

FREQUENCY AND SITE DISTRIBUTION OF OROANTRAL FISTULA – A STUDY

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ABSTRACT

The objective of the study was to determine the most vulnerable sites and side involved in oroantral fistula creation.

Oroantral communication (OAC) and subsequent formation of oroantral fistula is a common complication of dental extraction of maxillary molars. Chronic oroantral fistula may complicate into chronic sinusitis and its sequelae.

The study was carried out on 60 patients with oroantral fistula reported to the Department of Oral & Maxillofacial Surgery, Khyber College of Dentistry Peshawar from Aug 2004 to Aug 2007. Diagnostic criteria were history, clinical examination, Periapical views, orthopantomogram and paranasal air sinuses (PNS) view. Maxillary first molar was involved in 60% cases, second molar in 30%, last molar in 6% and premolars in 4% cases. Right side was involved (52%) and left side (48%).

Key words: Dental Extraction, Oroantral Fistula

INTRODUCTION

The abnormal communication between the oral cavity and maxillary sinus lined by epithelium is called oroantral fistula.¹ Oroantral communication and subsequent formation of oroantral fistula is a common complication of dental extraction of maxillary molars². Chronic oroantral fistula may complicate into chronic sinusitis and its sequelae.³

In 95 % cases oroantral fistula develops as complication due to the extraction of maxillary molars.⁴ The removal of the first permanent molar is the most common cause for oroantral fistula, followed by second and third molars.^{5,6} The pre-disposing factors for the formation of oroantral fistula due to the dental extraction are enlarged maxillary sinuses resulting in a very thin partition between the antrum and oral cavity. Sometimes the roots of the posterior teeth are so long that they are very close to or inside the antrum, specifically palatal root. Some studies reported that the second upper premolar has the most intimate relation-

ship with the maxillary sinus.⁷ Chronic periapical infection of the maxillary posterior teeth has predisposition for oroantral communication after tooth extraction. Injudicious use of instrumentation close to the floor of the maxillary sinus may result in oroantral communication and subsequent oroantral fistula.⁸ Most of the patients with oroantral fistula are in third and fourth decade of life, less frequent in second decade and rarely before the age of 15 years.⁹ The rate of oroantral fistula is significantly higher in males with a male to female ratio of 1.7:1.⁸

The purpose of the study was to determine the most vulnerable site of oroantral fistula development during extraction of teeth, so that all the possible preventive measures could be undertaken to avoid its occurrence. Persistent oroantral fistula is a strong reason for morbidity and results in inability to eat or drink properly. Serious respiratory infection may result and affect the social life along with economic burden. Development of the oroantral communication

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and subsequent oroantral fistula can be prevented by thorough assessment of the patient preoperatively.

METHODOLOGY

A total of sixty patients with established oroantral fistula due to extraction of teeth were included in the study. Diagnosis was established by history, clinical examination, nose blowing test and related radiographs i.e. Periapical view, orthopantomogram (OPG) and paranasal air sinus (PNS) views. All the necessary information regarding age, gender, side, site and culprit tooth for OAF was obtained on preformed Proforma.

Data so collected were analyzed by descriptive statistics. Percentages and frequencies were calculated for age, gender, site, and side\ and culprit tooth for oroantral fistula development. SPSS version 17 was used for statistical analysis.

RESULTS

A total of 60 patients (n=60) were included in this study. The age for the patients ranged from 17 to 68 years with the mean age of 34.03 years $SD \pm 10.56$. Out of the sixty patients 41.6% were in the third decade followed by fourth decade (36.67%), fifth decade (10%), second decade 5% and only 3.3% Patients above the age of fifty and sixty (Table No.1). In this study OAF was predominantly common in males (61.7%) than females (38.3%) having male to female ratio of 1.6:1 (Fig.1). Maxillary first molar was the most common site in the creation of oroantral fistula i.e. 60 percent, followed by second molar 30 percent, last molar 6 % percent, second premolar 2% and first premolar 2%. (Fig.2). OAF was found more on the left side 52%. The ratio of left to right side was 1.06 .

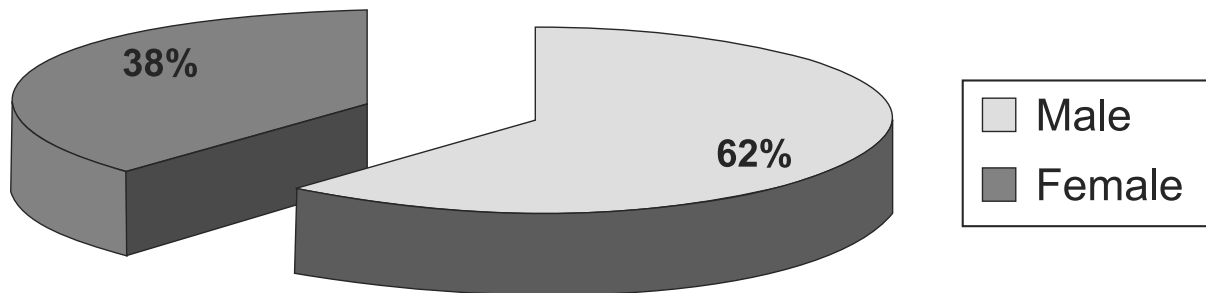


Fig 1: Gender distribution of oroantral fistula. (n=60)

