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Original article

Profile of parotid gland tumours: Experience of 93 cases over a period of 16 years

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ABSTRACT

Objective: The pathology of the salivary glands focuses on that of the parotid gland. The purpose of this study is to clarify and explain the epidemiological features of parotid tumors in a Senegalese context, to highlight the importance of clinical examination when access to complementary investigations is limited, to discuss respective indications and finally to describe certain aspects of treatment in our context.
Materials and methods: This retrospective study of 114 cases of parotidectomy spans 16 years, from 1992 to 2007. It was performed in the ENT department of University Hospital of Fann, Senegal. All patients operated on for chronic mass of the parotid region for whom histological results were available when initially included. Benign swellings were subsequently excluded. The study parameters were epidemiological, clinical, paraclinical and surgical.
Results: The 114 parotidectomies showed a predominance of benign tumours: 63 procedures (55.26%) essentially concerned pleomorphic adenoma; 30 cases (26.31%) concerned malignant tumours, mainly parotid adenocarcinoma. There were 21 cases of benign swelling (18.4%). The study focused on the series of 93 cases of benign and malignant tumours of the parotid gland. Both sexes were affected similarly. All age groups were concerned, from 5 to 89 years. A total of 97% of patients underwent surgery: conservative total parotidectomy in 75.51% of cases.
Conclusion: Although there are features specific to the local context, the epidemiological profile of parotid tumours is well-known. Indications for complementary investigations are discussed, as availability in Senegal is restricted, highlighting the important role of clinical examination in the management of parotid tumours.

1. Introduction

Salivary gland tumours are rare, representing 3–5% of head and neck tumours [1,2]. Pleomorphic adenoma or mixed tumour is the most common benign form (85%). Definitive diagnosis of parotid tumour requires parotidectomy. Preoperative diagnosis is founded on fine-needle aspiration cytology and medical imaging. MRI is the radiologic examination of choice in case of suspected malignancy. The present report is a profile analysis of a series of 114 parotid gland tumours collated between 1992 and 2007 in the ENT and head and neck surgery department of Dakar university hospital, Senegal.

2. Material and methods

A retrospective study, performed in the ENT and head and neck surgery department of the Aristide Le Dantec university hospital of Dakar (Senegal) between January 1st, 1992 and December 31st, 2007 (i.e., 16 years), recruited 216 parotidectomy patients. One hundred and fourteen files included histologic analysis: 63 benign tumours, 30 malignant tumours and 21 benign swellings. Benign swelling comprised acute or chronic inflammatory glandular hypertrophy: cyst, parotiditis, intraparotid adenitis, tuberculosis, lithiasis and benign lympho-epithelial lesions; these cases were excluded from analysis. The 93 cases of parotid tumour were included in the study.

The study thus included all patients undergoing parotid gland surgery for histologically proven parotid tumour. Epidemiological (age and gender), clinical (time to and reason for consultation), paraclinical (ultrasonography, CT, histology) and therapeutic data were analyzed.

3. Results

3.1. Age and gender

Mean age was 40.9 years (range, 5–89 yrs). There was a clear female predominance: 61 cases (65.6%; F/M sex-ratio, 1.9).

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Table 1
Tumor distribution by location.

Location	Number (percentage)
Sublobular	22 (49%)
Retroparotid	13 (29%)
Parotid- submaxillary	4 (9%)
Cheek	1 (2.22%)
Left side	26 (45.62%)
Right side	31 (54.38%)
Intra-oral expression	4 (9%)

3.2. Clinical data

Mean time to consultation was 4.3 years (1 month to 20 years). Parotid swelling at admission was systematic, and the principal presenting symptom. Nineteen patients (20.4%) complained of intense parotid pain; these included 12 with parotid cancer and 7 with benign tumour.

Seven of the 40 assessable patients (17.5%) showed peripheral facial palsy. On physical examination, swelling was found to be lobular in 22 cases (49%). Table 1 shows the distribution of parotid tumour locations. Swellings ranged from 1 to 15 cm along the long axis, mainly between 2 and 6 cm (in 17 of the 30 cases where it was recorded: 57%). Ten malignant tumours were measured, of which 8 were between 6 and 10 cm. The swelling was pain-free in 74 patients (79.5% of tumours). Consistence varied: 19 (61.29%) were firm, and 9 (29.3%) hard. Fourteen were mobile (70% of the 20 cases in which consistence was recorded). Covering skin was ulcerated in 7 cases (7.5%). Eleven patients (12%) had lymphadenopathies.

