

Original Research Article

Indications of Extracapsular Lumpectomy, Conservative Superficial Parotidectomy and Enucleation in the Treatment of Epithelial Benign Tumours of the Parotid Gland

Gomez Poveda AJ¹, Aliaga Sanchez A¹, Martinez Diaz F²¹Department of Oral and Maxillofacial Surgery, ²Department of Pathology. General Hospital "Reina Sofia" from Murcia (HGM), SPAIN.***Corresponding author**

Antonio Javier Gomez Poveda. C

Email: gomexfo@hotmail.com

Abstract: We present a detailed study of benign parotid tumors during the years 2005 to 2014 of the Region of Murcia (Spain). The importance of this script lies in the need to show the indication between three surgical techniques from more conservative surgical techniques to more aggressive. We studied 474 cases benign epithelial tumors of the parotid gland, reviewing the surgical records of patients with bibliographic support, with 15 figures and 1 table. Our results show the indication of every kind of surgical technique. We conclude by studying exhaustively, surgical techniques (Superficial parotidectomy, extracapsular lumpectomy and enucleation) used in this region that the lumpectomy is less surgical aggression, and get the same results in superficial and not many big tumors.**Keywords:** parotid gland, pleomorphic adenoma(PA), extracapsular lumpectomy(EL), conservative superficial parotidectomy(CSP), enucleation(E)

INTRODUCTION

The parotid region [1] it is occupied by the parotid gland and facial nerve and is located on the top and side of the neck, on the ascending branch of the mandible. The facial nerve exits through the stylomastoid hole, which is located at a depth of 25 mm from the skin. He goes forward and out; runs between the posterior belly of digastric, outside and inside the stylohyoid, to penetrate the parotid gland where it divides into two major trunks: cervicofacial and temporofacial. These in turn are divided into five terminal branches that innervate the muscles of facial expression; These include: temporal branch, zygomatic, buccal, mandibular marginal and cervical. Salivary gland tumors constitute about 5% of head and neck and between 64% and 80% of all correspond to parotid gland. Between 68-85% are benign.

Clinically do not present facial paralysis, slow growing and not painful.

Puncture aspiration with fine needle aspiration is usually used to first diagnostic with a sensitivity of 80% and a specificity of 97%.

PA (Fig 1), is the most frequently, appears between 20 and 40 years, is slow growing and has a 0.20 micron pseudocapsule that can be crossed by extensions of the tumor. Only 0.5% of pleomorphic adenomas are multicentric. TW(Fig 2) is a benign tumor, probably originating from lymphatic elements, has a complete capsule and is found in patients older than 60 years, may be bilateral in 10% of cases and sometimes multiple. O is a benign, slow-growing tumor found in advanced age groups and is encapsulated. It is a rare tumor that corresponds to less than 1% of all tumors of the salivary glands. ACB is infrequent onset. The most common location is on its surface and slow growing. It may be multicentric although relapse is rare.

Benign parotid tumor pathology is treated with surgery having three major trends in their technique: extracapsular lumpectomy, conservative superficial parotidectomy and enucleation. Several surgical techniques have been designed for the treatment: performing surface or side, total parotidectomies

including deep or medial lobe, partial parotidectomies and enucleation.

