesto por Hernández y Gómez. Esta técnica de abordaje fue utilizada con el objetivo principal de preservar el lóbulo superficial de la parótida y el nervio facial, obteniendo un resultado estético satisfactorio y sin complicaciones. Exponiendo así este abordaje como una alternativa útil en la resección de patologías benignas de la parótida con un bajo riesgo de lesión del nervio facial y un mejor resultado estético.

INTRODUCTION

Pleomorphic adenoma is one of the most frequent tumors of the parotid gland and is characterized by being located in the superficial lobe, manifesting as a slow-growing mass on the angle of the jaw, in the preauricular region, generally not associated with symptoms. Painful clinical differential diagnoses include Warthin's tumor, basal cell adenoma, and benign low-

grade salivary gland tumors, such as low-grade mucoepidermoid carcinoma, adenoid cystic carcinoma, and acinar cell carcinoma.^{1,2} Clinical diagnosis must be accompanied by confirmatory tools such as ultrasonography or fine needle aspiration biopsy.

Although it is a benign pathology, whose percentage of malignancy at four years is less than 1.6%,³ its high risk of recurrence at one year and at five years is 16% and 42%³ respectively, which

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in turn, it is related to an increase in the risk of malignancy up to 7-16%, which is why complete surgical excision is mandatory, avoiding local sowings, as a fundamental pillar of treatment. For this, several techniques have been described, ranging from extracapsular or intracapsular enucleation to partial or total parotidectomy^{3,4} and whose outcome will depend on an adequate knowledge of the parotid region and its relationship with nerve structures.

Although we know, the parotid gland consists of two lobes, one superficial and the other deep with respect to the plane of the facial nerve. However, it is an artificial division, because the two lobes cannot be individualized anatomically.⁵ The facial nerve enters the gland between the stylohyoid and digastric muscles, at the level of the external jugular vein, and divides 13 mm after its exit from the stylomastoid foramen into its two terminal branches, which form a true plexus, occupying a adipose cell plane, and divides the gland into the two lobes.⁵ Giving rise to an ascending temporoparietal branch and a descending cervicofacial branch, these branches continue their divisions within the parotid gland, remaining in a vertical plane slightly obliquely lateral.⁶ The frontal and temporal branches run in a region where the SMAS is very thin and is just at the subcutaneous level, making them especially vulnerable from the surgical point of view. This risk region forms a triangle limited by the earlobe, the lateral border of the eyebrow and the superolateral angle of the forehead.⁶

On the other hand, the surgical approach is an important factor to take into account since it is directly related to complications such as facial nerve injury, aesthetic alteration and development of Frey's syndrome, the latter having an incidence of 12 -43%.^{7,8}

Thus, Fernández⁵ report some approaches in the parotid area:

1. Gutierrez 1903: incision with temporary extension, a preauricular component, one end extending into the neck in one of the furrows of the skin.
2. Blair 1918: bayonet-shaped incision in the preauricular groove and extends superiorly at the level of the helix root.
3. Adson and Ott: «Y» shaped incision with pre and post auricular components attached to a cervical incision.
4. Appiani 1967: approach that combines anterior retroauricular incision and a posterior laterocervical cut close to the hairline, to avoid visible scarring (facelift incision).
5. Ferreira: modification to the facelift incision: extension of a cervical end 1cm into the hair.

As can be seen, most surgical procedures in this area involve preauricular incisions. Within these, the Blair approach consists of a facial component that generally heals imperceptibly, while the cervical component can leave a visible scar; this incision does not allow reconstruction of the parotid area, especially after resections of large tumors, leading to contour deformity in the mandibular angle. Alternatively, the facelift approach involves a larger incision through the SMAS and allows for better cosmetic results, with a lower risk of complications such as Frey's syndrome.⁷

This is how the modification of the Blair approach, proposed by Ruiz and Guerrero, differs in the exposure of the parotid space by means of a modified endaural component that provides a different and wide exposure over the preauricular area, having the advantages of obtaining better functional results and aesthetic, with a lower risk of complications,⁵ which is why this modified Blair approach was chosen for the resection of the adenoma in the present case.



Figure 1:

Frontal and submentoververtex projections showing a mass in the left parotid region.

CASE PRESENTATION

At the Maxillofacial Surgery service of the Hospital el Tunal, a 45-year-old female patient presented on 03/04/21, with grade I obesity as the only antecedent, with a clinical picture of six months of evolution consisting of the appearance of an indurated mass in the left parotid region of progressive and painless growth. Physical examination revealed facial asymmetry given by the presence of a mass of approximately 5×3 cm that extended from the left preauricular region to the edge of the mandibular angle, adhered to deep planes, without skin involvement, without signs of facial paralysis or sensitive compromise (Figure 1).

