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Analysis of incidence and risk factors associated with formation of dry socket: A clinical study

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Abstract

Background: The present study was conducted for analyzing incidence and risk factors associated with formation of dry socket.

Materials and methods: A total of 50 patients were analyzed who underwent dental extraction procedures. All the procedures were carried out under local anaesthesia. Adequate medical history was obtained of all the patients prior to the surgery. Postoperative follow-up was done and incidence of dry socket was evaluated. Proper history was obtained among these patients and risk factors of dry socket were assessed.

Results: The incidence of dry socket was 6 percent. Positive tobacco smoking history was seen in 4 percent of the patients. Females with history of use of oral contraceptives were seen as risk factor in 2 percent of the patients. Traumatic extraction and gingival infection of associated region were seen as risk factors in 4 percent and 6 percent of the patients respectively.

Conclusion: Smoking habit, persisting gingival pathology and traumatic extractions were the factors associated with formation of dry socket.

Keywords: Dry socket, risk factors

Introduction

The unscientific term “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. Dry socket lesions occur in approximately 1% to 5% of all extractions and in up to 38% of mandibular third molar extractions^[1-3].

Food particles that collect inside the socket may dislodge a blood clot. Bacterial biofilm and food particles inside a socket may also hinder the reformation of a dislodged blood clot by obstructing contact of a reforming blood clot with the exposed bone. Food particles and bacterial biofilm may hinder contact of the healing epithelium with the exposed bone, which may prolong the healing time of the dry socket lesion. Food particles that collect inside a dry socket can also ferment due to bacteria. This fermentation may result in the formation of toxins or antigens that may irritate the exposed bone, produce an unpleasant taste or halitosis, and cause pain throughout the jaw. However, evidence suggests that bacteria is not the main cause of dry socket lesions^[4-7]. Hence, the present study was conducted for analyzing incidence and risk factors associated with formation of dry socket.

Materials and Methods

The present study was conducted for analyzing incidence and risk factors associated with formation of dry socket. A total of 50 patients were analyzed who underwent dental extraction procedures. All the procedures were carried out under local anaesthesia.

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Adequate medical history was obtained of all the patients prior to the surgery. Postoperative follow-up was done and incidence of dry socket was evaluated. Proper history was obtained among these patients and risk factors of dry socket were assessed. All the results were analyzed by SPSS software.

Results

A total of 50 patients were analyzed. Out of these 50 patients, dry socket was seen in 3 patients. Hence; the incidence of dry socket was 6 percent. Positive tobacco smoking history was seen in 4 percent of the patients. Females with history of use of oral contraceptives were seen as risk factor in 2 percent of the patients. Traumatic extraction and gingival infection of associated region were seen as risk factors in 4 percent and 6 percent of the patients respectively.

Table 1: Incidence of dry socket

Variable	Number	Percentage
Dry socket	3	6
Total uneventful extractions	47	94

Table 2: Risk factors of dry socket

Risk factors	Number	Percentage
Tobacco smoking history	2	4
Females with history of use of oral contraceptives	1	2
Traumatic extraction	2	4
Gingival infection of associated region	3	6

Discussion

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. 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. Dry socket, also referred to as alveolar or fibrinolytic osteitis, is a major complication that follows extraction of tooth/teeth in oral surgery [6-9]. Hence; the present study was conducted for analyzing incidence and risk factors associated with formation of dry socket.

A total of 50 patients were analyzed. Out of these 50 patients, dry socket was seen in 3 patients. Hence; the incidence of dry socket was 6 percent. Positive tobacco smoking history was seen in 4 percent of the patients. Females with history of use of oral contraceptives were seen as risk factor in 2 percent of the patients. Traumatic extraction and gingival infection of associated region were seen as risk factors in 4 percent and 6 percent of the patients respectively. Haraji *et al.* reported that the modified triangular flap decreases the incidence of Alveolar Osteitis more than the buccal envelope flap. In this study he examined the patients who were candidates for extraction of a bilaterally impacted mandibular third molar with the same difficulty index; a modified triangular flap was placed on one side and a buccal envelope flap (control) was placed on the other side, Alveolar Osteitis and healing were assessed at three and seven days after surgery [8]. Oginni FO reported that control of preoperative infection, persistence on good oral hygiene, avoidance of trauma, and avoidance of surgery on days 1 to 22 of the menstrual cycle in non-menopausal women may reduce the incidence of dry socket in

the study population, The use of an oral contraceptive was elicited in 25% of the females, and extractions were performed between days 1 and 22 of their menstrual cycle. Extraction was traumatic in 66.2% of cases, a ranking of the elicited risk factors suggests that a previously infected posterior tooth involves an equal risk in both genders. Poor oral hygiene and traumatic extraction in a mandibular tooth were prominent in males, whereas extractions performed between days 1 and 22 of the menstrual cycle were significant in females [9]. Bortoluzzi MC *et al.* observed the incidence of dry socket and they reported that there were higher pain levels and pain persisting longer than two days were observed with more traumatic surgeries, or associated with postoperative complications. Smoking was found to be statistically associated with the development of postoperative complications [10]. In other study Kaya G. *et al.* compare the effects of alvogyl, the SaliCept patch, and low-level laser therapy in the management of alveolar osteitis and he found that no significant differences in the management of alveolar osteitis between the patients that treated by curettage and irrigation followed by alvogyl applied directly to the socket and the patients that treated by curettage and irrigation followed by a Sali Cept patch applied directly to the socket, but the management of alveolar osteitis was significantly better in patients treated by curettage and irrigation followed by continuous-mode diode laser irradiation more than the patients who treated by curettage and irrigation alone-curettage and irrigation followed by alvogyl applied directly to the socket- curettage and irrigation followed by a SaliCept patch applied directly to the socket [11].

Conclusion

Smoking habit, persisting gingival pathology and traumatic extractions were the factors associated with formation of dry socket.

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