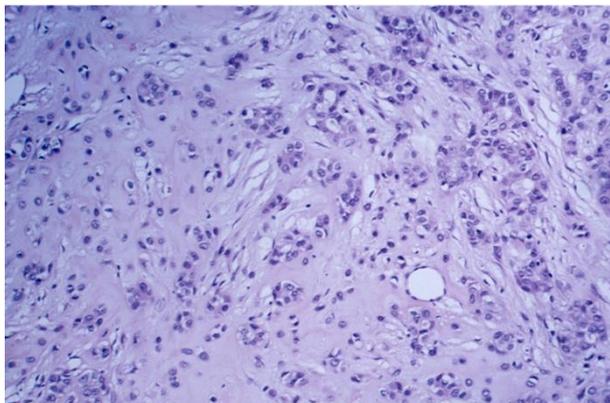


Fig-1. AP

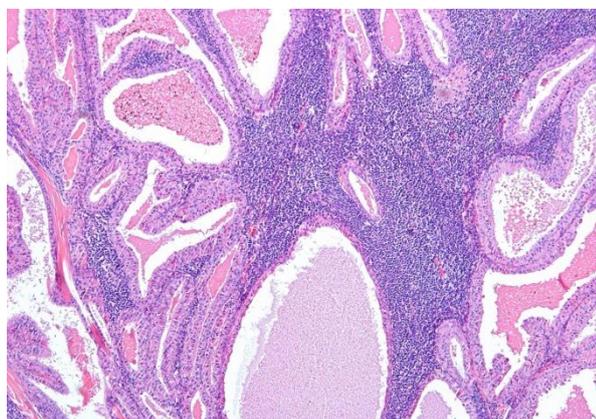


Fig-2. TW.

Enucleation

It consists of excision of an encapsulated tumor without margin.

Extracapsular lumpectomy.

EL (Fig 3-5) is a minimally invasive method that differs from classical enucleation, consisting of the incision and release of the contents of the capsule of the tumor with a margin. In the EL, SMAS[2] overlying the tumor is cut without lifting, followed by blunt dissection to the level of the tumor. A plane may be around 2 to 3 mm surrounding the tumor and is the preferred dissection plane. Careful dissection continues along the tumor capsule to prevent rupture of small tumor outgrowths that can be found. In this method, unlike other forms of parotidectomies, facial nerve identification is not performed, although the use defended monitor [4]. The facial nerve branches can be found deep or below the tumor and should be carefully dissected[5]. The previous radiological guide in TAC in

deciding whether a technical or other relationship between the vein and retromandibular trunk of the facial nerve, to maintain a minimum margin of 2-3mm extracapsular and confirm that is in superficial lobe.

TE must be applied to small, benign and surface parotid tumors[5]. Most authors apply this method to tumours between 2,5 and 4 cm. The risk of facial nerve injury during TE increases with increasing tumor size. One study [6] found a 4% risk of facial paresis after TE in tumors 4 cm or less in size compared to a 21% rate in paresis tumors greater than 4 cm. While most of the groups[7] only consider the TE for superficial lobe tumors [8], several have used for tumors in deep lobe parotid as Hussain[9].

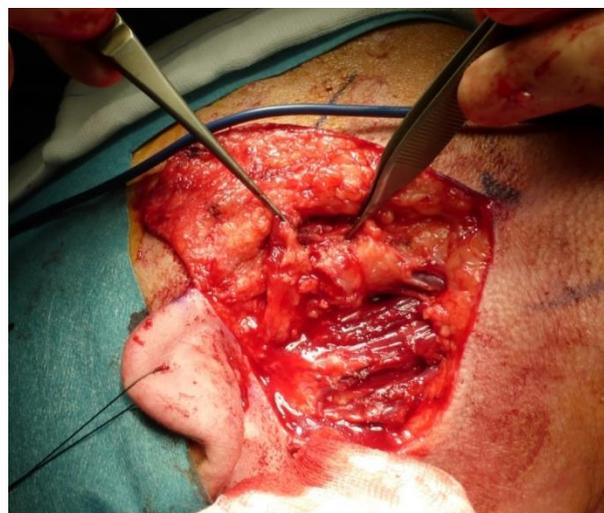


Fig-3. Incision "T" of the parotid by the MAS locating the tumor, off the ECM.



Fig-4. ET with retromandibular vein.



Fig-5. EL macroscopic part of an PA with a parotid remains as a safety margin.

Conservative superficial parotidectomy.

Firstly, a large preauricular incision, skin flap dissection; secondly, release the rear edge, deepening reaching the tympanic bone and facial nerve identification; then dissection of the facial nerve (fig6) and parotidectomy and finally, sutured.



Fig-6. Intraparotid right facial nerve trunk reset once the superficial lobe of the right parotid gland.

MATERIAL AND METHODS.

Information benign parotid tumors documentation services of hospitals in the region, using data from Tumor Registry Murcia AP services Hospital II (161 cases) on a sample of 370,000 and Hospital VII (93cases) on a sample of about 200,000 of a total population of 570,000 inhabitants, almost half of the Region of Murcia: 1,400,000. Extrapolating data Hospital I (830,000 patients) with about 250 cases every 10 years to complete the study, from the tumor registry of the hospital, through the service file pathology and

documentation service of the hospital, a total of 239 protocols.