She presents with a soft tissue ultrasound result of 02/22/21, which describes a nodule with defined contours, hypoechoic, without flow to the Doppler exploration of $27 \times 25 \times 19$ mm with a volume of 7.3 cm^3 with central echogenic images in relation with calcifications located in the upper lobe

of the left parotid gland, without evidence of adenomegaly dependent on the parotid gland.

Additionally, it is complemented by a neck tomographic study on 03/12/21 that reports a mass in the right parotid gland that may correspond to a pleomorphic adenoma (80% of the parotid glands) vs a less probable Warthin tumor.

According to the clinical and imaging characteristics for the characterization of said pathology, a benign parotid tumor was taken into account as the initial diagnostic impression, possibly a pleomorphic adenoma (well circumscribed and located in the superficial lobe), so it was performed as a management immediate excisional biopsy.

The intervention was performed on August 6, 2021 under general anesthesia, orotracheal intubation, in supine position, with rotation of the head contralateral to the lesion and prior to infiltration with local anesthetic associated with vasoconstrictor, the modified Blair approach was designed and marked with methylene blue consisting of a modified endaural incision that extends to the contour of the lobe towards the retroauricular region as an ascending curve towards the mastoid region (Figure 2).

Following the incision with a scalpel, a blunt dissection was performed in a superficial plane to the superficial muscle aponeurotic system (SMAS) in an antegrade direction, identifying and preserving the facial nerve. Obtaining adequate tumor exposure that allowed complete extracapsular resection of it (Figure 3).

Subsequently, the result of the histopathological study confirmed the diagnosis of pleomorphic adenoma, as a complete resection and in the postoperative control the patient did not present signs of infection, without motor or sensory or functional nerve alterations at the parotid level (Figure 4). Surgical wound healing was favorable, with acceptable cosmetic results (Figure 5).



Figure 2:

Marking of the modified Blair approach.

DISCUSSION

Within the surgical techniques described for the complete resection of benign parotid tumors, no significant difference



Figure 3:

Modified Blair approach, intraparotid dissection with tumor exposure.



Figure 4:

Postoperative photographs 08/17/21 with evidence of preservation of facial musculature function.



Figure 5:

Postoperative photographs with favorable aesthetic results in the surgical approach.

has been found between formal parotidectomy and tissue-conserving surgery in terms of recurrence, contrary to the lower rate of complications evidenced in the superficial and extracapsular parotidectomy.³ Therefore, the current management of benign parotid tumors has been carried out using techniques more limited to resection of the lesion. Among them, superficial parotidectomy, which is characterized by requiring a larger dissection than that used in the extracapsular technique for dissecting the branches of the facial nerve, which is associated with a higher risk of complications.^{9,10} Given this, therefore, a judicious knowledge of the anatomical characteristics of the parotid region and its limits, allows the correct selection of its approach to obtain a wide and safe surgical field, avoiding complications and obtaining the best

aesthetic results.⁵ Additionally, obtaining aesthetic results is also a main objective of the treatment of parotid tumors, when performing the classic approaches, depressions are frequently generated in the preauricular and retromandibular area, thus affecting the aesthetic result. In resections of large tumors, reconstruction with only the repositioning of the remaining healthy parotid tissue is difficult, for which the use of a sternocleidomastoid flap or SMAS is recommended.^{11,12}

Taking into account all the above considerations, we made the selection of the modified Blair technique with an endaural component with the main objective of generating sufficient exposure to allow complete extracapsular resection of the lesion and at the same time having the most favorable functional and aesthetic results possible.^{13,14} With the report

of this case it is possible to demonstrate that this technique is a viable option that allows the surgeon to have good surgical, functional and aesthetic results, without unfavorable changes.

CONCLUSION

The pleomorphic parotid adenoma is the most frequent benign tumor of the parotid gland, located in a greater proportion in the upper lobe of the latter. Although it is a benign tumor, it presents a high degree of recurrence that can lead to a percentage of malignancy in the long term, so complete surgical resection is the fundamental pillar of treatment. For this, there are multiple surgical techniques, the most used currently is tissue-conserving resection and the modified Blair approach is presented as a technique that presents easy dissection, allowing a wide tissue exposure with a low risk of nerve complications at the parotid level, as well as a favorable aesthetic result.

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