

Original Research Article

## **Incidence of the Dry Socket after Surgical Removal of the Third Molar: A Retrospective Study**

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**Abstract:** The common complications postoperatively following the surgical extraction of tooth especially third molar is dry socket. It manifests as severe pain starting usually on the second or third day postoperatively. The present study was done to study the incidence rate of the dry socket and some of its risk factors. The study was done retrospectively at the oral surgery department college of dental science and hospital, Amargadh, District- Bhavnagar, Gujarat. Records of the last 2 years were considered for the study. Only patients undergone with the surgical extraction of the third molar were taken for the study. The case history of all patients undergone with the third molar extractions was obtained from the departmental records. Dry socket was diagnosed based on the absence of clot in the socket and presence of severe pain from the socket. Total 293 third molar surgical extractions were carried out in the department over a period of 2 years. The patients were of the age group of 18 to 45 years. Out of these, records of 256 patients were available and considered for the study. In these 256 patients, 278 third molar extractions were done surgically. In these 178 extractions of third molar, 12 (4.09%) patients were presented with the features of dry socket. The incidence of dry socket was more in case of smokers (08 patients) as compared to non- smokers (04 patients). High incidence of the dry socket is seen in case of surgical extraction of the mandibular third molar than that of the maxillary third molar. Male and females were seen showing almost equal rate of the dry socket incidence. The high incidence of dry socket was observed in patients of smokers after mandibular third molar surgical removal.

**Keywords:** Dry socket, Surgical extraction, Third molar

### **INTRODUCTION**

Dry socket is a common post-extraction complication. It can be defined as a postoperative pain at the extraction site increasing in severity at any time between 1 and 3 days after the extraction accompanied by a totally or partially disintegrated clot of blood within the alveolar socket with or without halitosis [1].

The incidence of "Dry socket" has probably been seen since the practice of exodontia began. It is unpleasant and most common local complication after surgical removal of tooth. Etiology of dry socket is often multifactorial and risk factors like sex, age, tobacco use, infection of alveolus, radiographic difficulty of extraction etc. can be present [2]. The present study was done to study the incidence rate of the dry socket and some of its risk factors.

### **MATERIALS AND METHODS**

The study was done retrospectively at the oral surgery department of college of dental science and hospital, Amargadh, District- Bhavnagar, Gujarat.

Records of the last 2 years were considered for the study. Only patients undergone with the surgical extraction of the third molar were taken for the study. The case history of all patients undergone with the third molar extractions was obtained from the departmental records. The information collected were the patients' case history, oral hygiene status, reasons for extractions, teeth extracted, systemic factors, drugs prescribed and the incidence of dry socket. Approval of the ethical committee was taken before start of the study. Dry socket was diagnosed based on the absence of clot in the socket and presence of severe pain from the socket.

### **RESULTS**

Total 293 third molar surgical extractions were carried out in the department over a period of 2 years. The patients were of the age group of 18 to 45 years. Out of these, records of 256 patients were available and considered for the study. In these 256 patients, 278 third molar extractions were done surgically. In these 178 extractions of third molar, 12 (4.09%) patients were presented with the features of dry socket.

Patients were presented with various complaints. Eleven patients were presented with the complaint of empty socket, which suggest the

displacement of the blood clot. Bare bone was visible in 05 patients, while 08 patients were presented with the halitosis (Table 1).

**Table 1: Number of patients of dry socket presented with various complaints**

| Examination of dry socket | Number of patients with dry socket |
|---------------------------|------------------------------------|
| Empty socket              | 11                                 |
| Bare bone                 | 05                                 |
| Halitosis                 | 08                                 |
| Others                    | 03                                 |
| <b>Total</b>              | <b>12</b>                          |

In the present study, 56 patients were having the habit of smoking either bidi or cigarette or any other form of smoking. Though they were told to quit

smoking after extraction, the incidence of dry socket was more in case of smokers (08 patients) as compared to non- smokers (04 patients) (Table 2).

**Table 2: Incidence of the dry socket in case of smokers and non-smokers**

| Smoking habit | Total patients | Number of patients with dry socket |
|---------------|----------------|------------------------------------|
| Smoker        | 56             | 08                                 |
| Non-smoker    | 237            | 04                                 |
| <b>Total</b>  | <b>293</b>     | <b>12</b>                          |

One sixty eight mandibular third molars were removed surgically in the present study, out of these 09 were came with a complaint of painful socket.

Therefore high incidence of the dry socket is seen in case of surgical extraction of the mandibular third molar than that of the maxillary third molar (Table 3).

**Table 3: Incidence of dry socket in surgical extraction of the maxillary and mandibular third molars**

| Tooth                  | Total patients | Number of patients with dry socket |
|------------------------|----------------|------------------------------------|
| Maxillary third molar  | 125            | 03                                 |
| Mandibular third molar | 168            | 09                                 |
| <b>Total</b>           | <b>293</b>     | <b>12</b>                          |

Male and females were seen showing almost equal rate of the dry socket incidence (Table 4).

**Table 4: Incidence of dry socket in case males and female patients**

| Gender       | Total patients | Number of patients with dry socket |
|--------------|----------------|------------------------------------|
| Males        | 151            | 06                                 |
| Females      | 142            | 06                                 |
| <b>Total</b> | <b>293</b>     | <b>12</b>                          |

**DISCUSSION**

Dry socket is common complication after surgical extraction of teeth especially of impacted mandibular third molars. The clinical features of this disease is well known and was first explained by Crawford in 1896 [2].

Birn H. in 1973 hypothesized that fibrinolysis is the provoking factor in Fibrinolytic alveolitis, infection or trauma or both may be the etiology of dry socket [2].

The frequency of dry socket varies between 1 and 4% of all tooth extractions, and can reach upto 20 to 30% in third molar surgeries and can temporarily reduce the quality of life of patients because of the presence of sharp pain [3].

The clinical manifestations of dry socket are necrosis and disintegration of the originally formed blood clot, empty alveolus, with partially or completely denuded, covered by a greyish yellow layer of detritus and necrotic tissues and very sensitive bone surfaces. The severe throbbing pain from the extraction socket radiates in different adjacent parts or organs. This typically usually occurs 2 - 3 days after tooth extraction and can last several days to weeks [2, 4, 5].

The two most common explanations as to why the mandibular third molar site is the most affected by dry socket are traumatic extraction and bacterial contamination [2].

The healing of the extraction site is disrupted and delayed, since the formation of a blood clot is an important part of the healing process. The term "dry

socket" comes from the clinical appearance of the wound. Since no blood clot is present, exposed bare bone can be visible [6, 7].

Nowadays, the use of novel drug delivery systems can be an effective way to prevent, treat the incidence of dry socket. Conventional methods can include rinse, gel, paste, powder, and paint and mouth wash [8].

Dry socket is usually a self-limiting condition. However, as pain is severe, the patient requires symptomatic treatment. The range of treatments for a dry socket will include treatments directed locally to the socket, like irrigation of the socket with a 0.12- 0.2% chlorhexidine and also home use of a syringe for irrigation; placement of a self-eliminating dressing like Alvogyl (containing butamben, eugenol and iodoform); placement of an obtundant dressing such as eugenol, zinc oxide and lidocaine gel; or, a combination of these therapies and, where appropriate, the prescription of systemic antibiotics [9].

#### CONCLUSION

In the present study, the high incidence of dry socket was observed in patients of smokers after mandibular third molar surgical removal. The incidence of the dry socket was found to be multifactorial and care should be taken in these patients to avoid the formation of the dry socket.

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