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Original Article

Assessment of Risk Factors associated with Dry Socket- A Clinical Study

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ABSTRACT:

Background: Dry socket (DS) is frequent complication seen in patients undergoing extraction. The present study was conducted to evaluate the risk factors associated with DS. **Materials & Methods:** This study was conducted in department of Oral and Maxillofacial Surgery. It consisted of 520 teeth in 840 patients requiring extraction of teeth. General information such as name, age, gender, smoking status and systemic diseases were recorded. Patients were divided into 4 age groups. Patients were divided into medically fit and with systemic disorder. **Results:** Out of 840 patients, 480 were males and 360 were females. The difference was non-significant (P= 0.1). 50 patients had DS, the prevalence was 6%. The number of patients with DS in <18 years was 8, 18-30 years (20), 31-50 years (15) and >50 years (7). The difference was non-significant (P>0.05). 10 patients had DS among 150 patients medically fit and 40 patients had DS among 640 systemic ill patients. The difference was significant (P< 0.05). Smokers were 210 out of which 18 had DS. Nonsmokers were 630 out of which 32 had DS. The difference was significant (P<0.05). **Conclusion:** Dry socket is one of the complications seen following extraction of teeth. Medical condition affects the outcome of the treatment. Smoking is one of the contributory factors leading to DS.

Key words: Dry socket, Medical status, Smoking

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INTRODUCTION

Extraction of teeth is indicated in case of non restorable teeth. The most common complication of extraction is dry socket which in turns depends upon various factors. Dry socket (DS) is defined as "post-operative pain in and around the extraction site, which increases in severity at any time between one and three days after the extraction, accompanied by a partially or totally disintegrated blood clot within the alveolar socket, with or without halitosis." It is also known as "alveolitis sicca dolorosa" or "alveolalgia".¹

Its incidence of DS reported to be 3% for all extractions and can reach over 30% for impacted mandibular third molars. Difficult or traumatic extractions, female gender, tobacco use, site of extraction, oral contraceptives and pre-existing

infection are among few contributory factors favoring dry socket.²

Based on the experience of surgeon, amount of trauma during extraction, site of extraction, local anesthesia, smoking status, inappropriate irrigation during surgery, oral contraceptive, and preoperative infection the incidence of DS differs. Various studies had reported different incidence of DS in surgical removal of impacted mandibular third molar between 5% and 30% and in simple extraction of permanent teeth between 1% and 4%.³

Although DS is a self limited complication, various methods have been proposed for treatment of this phenomenon. However, prevention is more effective in DS. DS occurs when blood clot dissolves following increased fibrinolytic activity and the exposure of alveolar bone happens. The fibrinolysis is the result of plasminogen pathway activation,

which can be accomplished via direct or indirect activator substances. Direct activators are released after trauma to the alveolar bone cells. Indirect activators are secreted by bacteria. DS is characterized by severe and progressive pain, halitosis, regional lymphadenitis following tooth extraction.⁴ The present study was conducted to evaluate the risk factors associated with DS.

MATERIALS & METHODS

This study was conducted in department of Oral and Maxillofacial Surgery. It consisted of 520 teeth in 840 patients requiring extraction of teeth. All were informed regarding the study and written consent was obtained. Ethical clearance was taken prior to the study. General information such as name, age, gender, smoking status, systemic diseases were recorded. Patients were divided into 4 age groups. Patients were divided into

medically fit and with systemic disorder. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

