

Evaluation of Risk Factors for Dry Socket

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ABSTRACT:

Background: Dry socket (DS), also referred to as alveolar or fibrinolytic osteitis, is a major complication that follows extraction of tooth/teeth in oral surgery. The present study was conducted to assess the risk factors for Dry socket.

Materials & Methods: 340 patients requiring extraction of mandibular third molars of both genders were included. Risk factors such as smoking status, indication of exodontia and systemic diseases etc. were recorded.

Results: Out of 340 patients, males were 210 and females were 130. Out of 210 males, 20 developed DS and out of 130 females, 24 had DS. The difference was significant ($P < 0.05$). Diabetes was seen in 32, smoking in 14, pericoronitis in 22 and systemic disease in 35. The difference was significant ($P < 0.05$).

Conclusion: Risk factors for dry socket were systemic disease, diabetes and smoking.

Key words: Dry socket, diabetes, Smoking

INTRODUCTION

Exodontia is the commonest procedure in oral surgery and dentistry. 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.¹ 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.²

Dry socket (DS), also referred to as alveolar or fibrinolytic osteitis, is a major complication that follows extraction of tooth/teeth in oral surgery.³ 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. There is mild swelling and redness of the gingival, halitosis, bone exposure, and severe tenderness on examination.⁴

Dry socket is characterized by severe and progressive pain, halitosis, regional lymphadenitis following tooth extraction.⁵ Histological features of dry socket is 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 socket.

MATERIALS & METHODS

This study was conducted among 340 patients requiring extraction of mandibular third molars of both genders. All were informed regarding the study and written consent was obtained.

Data pertaining to enrolled patients such as name, age, gender etc. was recorded. Risk factors such as smoking status, indication of exodontia and systemic diseases etc. were recorded.

Data was fed into the computer; frequencies and proportions were obtained and statistical analysis was done using SPSS software package version 16.00 (SPSS Inc, Chicago, IL, USA). P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

| Total- 340 | | |
|------------|------|--------|
| Gender | Male | Female |
| Number | 210 | 130 |

Table I shows that out of 340 patients, males were 210 and females were 130.

Table II Incidence of dry sockets among patients

| Total | Number | DS | P value |
|--------|--------|----|---------|
| Male | 210 | 20 | 0.04 |
| Female | 130 | 24 | |

Table II, graph I shows that out of 210 males, 20 developed DS and out of 130 females, 24 had DS. The difference was significant ($P < 0.05$).

Graph I Incidence of dry sockets among patients

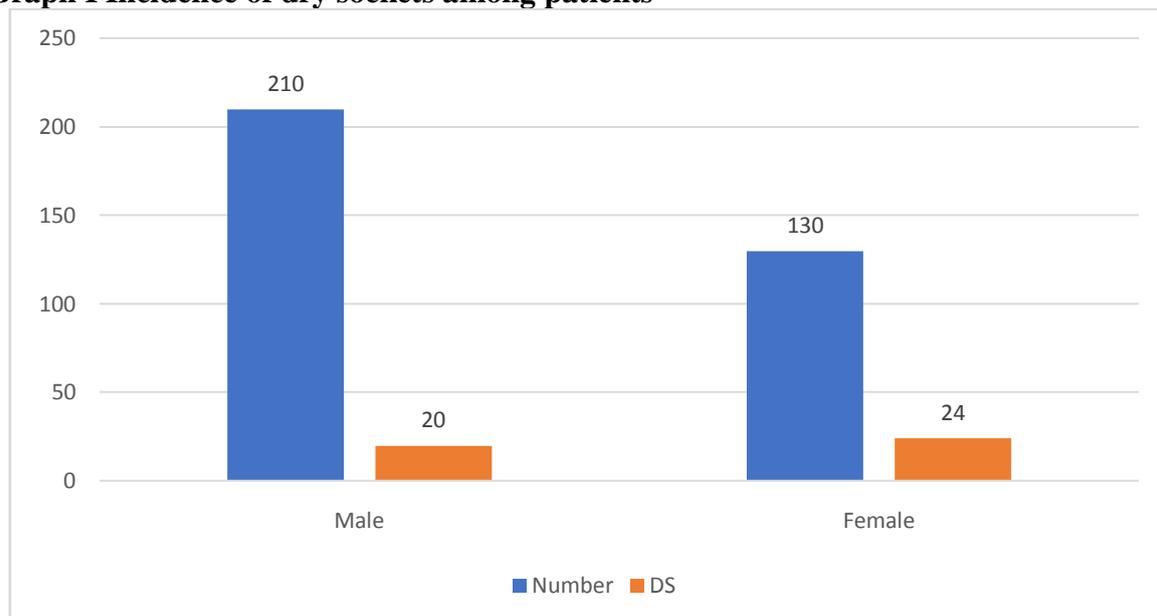


Table III Risk factors for DS

| Risk factors | Number | P value |
|-------------------|--------|---------|
| Diabetes | 32 | 0.05 |
| Smoking | 14 | |
| Pericoronitis | 22 | |
| Systemic diseases | 35 | |

Table III shows that diabetes was seen in 32, smoking in 14, pericoronitis in 22 and systemic disease in 35. The difference was significant ($P < 0.05$).

DISCUSSION

The exact etiology and mechanism of dry socket are not exactly known but several factors have been associated.⁷ Careful analysis into the pathophysiology of dry socket (DS) stated that poor oral hygiene, vasoconstrictors, and reduced blood supply are important factors but reports have placed emphasis on trauma from difficult exodontias causing fibrinolysis and release of pain inducing chemical substances.⁸ 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.⁹ Other possible risk factors include periodontal diseases and previous dry socket with past extractions.¹⁰ The present study was conducted to assess the risk factors for Dry socket.

In present study, out of 210 males, 20 developed DS and out of 130 females, 24 had DS. Akinbami et al¹¹ in their study one thousand, one hundred and eighty- two patients with total of 1362 teeth extracted during the 4-year period of the study were analyzed, out of which 1.4% teeth developed dry socket. The mean age (SD) was 35.2 (16.0) years. Most of the patients who presented with dry socket were in the fourth decade of life. Mandibular teeth were affected more than maxillary teeth. Molars were more affected. Retained roots and third molars were conspicuous in the cases with dry socket. The incidence of dry socket in our centre was lower than previous reports. Oral hygiene status, lower teeth, and female gender were significantly associated with development of dry socket. Treatment with normal saline irrigation and ZnOeugenol dressings allowed relief of the symptoms.

We observed that out of 210 males, 20 developed DS and out of 130 females, 24 had DS. Nusair et al¹² 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 diabetes was seen in 32, smoking in 14, pericoronitis in 22 and systemic disease in 35. One major factor that has been documented in literature that predisposes to dry socket is smoking; avoidance of smoking within the period of healing is a component of the post-extraction instructions, but the level of compliance to such specific instruction was ambiguous, again; pre-extraction plasma/tissue levels of nicotine and other nitrous amines might also possibly enhance the occurrence of dry socket.

CONCLUSION

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

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