For the descriptive analysis of the sample have been used basic descriptive methods, so that, for qualitative variables, we have obtained the number of cases present in each category and the percentage; and for quantitative variables, the minimum, maximum, mean and standard deviation values. To compare qualitative variables using the Chi-square test and in cases where the test has been significant has been done the pairwise comparisons using the Bonferroni correction. The comparison of means between groups was performed using ANOVA test under the assumptions of normality checked with the Kolmogorov-Smirnov and homogeneity of variances checked with Levene's test. In cases in which significant differences have been made is the pairwise comparisons of Tukey for contrasting groups are responsible for the differences.

Statistical analysis was performed using SPSS 22.0 for Windows. The differences are considered statistically significant those whose $p < .05$.

RESULTS

Recurrence is not dependent on the surgical technique, as seen in Table 1 and is due to other factors, mainly accidental breakage thereof, not related to surgical technique (for PA) that also worsens with EL, since most are the lower lobe and lower dissection, where there is more risk of breakage, it becomes equal in both the EL and the CSP.

EL should be the standard surgical technique of removing PA parotid because it is faster and with fewer complications, in all cases of PA, except, in very close to the trunk of facial nerve, because of more than 4cm and less of 2-3mm from facial nerve trunk, in low grade malign tumours and PA in deep lobe that is indicated la PSC (Fig 7-8); in recurrence of PA, in TW and in tumors not pleomorphic adenoma in deep lobe(Fig 9); and enucleation in basal cell adenoma and oncocyoma .



Fig-7. PA >4cm a less from de 2-3mm of n facial nerve.

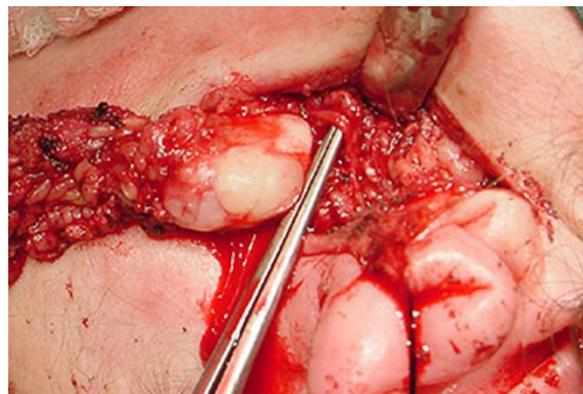


Fig 9. AP in deep lobe.

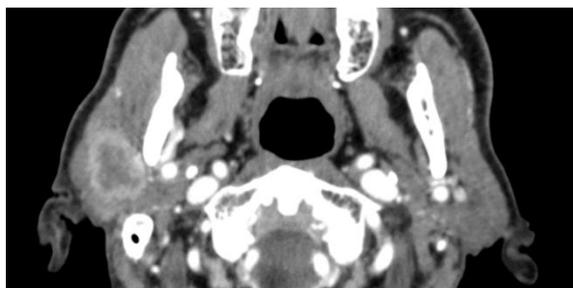


Fig-8. Low grade malignan tumours



Fig 10. Non AP tumour in deep lobe.

Table-1: Recurrence depending on the type of intervention.

Área	Recurrence	Type of intervention				χ^2 (g.l.)	p-valor
		CSP	EL	PT	PS		
II	No	127 (96,9)	10 (100,0)	13 (100,0)	5 (100,0)	0,877 (3)	0,831
	Sí	4 (3,1)					
VII	No	14 (100,0)	75 (98,7)	1 (100,0)	2 (100,0)	0,226 (3)	0,973
	Sí		1 (1,3)				
I	No	212 (96,4)					
	Sí	8 (3,6)					
Total	No	354 (96,7)	86 (98,9)	14 (100,0)	7 (100,0)	1,814	0,612
	Sí	12 (3,3)	1 (1,1)				

CSP: Conservative superficial parotidectomy. EL: Extracapsular lumpectomy. PT: Total parotidectomy. PS: Partial parotidectomy segmentaria.

Statistical analysis indicates that even if differences are not statistically significant, so the null hypothesis stating that the surgical technique of tumor recurrence were independent, although the tables as often as is observed in the PSC is confirmed. Therefore, no association between recurrence and the type of intervention and the total area is displayed.

