The Saudi Dental Journal (2016) **28**, 96–101

King Saud University

The Saudi Dental Journal

www.ksu.edu.sa
www.sciencedirect.com

ORIGINAL ARTICLE

The range of diagnoses for oral soft-tissue biopsies of geriatric patients in a Saudi Arabian teaching hospital

Ahmed Qannam *, **Ibrahim O. Bello**

Department of Oral Medicine and Diagnostic Sciences, King Saud University College of Dentistry, Saudi Arabia

Received 9 February 2015; revised 16 December 2015; accepted 27 January 2016
Available online 13 April 2016

KEYWORDS

Geriatric;
Oral soft tissue;
Biopsies;
Saudi Arabia

Abstract *Introduction:* The increased life expectancy being observed worldwide necessitates careful planning for future geriatric oral health care needs, which should be based on epidemiologic surveys to identify these needs. We aimed to survey the range of lesions diagnosed in soft-tissue biopsies of patients over age 60 over a 30-year period in a Saudi Arabian teaching hospital.

Methods: The histopathology records of geriatric patients with complete demographic data who were diagnosed between 1984 and 2013 at the College of Dentistry, King Saud University, were reviewed. The lesions were then classified into eight broad categories. Associations between variables were evaluated using Pearson's Chi square test.

Results: There were 231 soft-tissue biopsies obtained from geriatric patients whose complete records were available. The male to female ratio was 1.1:1, and the mean age was 66.7 years. Most lesions (69%) occurred in patents aged 60–69 years. Although reactive lesions were generally the most common, the most common lesions were squamous cell carcinoma and fibroma. Lesions were most commonly located on the buccal mucosa and the alveolar ridge/gingivae.

Conclusions: The range of lesions seen in Saudi geriatric patients were similar to those reported for other parts of the world, although the lesions were more similar to those reported from developing countries. The very high rate of oral cancer, however, is expected to take the majority of the resources allocated to geriatric oral health care, except if a strong, population-based prevention program is initiated immediately.

* Corresponding author at: Department of Oral Medicine and Diagnostic Sciences, College of Dentistry, King Saud University, P.O. Box 60169, Riyadh 11545, Saudi Arabia. Tel.: +966 11 4677422; fax: +966 11 4679018.
E-mail address: dr.qannam@hotmail.com (A. Qannam).

Peer review under responsibility of King Saud University.

Production and hosting by Elsevier

http://dx.doi.org/10.1016/j.sdentj.2016.01.001

1. Introduction

Life expectancy increased steadily worldwide, from 46.9 years in the 1950s to 68.7 years by 2010 (United Nations, 2012). The increase in life expectancy for Saudi Arabia was even greater for the same period (41.9 years in the 1950s to 74.3 years by 2010) (United Nations, 2012). Moreover, the percentage of the Saudi population aged 60 years and older is projected to reach 25.3% by 2050, compared to just 5.6% in 1950 (United Nations, 2012). Clearly the oral health care needs of elderly Saudi Arabians will increase in the coming years, and epidemiological surveys to identify these needs are needed. Surveys based on only clinical data need to be supplemented by those based on biopsy records, as both are necessary to adequately define oral health care needs. Additionally, records based on histological diagnosis are generally considered more accurate than those based on clinical diagnosis.

Geriatric mucosa is marked by decreased epithelial thickness, decreased synthesis of collagen by connective tissue cells, and increased vascular sclerosis, all of which are likely to result in decreased tissue regeneration, loss of elasticity, and decreased disease resistance (Breustedt, 1983; Vigild, 1987). A number of epidemiologic studies (often asymmetrical in design and presentation of results) on the oral mucosal disease of the elderly (van Wyk et al., 1977; Fleishman et al., 1985; Ekelund, 1988; Hoad-Reddick, 1989; Kaplan and Moskona, 1990; Corbet et al., 1994; Nevalainen et al., 1997; Reichart, 2000; Lin et al., 2001; Garcia-Pola Vallejo et al., 2002; Jainkittivong et al., 2002; Espinoza et al., 2003) have been published in the last 3 decades. Most of these studies were based on clinical examination of institutionalized or home-based elderly people, or were done in the context of denture-related oral pathologies. There have also been a number of studies that analyzed the prevalence of oral lesions in the elderly based on oral tissue biopsies submitted for pathology (Kononen et al., 1987; Skinner and Weir, 1987; Scott and Cheah, 1989; Correa et al., 2006; Franklin and Jones, 2006; Muzyka et al., 2009; Carvalho Mde et al., 2011). Owing to the paucity of data from either clinical examinations or oral biopsies from Saudi Arabia, this study was aimed at surveying soft-tissue biopsies in patients over age 60 who were diagnosed in the biopsy service of a teaching hospital over a 30 year period, comparing these data with similar studies done in other parts of the world. Soft-tissue pathologies were chosen because these are usually the most common and the most clinically significant category of oral lesions in the elderly (Correa et al., 2006; Muzyka et al., 2009).

