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CLINICAL REPORT



Extracapsular dissection and minimally invasive procedures of primary benign parotid tumours: Case series.

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ABSTRACT

Extracapsular dissection is an old technique use for the removal of benign parotid tumours, which is not generally chosen as the first treatment option due to the association of recurrences in the past but is currently considered again accord to the aesthetic requirements of the patients. The general trend in the last decade is to return to minimally invasive procedures for this type of lesions, which are mainly conditioned by the pleomorphic adenoma and its positive margins in its capsule. By this, the purpose of this case series study is to analyze those patients diagnosed with benign parotid tumors and treated by extracapsular dissection in a tertiary hospital in Chile between 2018-2020.

KEY WORDS:

Parotid neoplasms; Postoperative complications; Parotid gland; Parotid Region.

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INTRODUCTION

Parotid neoplasms represent 2-3% of head and neck tumors⁽¹⁾, and 80% of them are associated with salivary glands, although they are mostly benign lesions (80%). The clinical signs include an asymptomatic, long-lasting, and slow increase in volume, and the majority appear with the diagnosis of pleomorphic adenoma (PA) as the most common lesion⁽²⁾. Treatment for these injuries is surgical, and within the widely used techniques, superficial parotidectomy (SP) has prevailed in last decades as the leading management. Indeed, SP (also called suprafacial or lateral parotidectomy) consists in removing the superficial parotid lobe (where the lesion is in most cases) with excellent results in terms of decreased recurrence. Nevertheless, there are postoperative complications, such as aesthetic alterations, temporary or permanent facial paralysis, local seroma, Frey's syndrome, and preauricular pain⁽³⁾.

On the other hand, extracapsular dissection (ECD), a minimally invasive approach for benign parotid lesions, shows excellent results in terms of aesthetics. Developed in 1940-1960, this technique consists in a "meticulous dissection just outside the tumour capsule where an excision plane is generally found"⁽⁴⁾. Furthermore, has been considered for its limited temporal paresthesia since facial nerve dissection is not necessary⁽⁵⁾. This surgical procedure is recommended for primary, superficial lesions with diameters not exceeding 4 cm. As they increase in size, a more extensive resection like superficial parotidectomy (as SP), is necessary. The search for a "gold standard" technique persists for benign parotid tumours⁽⁶⁾, especially those without prior intervention. By this, the main objective of this series case study is to analyze and classify subjects diagnosed with primary benign parotid tumour (PBPT) and treated with ECD by the maxillofacial surgery department at Libertador Bernardo O'Higgins Regional Hospital (LBORH), in Rancagua (Chile), between the years 2018 and 2020.

MATERIAL AND METHODS

This study followed the Declaration of Helsinki on Medical Protocols and Ethics, and the LBORH Regional Ethical Review Board approved the study. The inclusion criteria were the availability of physical and electronic clinical records of patients admitted to the LBORH, diagnosis with superficial PBPT, and removal by ECD between January 2018 and January 2020.

Presurgical planning

The care protocol for patients began with a fine needle aspiration biopsy made by a head and neck surgery specialist and the benign tumour confirmation was analyzed through a specialist in oral and maxillofacial pathology. Then, a referral to one of the four specialists in maxillofacial

surgery in the dental-maxillofacial department is made for the verification of data in clinical records, updating of physical examinations, and request for complementary examinations (primary-secondary hemostasis, biochemical profile, baseline blood glucose and electrocardiogram).

For imaging analysis, a CT of the head-neck region with contrast is the "gold standard" along with parotid ultrasound. Magnetic resonance imaging is also required by the specialist to rule out a compromise of the deep parotid portion. A registered nurse Romina Figueroa then conducts an interview, verifies documents, and delivers oral and written indications before the intervention, which are confirmed by telephone one day before surgery. The nurse is in charge of managing the preparation with the central ward unit.

Anaesthesia and surgical protocol

All procedures are under general anaesthesia with orotracheal intubation. The first option for antibiotic prophylaxis is intravenous cefazolin (1 g) or clindamycin (600 mg) in the case of penicillin allergy. In all procedures participated the surgeon with the most experiences and one of the three maxillofacial specialists from the team as an assistant surgeon. The approach used in all cases was the modified Blair incision, which consists of an incision through preauricular area extends to the mastoid process and posterior border of ramus, or the submandibular region in major lesions⁽⁷⁾. Posteriorly, the dissection through ECD is without the use of an intraoperative nerve-monitoring system. After ensuring hemostasis using a Valsalva manoeuvre, the parotid capsule is closed, followed by plane closure with polyglycolic acid 4-0. For the surface plane, Nylon 5-0 is the first option in a transdermal technique (figures 1-4).

The post-surgical pharmacological treatment consisted of cefazolin (1 g), metamizole (1 g), and ketorolac (30 mg) every 8 hours intravenously for two or three days. For lengthy procedures (2 hours or more), dexamethasone (4 mg) was added every 8 hours for the first 24 hours after the operation. Finally, the discharged of patients are in 72 hours with clinical monitoring at 3, 7, and 14 days, followed by 1, 2, and 6 months, and then every year for discharge or the planning of subsequent monitoring if necessary.

RESULTS

A total of 18 patients (13 women and 5 men) treated between 2018 and 2020 met the inclusion criteria. The age range was 20-72 years. The dimensions of the lesions were within the range of 11 to 50 mm. The primary lesion was PA (n: 9). The side most frequently affected was left in 12 cases. The capsules were kept unscathed in 14 cases. Complications were observed in three patients and included oedema, a sialoceles, and hypoesthesia of the area accompanied by recurrence (Table 1).



Figure 1. The lesion is reached by access through a modified Blair incision.