It should reach the EL sufficient experience in CSP and it always should be complete, without separating the lobes to avoid the risk of accidental breakage of the tumor. Since the PA is a monoclonal tumor [10] CSP is not justified by the risk that there multicentricity, since the deep lobe is always left. Review likewise, that with the closure of three layers of EL is possible to avoid the collapse of the CSP infraauricular. The retromandibular vein is a constant radiation guide to determine the position of the trunk of the facial nerve [11,12,13] Based on several authors [3] and service experience X-roentgen of our hospital(HGM), radiological distance between the vein and accurate the tumor, so that this indicated the CSP, based on this last technique allows better access. Enucleation can be used in basal cell adenoma

DISCUSSION

CSP does not eliminate the risk of recurrence (2.4%) versus EL (1%), mainly at the expense of deep lobe, but the difference is not statistically significant and it gives us idea that the most important cause is accidental breakage of the tumor.

The highest risk of relapse not only due to the pseudopodia, but the possible multicentricity in the deep lobe and accidental breakage.

EL should be the standard surgical technique of removing PA parotid because it is faster and with fewer complications, in the most of cases of PA.

The PC is more aggressive and TE, however, has a shorter recovery time for the tissue less sweeping and less sinking and paralysis and E is indicated in a low tase of tumours but sometime is useful as in ACB because of a rare recurrence.

CONFLICT OF INTEREST.

Authors says no conflict of interest.

REFERENCES

1. Obaid MA, Yusuf A. Surgical management of epithelial parotid tumours. J Coll Physicians Surg Pak. 2004 Jul;14(7):394-9.
2. Gomez AJ, Martinez F, Aliaga A. Closure in three layers as a modification of the surgical technique extracapsular lumpectomy in tumours of parotid gland. IJAR. 2015; 1(13): 322-325.
3. Klintworth N, Zenk J, Koch M, Iro H. Postoperative Complications After Extracapsular Dissection of Benign Parotid Lesions with Particular Reference to Facial Nerve Function. Laryngoscope. 2010; 120(3): 484-90.
4. Albergotti WG, Nguyen SA, Zenk J, Gillespie MB. Extracapsular dissection for benign parotid tumors: a meta-analysis. Laryngoscope 2012;122:1954-60.
5. McGurk M, Thomas BL, Renehan AG. Extracapsular dissection for clinically benign parotid lumps: reduced morbidity without oncological compromise. British Journal of Cancer .2003; 89: 1610–1613.
6. Greer W, Shaun A. Nguyen SA, Zenk J, Boyd M. Extracapsular Dissection for Benign Parotid Tumors: A Meta-Analysis. The laryngoscope. 2012.122:1954–1960.
7. Piekarski J, Nejc D, Szymczak W, Wronski K, Jeziorski A. Results of Extracapsular Dissection of Pleomorphic Adenoma of Parotid Gland.2004. J Oral Maxillofac Surg. 62:1198-1202.
8. Roh JL, Extracapsular dissection of benign parotid tumors using a retroauricular hairline incision approach. The American Journal of Surgery. 2009.197, e53–e56.
9. Hussain A1, Murray DP. Preservation of the superficial lobe for deep-lobe parotid tumors: a better aesthetic outcome. Ear Nose Throat J. 2005 Aug;84(8):518, 520-2, 524.
10. Roh JL, Park CI. Function-Preserving Parotid Surgery for Benign Tumors Involving the Deep Parotid Lobe. J Surg Oncol. 2008;98:42-5.
11. Divi V, Fatt MA, Teknos TN, Mukherji SK. Use of cross-sectional imaging in predicting surgical location of parotid neoplasms. J Comput Assist Tomogr. 2005;29(3):315-9.
12. Divi V, Fatt MA, Mukherji SK, Bradford CR, Chepeha DB, Wolf GT, Teknos TN. Use of cross-sectional imaging in predicting facial nerve sacrifice during surgery for parotid neoplasms. ORL J Otorhinolaryngol Relat Spec. 2004;66(5):262-6.
13. Gomez AJ, Aliaga A, Martinez F, Polo JM, Lopez D. Extracapsular lumpectomy vs conservative superficial parotidectomy in the treatment of pleomorphic adenoma of the parotid gland. Sch. J.App.Med. Sci.,2015;3(9C):3321-3324.