

Determination of risk factors for dry socket

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ABSTRACT

Background:Dry socket refers to a post-extraction socket where some or all of the bone within the socket, or around the occlusal perimeter of the socket, is exposed in the days following the extraction, due to the bone not having been covered by an initial and persistent blood clot or not having been covered by a layer of vital, persistent, healing epithelium. The present study was conducted to assess the risk factors for dry sockets.

Materials & Methods: 180 patients requiring extraction of mandibular third molars of both genders were included. Risk factors such as smoking status, diabetes and systemic diseases etc. were recorded.

Results:Out of 180 patients, males were 100 and females were 80. Out of 100 males, 18 developed DS and out of 80 females, 10 had DS. The risk factors for DS was smoking in 45, diabetes in 30, pericoronitis in 25 and systemic disease in 58. The difference was significant ($P < 0.05$).

Conclusion: Authors found that risk factors for dry socket was diabetes, systemic disease and smoking.

Key words: Dry socket, diabetes, fibrinolytic osteitis

Introduction

Dry socket refers to a post-extraction socket where some or all of the bone within the socket, or around the occlusal perimeter of the socket, is exposed in the days following the extraction, due to the bone not having been covered by an initial and persistent blood clot or not having been covered by a layer of vital, persistent, healing epithelium.^{1,2} The patient may not be able to prevent food particles or the tongue from mechanically stimulating the exposed bone, which is acutely painful to touch, resulting in frequent acute pain. All parts of a dry socket lesion, except the exposed bone, can be gently touched with a periodontal probe or an irrigation needle tip without causing acute pain.³

Dry socket (DS), also referred to as alveolar or fibrinolytic osteitis, is a major complication that follows extraction of tooth/teeth in oral surgery.⁴ It is an acute inflammation of the alveolar bone around the extracted tooth and it is characterized by severe pain, breakdown of the clot formed within the socket making the socket empty (devoid of clot), and often filled with food debris.⁵ Histological features of dry socket are comprised of remnants of the blood clot and a massive inflammatory response characterized by neutrophils and lymphocyte which may extend into the surrounding alveolus.⁶ The present study was conducted to assess the risk factors for dry sockets.

Materials & Methods

This study was conducted on 180 patients requiring extraction of mandibular third molars of both genders. All were informed regarding the study and written consent was obtained. Data of name, age, gender etc. was recorded. Risk factors such as smoking status, indication of exodontia and systemic diseases etc. were recorded. Results were studied statistically. P value less than 0.05 was considered significant.

Results

Table I Distribution of patients

Total- 180		
Gender	Male	Female
Number	100	80

Table I shows that out of 180 patients, males were 100 and females were 80.

Table II Incidence of dry sockets

Total	Number	DS	P value
Male	100	18	0.02
Female	80	10	

Table II, graph I shows that out of 100 males, 18 developed DS and out of 80 females, 10 had DS. The difference was significant ($P < 0.05$).

Graph I Incidence of dry sockets

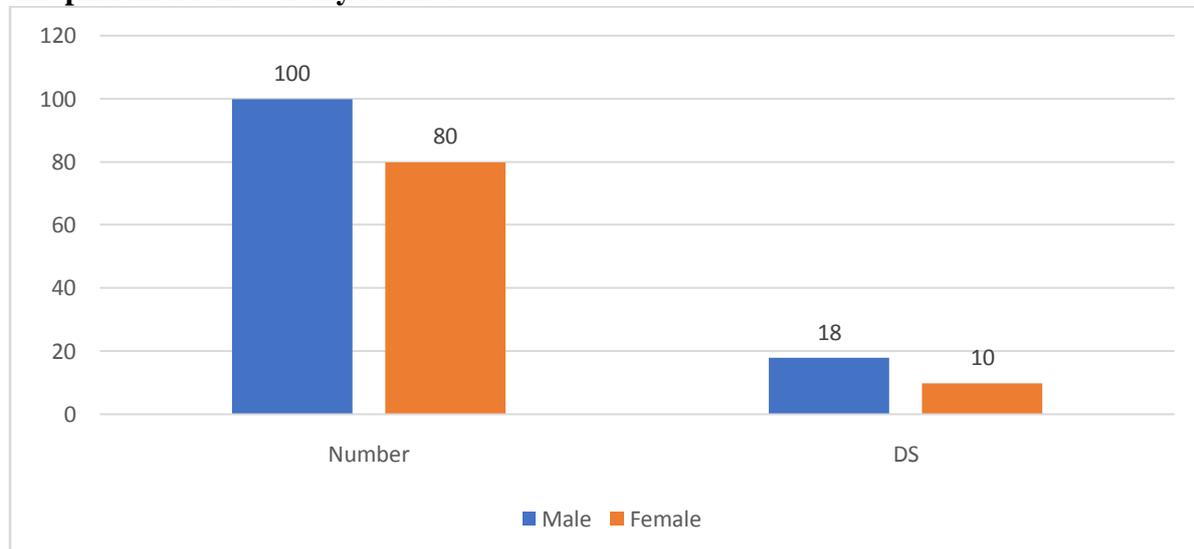
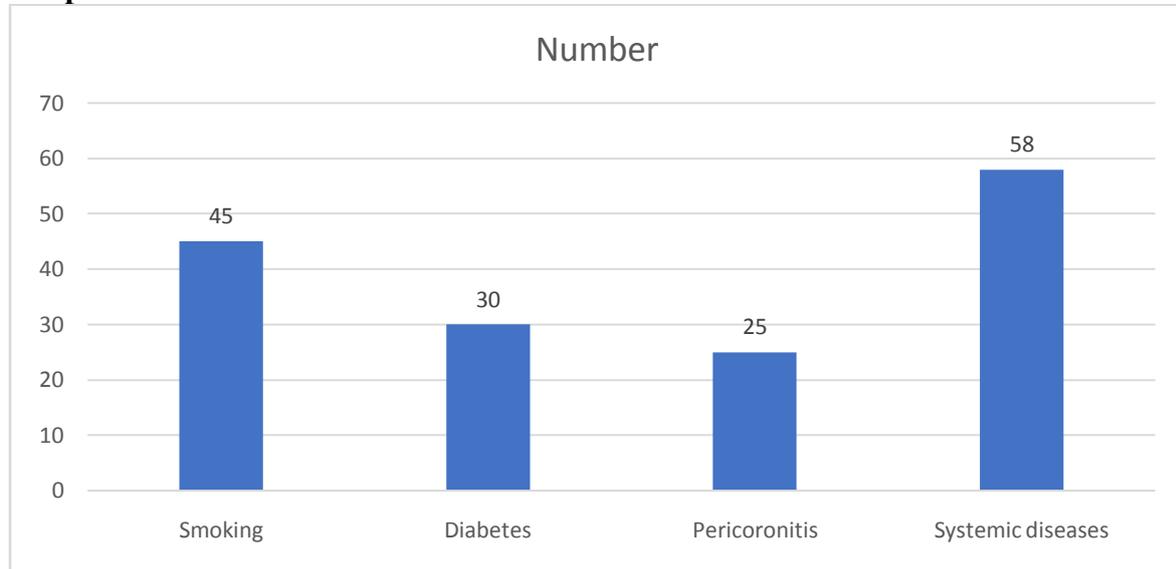


