Incidence and Prevalence of Periodontitis among 90 Patients Diagnosed with Salivery Gland Tumor in Duhok City

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Abstract

Background and Objectives: Globally, there was (20-50) % periodontal disease's prevalence. This disease is one of the tooth loss causes that might be compromising the life quality, self confidence, esthetics, and mastication. The major problem that salivary gland tumors do is decreasing the amount of saliva in the oral cavity that led to change in oral flora and dehydration of the tissue, especially periodontal tissue. This study was held to found the direct relationship between saliva amount and periodontitis. **Methods:** This epidemiological study was held out by a collection of data from 90 patients that seeking out clinics in Duhok and Zakho and seeking Azadi general hospital complaining from periodontal problems. **Results:** 90 patients involved in this study 47(%52.22) of theme with history of parotid gland tumor, 24(%26.66) with submandibular salivary gland tumor, and 19(%21.11 with sublingual salivary gland tumor.68 (75.55%) are benign category while 22(24.44%) malignant patients having severe xerostomia are 28(31.11%) Moderate types of xerostomia are 14(%15.55) patients, while the mild type is 22(24.44%). And those with no xerostomia are 26(28.88%) patients.

Keywords: *periodontitis, xerostomia, salivary gland tumors, gum disease, parotid neoplasia.*

Introduction

Periodontitis is gum disease—a type of chronic inflammatory condition that is triggered by bacterial, viral, and autoimmune infections. Periodontitis causes destruction of the tooth-supporting structures; gums might be pulled away from the teeth, a loss of bones might happen; also, the teeth could be falling out or loosen. Majorly, periodontal disease occurs in adults. In dental health, the two major threats are tooth decay and periodontal disease[1]. Xerostomia can be specified as one of the subjective complaints related to the dry mouth caused by a reduction in the production of saliva[2]. The acuteness of dry mouth or xerostomia symptoms is ranging from mild oral discomforts to considerable oral diseases compromising the patient's health, life quality, and the intake of dietary. Dry mouth causes might involve autoimmune diseases, negative medication's effects, neck, and head radiotherapies, toxicity from chemotherapies, or other conditions (hormonal changes, infections, and uncontrolled diabetes). Malignant type salivary gland tumors: adenoid cystic carcinoma, polymorphous adenocarcinoma, basal cell adenocarcinoma, and mucoepidermoid carcinoma[4]. Infected, swollen, or obstructed salivary gland due to tumors of both types will cause a severe decrease in saliva productions [5]. Saliva is very important in oral lubrication, whereas producing suitable amounts related to stimulated and un-stimulated normal salivary secretions was vital to prevent esophageal and pharyngeal conditions, dental caries, and periodontal or gingival diseases, also tooth erosion. Hypo salivation, from the salivary gland hypofunction, might lead to a subjective sensation of xerostomia or dry mouth, which typically happens in the case when there is a decrease by half in the un-stimulated salivary flow rate compared to the normal in individuals. Yet, the rate could still be in the normal range, indicating that the saliva quality might

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be vital to determine the dryness' perceived degree. Xerostomia might be due not to a total lack of oral fluid, yet to localized areas related to mucosal dryness[6]. Commonly, xerostomia happens in the ones experiencing Sjögren disease or people subjected to radiation therapies for neck and head cancers[7]. Salivary gland tumors are neoplasia of the salivary glands, which are of two major categories, either benign or malignant (cancerous), benign tumors; the most common types are monomorphic adenoma, pleomorphic adenoma, canalacular adenoma, myoepithelioma, ductal papilloma, and basal cell adenoma[8]. The decreased salivary flow might result in problems in speaking, chewing, tasting, and swallowing; it might also be increasing the chances to develop dental decay, teeth demineralization, oral infections, and/or teeth sensitivity[9]. In xerostomia treatment, the major aims are to identify the possible cause(s), to prevent complications (periodontal infections and dental caries), also to relieve discomforts[10]. A patient with xerostomia is the first candidate in due course to experience gingival diseases. With no treatments, plaque and bacteria are allowed by xerostomia to stay on the teeth, which is going to results in gingivitis, after that periodontal diseases. As soon as the gingival disease is developed via the patients, they are going to be experiencing symptoms such as red or swollen gums might bleed, persistent bad breaths, sensitive or loose tooth, gum recession, and pain during e chewing [11].

Materials and Methods

Ninety patients who are suffering from gingival problems are involved in this retrospective cross-sectional study. Those patients are seeking out private clinics or Azadi Hospital in Duhok and Zakho city for periodontal treatment, and they are suffering from xerostomia and having a history of salivary tumors of the parotid, submandibular or sublingual salivary glands that we confirm by collecting their pathological reports from Duhok Central Laboratory in 10-year intervals. First, we collect our data from dental clinics; we look for those patients who are suffering from periodontitis, and then we looked for their history and probable causative factors for this periodontitis; then selecting those patients that suffer from xerostomia and then looked further for the causative factor for this xerostomia. And we select those patients that suffered from xerostomia due to the previous tumor in their oral region; then, matching their name in the central lab in Duhok city with those who had salivary gland tumors.

Inclusion criteria: those patients with periodontitis and history of salivary gland tumors.

Exclusion criteria: patients with periodontitis for another causative factor's examples; due to bad oral hygiene, due to bacterial, viral, autoimmune, or hormonal conditions also we exclude all patient suffering from xerostomia but didn't have the periodontal disease yet.

