

Is salivary gland pathology in western of Libya the same as other parts of the World?

A Patologia das glândulas salivares na Líbia ocidental é a mesma que em outras partes do mundo?

ABSTRACT

A wide variety of entities may cause diseases of the salivary glands. A general classification divides the disorders into inflammatory and non-inflammatory diseases. This group of disorders can afflict the major or minor salivary glands but are generally much more common in the major glands. In most cases, clinical assessment allows distinction between these entities and guides further investigation and management. However, knowing the relative incidence of neoplastic vs. non-neoplastic salivary gland diseases has important diagnostic, therapeutic, and prognostic implications. In addition, the use of different diagnostic modalities such as an ultrasound, FNA, MRI and CT scan play a vital role in preoperative diagnosis. We here present our retrospective study to compare the incidence of Neoplastic versus non-Neoplastic salivary gland diseases at largest oral and maxillofacial center in western Libya and to compare accuracy and validity of different diagnostic tools in diagnosis of salivary gland disease.

Keywords: Salivary glands, disease, neoplastic, non-neoplastic, accuracy, diagnostic, and pathology

RESUMO

Uma grande variedade de condições pode causar doenças das glândulas salivares. Uma classificação geral divide os distúrbios em doenças inflamatórias e não inflamatórias. Esse grupo de distúrbios pode afetar as glândulas salivares maiores ou menores, embora geralmente sejam mais comuns nas glândulas maiores. Na maioria dos casos, a avaliação clínica permite a distinção entre essas condições e orienta pesquisas e gerenciamento adicionais. Contudo, conhecer a prevalência relativa das doenças das glândulas salivares neoplásicas e doenças não neoplásicas tem importantes implicações diagnósticas, terapêuticas e prognósticas. Além disso, o uso de diferentes modalidades de diagnóstico, como um ultrassom, aspiração com agulha fina, ressonância magnética e tomografia computadorizada axial, assume um papel vital no diagnóstico pré-operatório. Aqui apresenta-se um estudo retrospectivo para comparar a prevalência de doenças das glândulas salivares neoplásicas e não neoplásicas no maior centro de cirurgia bucomaxilofacial da Líbia e comparar a precisão e validade de diferentes ferramentas diagnósticas nas doenças das glândulas salivares.

Palavras-chave: Glândulas salivares; Doença; Neoplásico; Não neoplásico; Precisão; Diagnóstico; Patologia.

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INTRODUCTION

Salivary glands diseases varies in their presentations according to their etiology. In these, are included a wide range of disorders such as inflammatory, which can be bacterial or viral in acute and chronic phase, neoplastic represented by benign or malignant tumors, or autoimmune disorders. Their management is based on identifying the cause.

Because salivary gland enlargement poses a diagnostic challenge to the attending surgeon, as they could be involved in those wide spectrum of diseases, there are many different diagnostics tools such as ultrasound, CT scan, MRI, FNA, Biopsy. They have been employed in diagnosis of glands pathology. However, each modality has its own limitations.

PATIENTS AND METHODS

The medical records and case notes of all patients with histologically confirmed salivary gland pathology were reviewed retrospectively from June 2007 to June 2016. This review found 20 patients with non-Neoplastic and 27 patients with Neoplastic salivary glands. We also compared the different pre-operative diagnostic reports of different diagnostics modalities with the final report of histopathology. The collection of data included gender, age, location, and histopathology of the diseases. Other recorded data included diagnostic procedures, operative reports, complications, additional treatment, and follow-up.

RESULTS

We studied 27 females and 20 males with a mean age of 33 years. Patients with non-Neoplastic disease and Neoplastic pathology presented with a mean age of 27 and 38 years, respectively. The frequency of non-Neoplastic disease was 42.5% (n = 20) and 57.4% for Neoplastic lesions (n = 27) (Figure 1). Off all salivary gland pathology, 46.8% (n 22) were localized in the parotid gland, the submandibular gland (23.4%; n = 11), sublingual gland (4.25; n=2), the minor salivary glands (25.5% n = 12) and the mandible (2.12%; n= 1) (Figure 2).