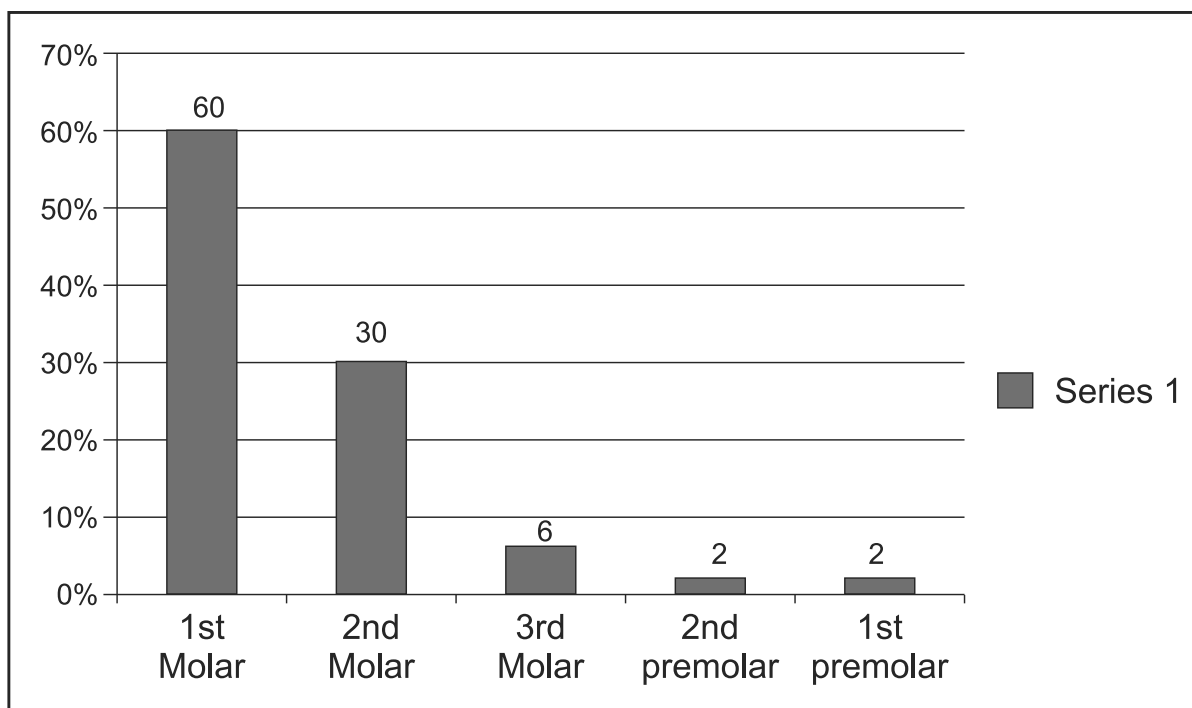


Fig 2: Site distribution of oroantral fistula. (n = 60)

TABLE 1: AGE DISTRIBUTION OF OROANTRAL FISTULA PATIENTS (n = 60)

Years	(n)	%	Mean	Range (Years)
15-20	3	5		
21-30	25	41.7		
31-40	22	36.7	34.03	
41-50	6	10	SD $\pm$ 10.56	17-68
51-60	2	3.3		
61-70	2	3.3		
Total	60	100		

DISCUSSION

In this study the age of the patients with oroantral fistula at the time of presentation ranged from 17 to 68 years with the mean age of 34.03 years $SD \pm 10.56$. Forty one percent patients were in the third decade followed by fourth decade 36.67% and only 3.3% were in the fifth and sixth decade. Similar high incidence in 3rd and 4th decade was reported by Goven's study.⁹ Elarbi MS in a recent study on oroantral fistula conducted at the dental faculty Garyouins University Benghazi Libya shows the same age group with highest incidence in the 4th decade.¹⁰ However Delgado Gonzalez in his study on oroantral fistula reported patients between ages 25 and 45 years (Mean: 35.5 years). The highest incidence was seen in 2nd decade.¹¹

The result of this study shows that oroantral fistula was predominantly common in males (61.7%) than females (38.3%). The male to female ratio was 1.6:1. In a study recently performed by Elarbi MS 70% male who suffered from oroantral fistula.¹⁰ The study of Hirata and his coworkers show that the rate of oroantral fistula is significantly higher in males with a male to female ratio of 1.7:1.⁶ The study of Delgado shows higher ratio in males.¹¹

The present study shows that maxillary first molar was the most common site in the creation of oroantral fistula i.e. 60 percent, followed by second molar 30 percent, last molar 6 % percent, second premolar 2% and first premolar 2%. In a study conducted by Hirata et al perforation was found most often after the extraction of upper first molar.⁶ According to Yabroudi F and Dannan A 80% of the communications resulted after the removal of upper first molar.¹² The study performed by Goven differs from this study, in an analysis of 98 patients with OAF, the tooth most frequently involved was the upper second molar, followed by the first molar.⁹ Del Rey-Santameria studied the relationship of

the third molar extraction and incidence of oroantral communication following the extraction of 389 consecutive upper third molars. Only 5.1% of the upper third molars produced oroantral communication that supports the results of the present study i.e. 6%.¹³

Regarding side involvement oroantral fistula was found 52% on the left side 52%. The ratio left to right side was 1.06. According to Abuabara and Cortez left side predominates in the development of oroantral fistula i.e. 51% which coincides this study.⁴

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