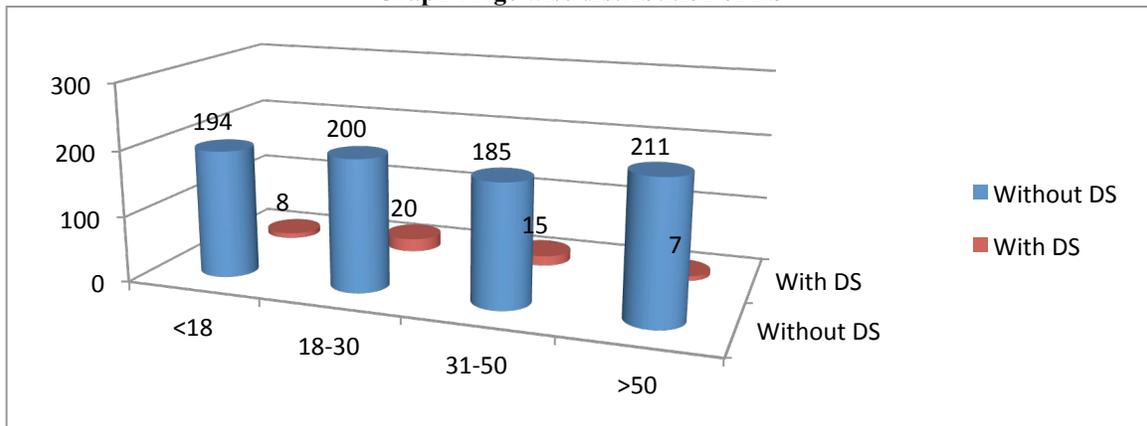
RESULTS

Table I Distribution of patients

Total- 840	
Male	Female
480	360

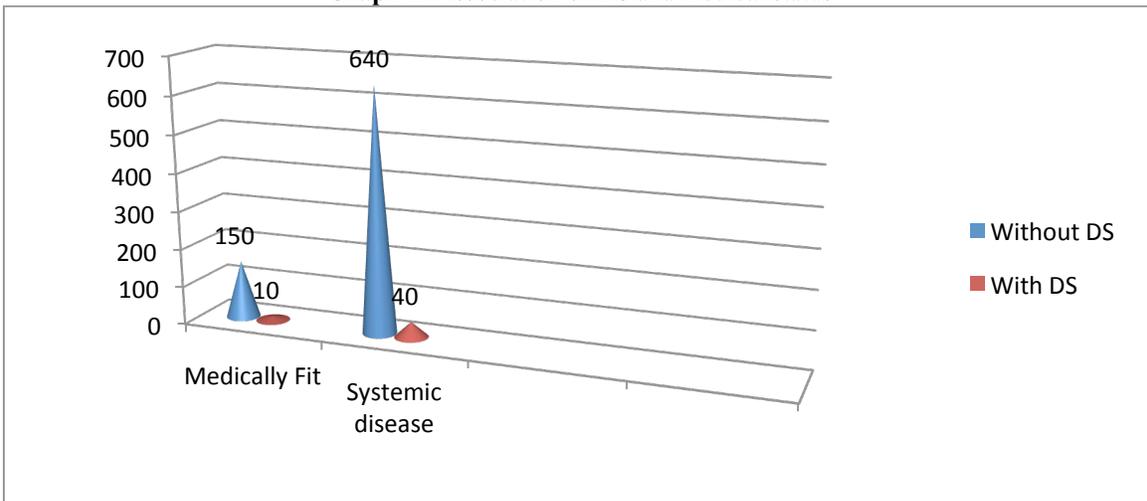
Table I shows that out of 840 patients, 480 were males and 360 were females. The difference was non- significant (P-0.1).