Figure 4. Closure of the parotid capsule, with subsequent repositioning of flaps by planes.



Figure 2. Visualization of the tumour through the parotid capsule.

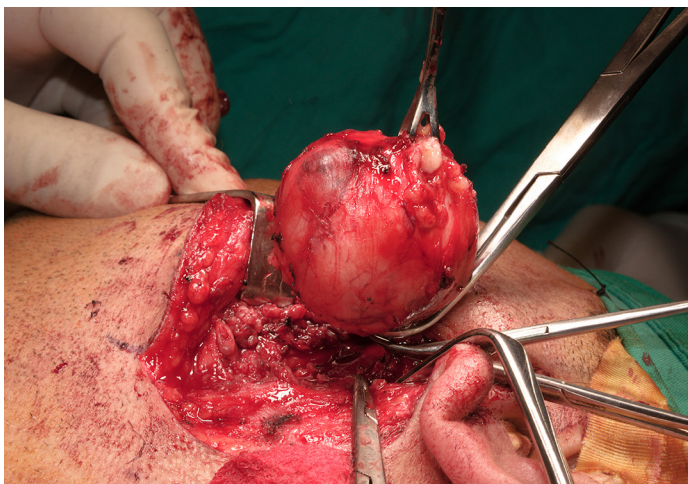


Figure 3. Exeresis of the lesion (area of prehension with instruments with perforation of tumour capsule).

DISCUSSION

In the last decade, ECD begins to settle as a valuable technique for PBPT as an essentially conservative approach⁽⁸⁻¹⁰⁾. As an option for SP, it shows high effectiveness, especially in superficial, mobile and isolated lesions. Indeed, in a retrospective series of 377 patients (Erlangen, Germany)⁽¹¹⁾, only 2% of patients developed permanent facial nerve injury. This approach applies to deep lobes lesions (Osaka, Japan) even without recurrence or permanent nerve lesion in a media of 61 months of control⁽¹²⁾. In specific tumours like solitary cystadenolymphomas, similar data is appreciable in a retrospective report of 327 patients treated with ECD. The occurrence rate of ipsilateral metachronous tumours was 3.1% from the previous study, with a mean follow-up of 108.4 months⁽¹³⁾. Regardless of recurrence, authors report that it is similar to SP, even with trials without reappearance like in Guy's Hospital (London, England), with 156 treated patients and a range size lesions from 0.5 to 7.5 cm⁽¹⁴⁾. The main recommendation for this technique is adequate prior training. The four maxillofacial specialists in the hospital respected this consideration.

Regarding the use of intraoperative continuous facial nerve monitoring (IFNM), immediate and late nerve dysfunction incidences are similar in patients treated with or without this system in the SP technique⁽¹⁵⁾. On the other hand, all the ECD techniques investigations included here used IFNM⁽⁸⁻¹⁴⁾, unlike this series case. Still, the complications were similar in comparison to the retrospective study with the largest population (n: 1359) and 16 years of experience, with reports of 68 temporary postoperative paralyses (5%), Frey's syndrome (2.3%), recurrence (0.8%) and permanent facial palsy (0.3%). In this study, one patient (5%) developed a sialocele, and another (5%) oedema and temporal hypoesthesia. Both patients had total recovery in the first month. However, a third patient developed a recurrence associated with a dermoid cyst in the fourth month, highlighting that the capsule unscathed at the time of its removal. Fortunately, was programmed a new intervention with excellent results until the last follow-up. On the other hand, due to the lack of subject and a limited follow-up period (30.8 months), continuously control is necessary to establish a successful treatment considering a minimum follow-up of 10 years for patients.

CONCLUSIONS

In trained surgeons, ECD is a favourable indication in superficial and solitary deep PBPT for size lesions up to 50 mm accord to our results and publications available, with minimal complications of recurrence and hypoesthesia, even without IFNM. Additionally, a long-term follow-up control is necessary for patients treated.

INTEREST CONFLICT

The authors have no conflict of interest.

Table 1: Resume of patients treated between 2018-2020

Genre	Age	Diameter	Histopathological diagnostic	Side	Capsule alterations	Complications	Control (months)
M	65	Not specified	Cystadenoma	Left	-	-	37
F	20	45 mm	Pleomorphic adenoma	Left	Perforated	-	37
M	41	50 mm	Pleomorphic adenoma	Left	Perforated	Sialoceles	36
F	35	35 mm	Pleomorphic adenoma	Right	Perforated	-	36
F	58	40 mm	Pleomorphic adenoma	Left	-	-	35
M	63	30 mm	Cystic hygroma	Left	-	-	34
F	68	40 mm	Cystadenoma	Left	-	-	33
F	47	25 mm	Basal cell adenoma	Left	-	-	33
F	37	25 mm	Pleomorphic adenoma	Left	-	-	33
M	66	40 mm	Whartin's Tumor	Right	-	-	32
F	40	11 mm	Pleomorphic adenoma	Left	-	-	32
F	53	30 mm	Whartin's Tumor	Left	-	-	30
F	48	30 mm	Pleomorphic adenoma	Left	Perforated	-	28
M	69	Not specified	Pleomorphic adenoma	Right	-	Edema, hypoesthesia	27
F	45	Not specified	Dermoid cyst	Right	-	-	27
F	48	28 mm	Pleomorphic adenoma	Left	-	-	26
F	47	30 mm	Ancient schwannoma	Left	-	-	20
F	72	30 mm	Dermoid cyst	Right	-	Recurrence (the fourth month)	19

Abbreviations: M (male), F (female), mm (millimeters).

Foot-notes: Not specified (Not describes in the histopathological inform).

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