Table III Risk factors for DS

Risk factors	Number	P value
Smoking	45	0.17
Diabetes	30	
Pericoronitis	25	
Systemic diseases	58	

Table III, graph II shows that risk factors for DS was smoking in 45, diabetes in 30, pericoronitis in 25 and systemic disease in 58. The difference was significant ($P < 0.05$).

Graph II Risk factors for DS



Discussion

Exodontia is the commonest procedure in oral surgery and dentistry.⁷ Most patients have to contend with moderate to severe pain over varying periods from not only the indications of these extractions but also the fear of pain from having an extraction which might have been avoided.⁸ Occasionally, fears of such patients actually result in real or perceived pain during extraction depending on the skill of the clinician. Some may also have severe pain immediately postoperatively and this may continue for several days after the procedure.^{9,10} Several factors have been reported in literature to be responsible for the occurrence of dry socket; these include traumatic, difficult and prolonged extraction, pre- and postoperative infection at the site, smoking, oral contraceptives, bone disorders and underlying pathologies, irradiation, systemic illness such as diabetes mellitus, clotting problems, and failure to comply with post-extraction instructions. Other possible risk factors include periodontal diseases and previous dry socket with past extractions.¹¹ The present study was conducted to assess the risk factors for Dry socket.

In present study, out of 180 patients, males were 100 and females were 80. Pakravan et al¹² performed study on 1199 patients aged 18-60 year. In this study, the prevalence of dry socket was 1.1%. The most common reason for tooth extraction was extensive tooth decay and third molar was the most frequent tooth extracted (45.4%). According to the analyses, those who did not brush their teeth at all were more likely to experience dry socket. In this study, flap technique with bone extraction and simple method resulted in highest and lowest prevalence of dry socket, respectively.

We observed that out of 100 males, 18 developed DS and out of 80 females, 10 had DS. The Nusair et al¹³ a total of 1274 extractions carried out in a dry socket incidence of 2.6%. There was no sex predilection in the occurrence of dry socket. Incidence of dry socket formation was highest in the first and second molar region. Forceful infiltration of an extra 2 ml of local anesthetic into the tissues resulted in a higher incidence of dry socket; however, this difference was not statistically significant. Dry sockets occurred more frequently in difficult extraction cases as compared to routine extractions; this difference was statistically significant. However, when 20 teeth in difficult extraction cases were removed by the open

surgical method there were no cases of dry socket formation. Teeth removed principally due to a periodontal involvement did not give rise to a single case of dry socket. Treatment of dry socket with intra-alveolar dressings did reduce the pain; however, the healing time was invariably prolonged. The best results, in the form of reduction of pain and rapid healing, were obtained with the surgical method of reflection of a flap and debridement of the socket. We observed that risk factors for DS was smoking in 45, diabetes in 30, pericoronitis in 25 and systemic disease in 58. Cattelani¹⁴ found the proportion of female: male 5:1. However, some other studies revealed that gender is not an effective factor in incidence of DS. Oral contraceptives increase the circulatory concentration of estrogen and estrogen enhances fibrinolytic activity of human body.

Conclusion

Authors found that risk factors for dry socket was diabetes, systemic disease and smoking.

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