3.3. Paraclinical data

CT was performed in 3 cases (3.22%), for strong suspicion of malignancy and because the patients were able to pay for the examination. Ultrasonography was requested in 20 patients (21.5%). None of the series underwent MRI.

3.4. Surgery

Ninety of the 93 parotid tumour patients were operated on (97%); the 3 in whom surgery was contraindicated underwent biopsy (3.2%). There were 37 conservative total parotidectomies (75.51%), 6 non-conservative total parotidectomies (12.24%), and 6 superficial or exofacial parotidectomies (12.24%). The superficial lobe was the most frequently involved (61.2%). Parotidectomy was extended in 3 cases (3.3%) to the masseter and pterygoid muscles and the mandible. Lymph-node resection, performed in 6 cases (6.4%), was complete radical in 1 case, modified radical in 1, functional in 2 and triangular selective in 2.

3.5. Histology

The present series of 93 parotid tumour patients showed a predominance of benign forms, with 63 cases (67.74%), versus 30 malignancies (32.25%). There were, moreover, 21 parotid swellings among the patients undergoing parotidectomy during the study period.

Female subjects were more affected than males: 61 (65.6%), versus 32 (34.40%). The rates of benign and malignant tumour according to gender were similar: 68.85% benign tumours in females (42/61) and 65.62% in males (21/32); 31.14% malignant tumours in females (19/61) and 34.37% in males (11/32).

Mean age at onset of benign tumour was 41.5 years (range, 17–70 years) in males, and 37.7 years (6–67 years) in females, and for malignant tumour 41.45 years (5–69 years) and 47 years (6–89 years) respectively.

Pleomorphic adenoma was the most frequent form of benign tumour at 65.07%, followed by Whartin's tumour (17.46%). The rates for hemangioma and lipoma were respectively 3.17% and 6.34%. The most frequent forms of malignant tumour were adenocarcinoma (26.66%) and adenoid cystic carcinoma (26.66%) (Table 2).

4. Discussion

The parotid is the most important gland in the salivary system, and also the one most frequently involved by every type of tumour, regardless of age or sex [2–4]. The present study describes the epidemiological characteristics of 93 parotid tumours (epithelial, mesenchymatous and lymphoid), analyzing sex-ratios, frequency and histology. Results showed later onset in malignant as compared to benign tumour, as consistently found in the literature [2,3,5,6].

Benign parotid tumour affected both sexes comparably: 68.85% of parotid tumours in females and 65.05% in males. These findings

Table 2
Tumour distribution by histologic type, gender and age.

	Gender		Total *n*	M/F	Mean age (years)	
	Male *n* (%)	Female *n* (%)			Male	Female
Type of tumour						
Benign	21 (65.62%)	42 (68.85%)	63	0.5	41.52	37.71
Malignant	11 (34.37%)	19 (31.84%)	30	0.57	41.45	47
Histologic type						
Pleomorphic adenoma	15 (71.42%)	26 (61.90%)	41		41	41.69
Whartin's tumour	4 (19.04%)	3 (7.14%)	7		46	35.6
Oxyphil cell adenoma (oncocytoma)		1 (2.38%)	1			No data
Other adenomas	1 (4.76%)	4 (9.52%)	5		48	43.25
Hemangioma	0	2 (4.76%)	2			18
Hemangiopericytoma	0	1 (2.38%)	1			No data
Neuroma		1 (2.38%)	1			No data
Lymphangioma	1 (4.76%)	0	1		No data	
Lipoma		4 (9.52%)	4			31.75
Adenocarcinoma	5 (45.45%)	3 (15.78%)	8		37.6	54.6
Cylindroma (Adenoid cystic carcinoma)	1 (9.09%)	7 (36.84%)	8		44	39.71
Mucoepidermoid carcinoma	1 (9.09%)	4 (21.05%)	5		51	58.75
Squamous cell carcinoma	3 (27.27%)	2 (10.52%)	5		58	80.5
Anaplastic (undifferentiated) carcinoma	1 (9.09%)	0	1		51	
Oncocytic carcinoma	0	1 (5.26%)	1			45
Malignant melanoma	0	1 (5.26%)	1			64
Lymphoma	0	1 (5.26%)	1			1 month