2. Materials and methods

The biopsies included in this study were those diagnosed between 1984 and 2013 in the College of Dentistry, King Saud University; the premier dental school in Saudi Arabia. Ethical approval for the study was obtained from the Institutional Review Board of the institution (College of Dentistry Research Center, FR 0181). All cases with incomplete data on age, sex, and location of the lesion were excluded ($n = 54$ cases). We included 231 (of 285) soft-tissue biopsies of patients aged 60 years and above with complete demographic data, in addition to their histological slides from the archives, in the analysis. The pathology reports of all cases, including the accompanying hematoxylin-eosin-stained slides, those with special stains and/or immunohistochemical stains were re-evaluated by the two authors (who are practicing oral pathologists) to ensure that the previous diagnoses were correct. When found to be inaccurate, particularly based on current knowledge, new diagnoses were assigned. Descriptive and qualitative analyses of the data were then made using the IBM SPSS version 20 software. Data are presented as frequencies and percentages. Associations between important variables (mainly age and sex in relation to lesions) were tested by Pearson's Chi-square test or Fisher's exact test where necessary. A P value <0.05 was considered statistically significant.

3. Results

The study comprised soft-tissue biopsy samples from 231 patients, including 122 men (52.8%) and 109 women (47.2%). There was no significant difference between the type of lesions in relation to the sex of the patients ($P = 0.11$).The age of the patients ranged from 60 to 100 years (mean age: 66.7 years). The majority of the patients were 60–69 years of age (69.3%) (Table 1). There was a significant difference in the type of lesions diagnosed ($P = 0.001$) between the two age categories (60–74 years versus $\geqslant 75$ years). Patients aged 60–74 years had a higher rate of reactive lesions, while those aged over 75 had a higher rate of malignant tumors (Table 2).

Most lesions occurred in the buccal mucosa (25.9%), except if the gingiva and the alveolar ridge are viewed as a unit, in which case most lesions (34.2%) occurred in the latter (Table 3). The majority of the lesions were classified as reactive lesions, with irritation fibroma constituting 46% (44/95) of this group of lesions (Table 4). Malignant neoplasms were the second-most common type of soft-tissue lesion. Squamous cell carcinoma was the single most common lesion, with 44 cases, representing 84.6% of malignant lesions. There also were 44 cases of irritation fibroma, but these cases constituted only 46.3% of the reactive lesions (Table 4).The general profile of the 10 most common lesions is shown in Table 5.

4. Discussion

The World Health Organization has previously defined the elderly population for developing countries as those who are 60 years and older (WHO, 1984). The continuous increase in the proportion of elderly vs. younger people in Saudi Arabia and other parts of the world is not expected to abate in the near future. This means that more health resources will need to be shifted to caring for geriatric patients in the years to come. Effective planning through epidemiologic surveys will aid in the optimal apportioning of scarce health resources toward geriatric oral health care. The authors are not aware of a previous, well-documented study on the range of pathologic lesions commonly seen in Saudi Arabian geriatric patients, whether clinical or based on histological diagnoses. A focused study on histologically diagnosed soft-tissue lesions

Table 1 Age distribution of lesions by decades.

Age (years)	Frequency	Percentage
60–69	160	69.3
70–79	42	18.2
80–89	23	9.9
$\geqslant 90$	6	2.6
Total	231	100