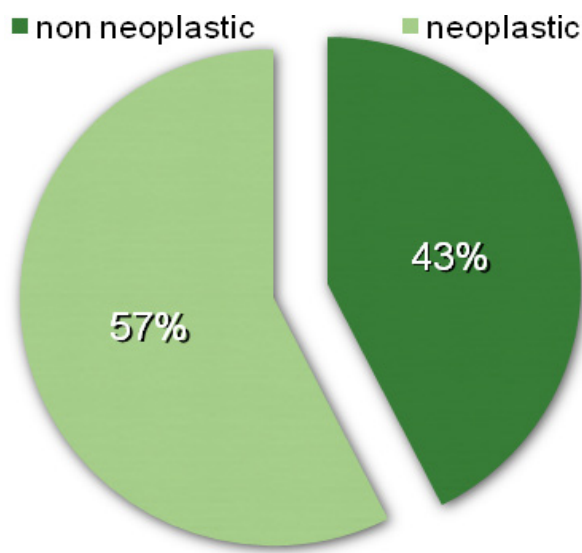


Figure 1 - Neoplastic versus non-neoplastic lesion.

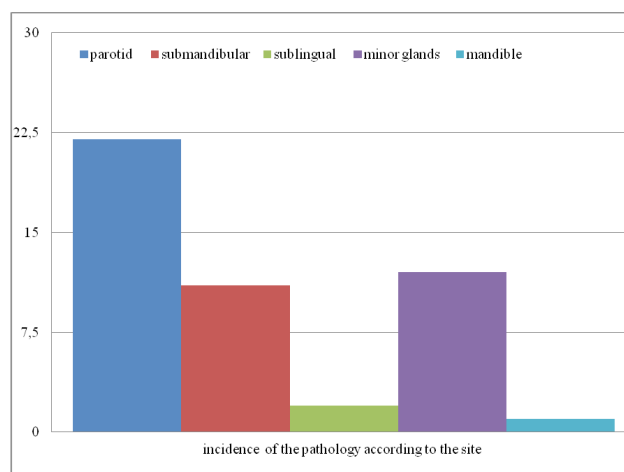


Figure 2 - Anatomical distribution of salivary gland.

The benign tumors represent 62.9% (n=17) (Figure 3) of all Neoplastic lesions. Pleomorphic adenoma represent 76.4% (n= 13), warthin's tumor 17.64% (n= 3) and lymphoepithelial lesion was 5.88% (n=1) as shown in Table 1. On the other hand, the malignant tumors account for 37.03% (Figure 3) (n= 10); 80% (n=8) were in minor salivary gland, 20% (n=1) in parotid gland and 20% (n=1) in the mandible. Among malignant tumors, mucoepidermoid carcinoma was the most frequent (50% n = 5), followed by adenocarcinoma (30% n = 3), fibro sarcoma (10%; n =1) and papillary adenocarcinoma (10%; n=1) (Table 2).

Table 1 - Distribution of benign tumor according to histological type and anatomical site.

Histological type	Parotid (N - %)	Submandibular (n - %)	Minor (n - %)	Total (n - %)
Pleomorphic adenoma	11 - 73.3%	1 - 100%	1 - 100%	13 - 76%
Warthin's tumor	3 - 20%	-	-	3 - 17.64%
Lymphoepithelial lesion	1 - 6.6%	-	-	1 - 5.88%
Total	15 - 100%	1 - 100%	1 - 100%	17 - 100%

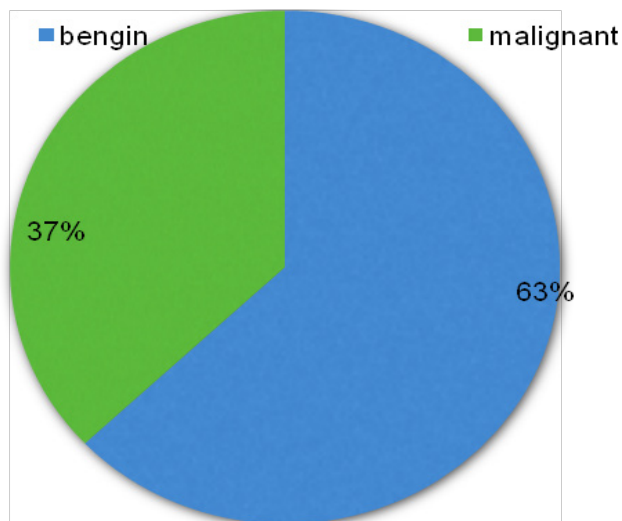


Figure 3 - Incidence of benign versus malignant distributions.

Table 2 - Distribution of benign tumor according to histological type and anatomical site.