Graph I Age wise distribution of DS

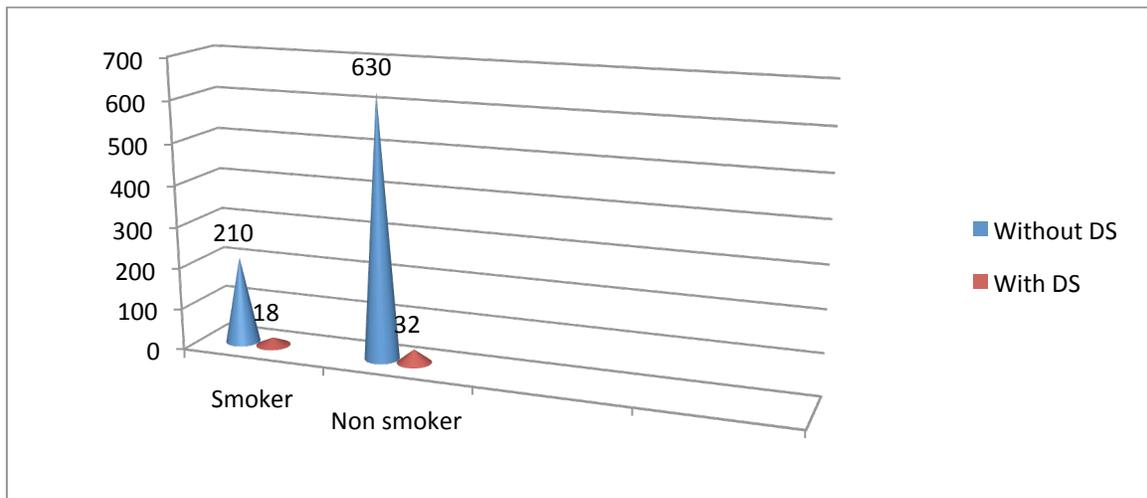


Graph I shows that 50 patients had DS, the prevalence was 6%. The number of patients with DS in <18 years was 8, 18-30 years (20), 31-50 years (15) and >50 years (7). The difference was non significant (P>0.05).

Graph II Association of DS and medical status



Graph II shows that 10 patients had DS among 150 patients medically fit and 40 patients had DS among 640 systemic ill patients. The difference was significant (P< 0.05).

Graph III Association of DS and smoking

Graph III shows that smokers were 210 out of which 18 had DS. Nonsmokers were 630 out of which 32 had DS. The difference was significant ($P < 0.05$).

DISCUSSION

Patients of DS experience pain after one to three days of extraction. There is halitosis, foul taste, and regional lymphadenitis. In the clinical examination, there exists no blood clot in the extraction socket and the alveolar bone is exposed. Higher fibrinolysis and increased plasmin activity along with higher amount of tissue activators in extraction socket of cases with DS.⁵

In present study, out of 840 patients, 480 were males and 360 were females. 50 patients had DS, the prevalence was 6%. The number of patients with DS in <18 years was 8, 18-30 years (20), 31-50 years (15) and >50 years (7). This is similar to Harmeshet al.⁶

Dry socket (DS) is a painful condition that may occur after a dental extraction and is often distressing to the patient. Although the exact pathogenesis of dry socket is not fully understood, it is thought to occur from increased fibrinolytic activity resulting in blood clot disintegration.

Sharma et al⁷ in their study, a total of 1073 teeth included in this study. 46.11% of patients were male and 53.89% were female. The mean age of participants was 32.68 ± 17.63 years. Total of 31 patients (2.89%) were diagnosed with dry socket. Smoking and oral contraceptives intake had significant association with incidence of DS. In contrast, age, gender, medical status, tooth location, number of anesthetic carpules, anesthetic technique, pre-extraction antibiotic consumption, and academic year of students had no significant association with the incidence of DS. All cases with DS treated and were followed until resolution of DS.

In present study, 10 patients had DS among 150 patients medically fit and 40 patients had DS among 640 systemic ill

patients. Smokers were 210 out of which 18 had DS. Nonsmokers were 630 out of which 32 had DS. This is in agreement with Mittal et al.⁸

Ana et al⁹ conducted a retrospective study in which a total number of patients their demographics, total number of permanent teeth extracted, number of dry sockets encountered and associated risk factors such as smoking, contraception and systemic illnesses were retrieved. 2214 patients were reviewed from whom a total of 2281 permanent teeth had been extracted. The overall incidence of dry socket was 1.8%, being more prevalent in females, in the second and third decades of life, and in mandibular teeth, more specifically in molars.

The surgeon experience affects the amount of trauma during tooth extraction. Sisk et al¹⁰ observed that incidence of DS increased when the extractions performed by residents rather than oral and maxillofacial surgeons. Kaya et al¹¹ conducted a study with the aim to compare the effectiveness of Alvogyl, SaliCept and low-level laser therapy (LLLT) in pain reduction in dry socket, and concluded that LLLT performed superiorly to SaliCept and alvogyl and achieved a pain remission in the third day. The intensity of pain decreased more rapidly in all three treatment groups than in the control group.

CONCLUSION

Dry socket is one of the complications seen following extraction of teeth. Medical condition affects the outcome of the treatment. Smoking is one of the contributory factors leading to DS.

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