Results

Ninety patients involved in this study 47(%52.22) of theme with history of parotid gland tumor, 24(%26.66) with submandibular salivary gland tumor, and 19(%21.11 with sublingual salivary gland tumor. 68 (75.55%) are benign category while 22(24.44%) were the malignant type. Regarding the age group, 49 (54.44%) were under 50 years old while 41(45.55) were above 50 years old. Regarding xerostomia, patients having severe xerostomia are 28(31.11%) The moderate type of xerostomia is 14(%15.55) patients, while the mild type was 22(24.44%). And those with no xerostomia are 26(28.88%) patients. All patients included in this study were having periodontitis of different degrees. 53(58.88%) having severe periodontitis with partial bone loss, bleeding on probing attachment loss,18(20%) suffering from moderate type periodontitis with bone loss, bleeding on probing but mild attachment loss, while 19(21.11%) were having mild periodontitis with no attachment loss and mild bleeding on probing.

Table 1: incidence of salivary gland tumor by type

Tumor type	No. Of patients	Persentage%
Parotid S.G	47	52.22%
SubmandibularS.G	24	26.66%
Sublingual S.G	19	21.11%
Total	90	%100

Table 2: Distribution of study subjects based on age.

Age group (years)	NO. of patients	%
0—10	0	0
11—20	2	2.22
21—30	6	6.66
31—40	10	11.11
41—50	31	34.44
51—60	23	25.55
61—70	18	20

Table 3: Distribution of study subject based on the severity of xerostomia

Type of Xerostomia	No. of Patients	Percentage
Mild	22	(24.44%).
Moderate	14	(%15.55)
Severe	28	(31.11%)
No xerostomia	26	(28.88%)

Table 4: distribution of study subject based on the severity of periodontitis

Degree of periodontitis	No. of patients	percentage
Mild	19	21.11%
Moderate	18	20%
Severe	53	58.88%
Total	90	100%

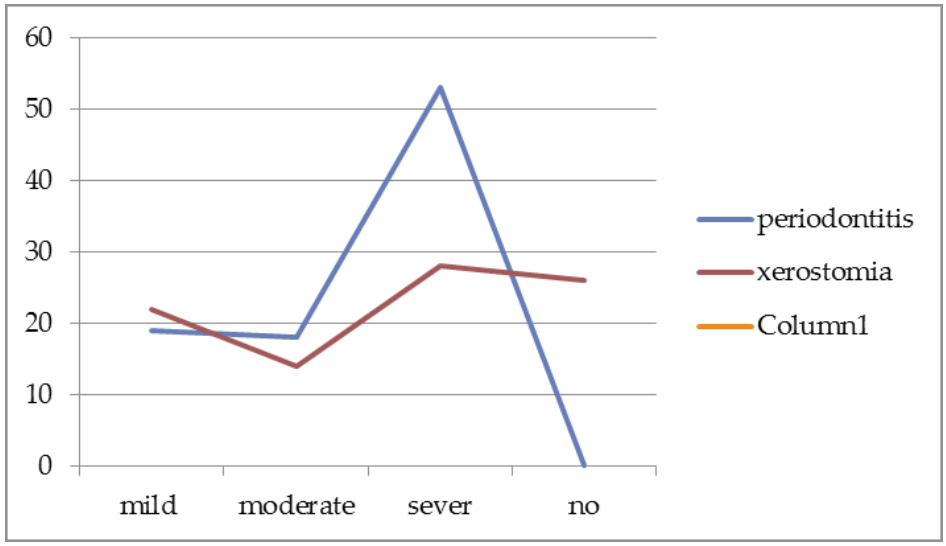

Fig 1: Relation graph between periodontitis and xerostomia

Fig2: Periodontitis due to dry mouth (xerostomia).

Discussion

Half of the people with a minimum age of 30 years are suffering from periodontal disease. This disease might lead to the loss of teeth, a need for dentures, along with series of more health problems. Due to the potential severity of the disease, there is a high importance in treating it adequately, in spite of how frequent the disease was indicated to be. The disease might be affecting people of all ages and all genders[3]. Periodontitis causes: The mouth bacteria are multiplying and forming a substance referred to as dental plaque. The mineral deposit is referred to as tartar, which is going to be encouraging more growth of bacteria towards the tooth's root[2]. Gum's inflammation results in due to the immune response of the body to such growth of bacteria. The gum's attachment to the tooth root was disrupted with time; also, a periodontal pocket (gap) might be formed between the root and the gum. In addition, the harmful anaerobic bacteria are colonized in the packet and after that multiplied, causing a release of toxins damaging the teeth, gums, and supporting bone structure. And the dryness of the mouth will aggravate the situation and make a change in oral flora balance and lead to gingivitis and periodontitis. Salivary gland tumors are neoplasia affecting the three major salivary glands, which are responsible for the secretion of more than 80% of saliva in the oral cavity. So salivary gland tumor will cause an obstruction in the ducts and decrease amount of saliva secretion during the course of the disease, and after excision of the affected gland, especially the parotid gland, which is responsible for the secretion of 750 -1000ml of saliva per day there will be a huge deficiency in saliva and dry mouth so there will be xerostomia and as we mentioned xerostomia would lead to several mouth problems.

Conflict of Interest: we declare that there is conflict of interest

Ethical Approval: the research approved by scientific and ethical committee at our department

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