Histological type	Parotid (N - %)	Submandibular (n - %)	Minor (n - %)	Total (n - %)
Pleomorphic adenoma	11 - 73.3%	1 - 100%	1 - 100%	13 - 76%
Warthin's tumor	3 - 20%	-	-	3 - 17.64%
Lymphoepithelial lesion	1 - 6.6%	-	-	1 - 5.88%
Total	15 - 100%	1 - 100%	1 - 100%	17 - 100%

Ultrasonography was used pre operatively alone or combined with other investigation tools in 17 case of major salivary gland disease whereas MRI was used only in five cases, CT scan with contrast was used in 3 cases and fine needle aspiration was used in 3 cases. In 15 cases (88%), the pre-operative ultrasound report was consistent with the final histopathology report. CT scan was accurate only in 2 cases out of 3. Both MRI and final needle biopsy preoperative diagnosis were consistent with the final histopathology in all cases.

Analysis of non-neoplastic lesions showed that salivary gland stone is the most common form, which represents 35% (n = 7) of all non-neoplastic lesions that were mostly in submandibular glands followed by chronic nonspecific inflammation (n =5),

25%. Whereas Mucocele presented about 20% (n = 4). Sjogren syndrome formed 10% (n =2) and ranula and epidermal cyst accounted for 5% each (Table 3).

Table 3 - Distributions of non-neoplastic diseases.

Histological type	Parotid (N - %)	Submandibular (n - %)	Sublingual (n - %)	Minor / lower lip (n - %)	Total (n - %)
Sjogren syndrome	2-50%				2-10%
Epidermal cyst	1-25%				1-5%
Obstructive /stone		7 - 63.63%			7-35%
Chronic non specific	1-25%	4 - 36.36%			5-25%
Ranula			1-100%		1-5%
Mucocele				4-100%	4-20%
Total	4-100%	11 - 100	1-100%	4-100%	20-100

DISCUSSION

The spectrum of presentation of salivary gland disorders is wide ranging and includes: Acute and chronic infection, Systemic inflammatory disorders, Benign and malignant in most cases, a detailed history and clinical assessment allows distinction between these entities and guides further investigation and management. However, knowing the overall incidence of neoplastic versus non-Neoplastic lesions has a much importance as the use of diagnostic modalities in pre-operative diagnosis of such lesions.

Acute onset of unilateral pain, swelling and fever suggests acute supportive sialadenitis. Intermittent unilateral gland swelling and pain is most commonly associated with chronic sialadenitis and salivary duct calculi. Bilateral gland involvement is more common with viral infections or systemic disease. The neoplasm usually present as a painless slow-growing unilateral salivary gland mass.

Sialadenosis, which includes Bulimia Anorexia, Diabetes, alcoholism and drug, induced (6,7,8,9,10). The overall incidence of salivary gland neoplasms is relatively rare as they make up 6% of head and neck tumours. In united sates of America the overall incidence is 2-8 per100, 000 persons.

The Obstructive sialadenitis (from stones or strictures) present for approximately one-half of benign salivary gland disorders. (1, 2). Infections and inflammation of the salivary glands have a wide range of presentations. An organized approach to the evaluation and use of proper investigations

improves the likelihood of correct diagnosis and appropriate treatment of salivary gland disease.

Neoplasm of salivary gland poses an issue to most of the surgeons due to nature of the lesion and complex anatomy of the glands. Therefore, early diagnosis of such lesion play important role in the outcome of the treatment. With this regard, knowing incidence of neoplastic disease of salivary gland as compared to non-neoplastic lesions as well as using the proper investigation modalities plays a crucial role in making the correct diagnosis and treatment planning. In our study, the frequency of neoplastic lesion (57.4 %) was higher than non-neoplastic lesions (46.8%). This is consistent with another study was done by Gallia et al (3).

Ying liu et al (4, 5) conducted a metal analysis evaluating accuracy of diagnosis of salivary gland tumors with the use of ultrasonography, computed tomography, and magnetic resonance imaging and they concluded that US, CT, and MRI are reliable methods in diagnosing salivary gland tumors clinically. There is no statistical difference between CT and MRI; however, MRI is more expensive than CT (10). MRI is also recommended for its highest sensitivity and specificity for differential diagnosis between benign and malignant tumours. This is also consistent with our date in this study where accuracy ranged between 98 to 100 % for all employed diagnostic modalities.

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