

Original Research

Assessment of incidence of postoperative infections after dental implant placement

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ABSTRACT:

Background: Dental implants have become a common choice among the treatment options for missing teeth rehabilitation. The present study was conducted to assess postoperative infections after dental implant placement. **Materials & Methods:** 106 patients who received dental implants of both genders were enrolled. Postoperative infections were defined as the presence of a purulent drainage and/or increasing pain and swelling in the operated area before prosthetic loading. Implants with mobility or impaired osseointegration before prosthetic abutment placement were classified as early failures. **Results:** Out of 106 patients, males were 60 and females were 46. Males had 135 and females had 68 dental implants. The difference was significant ($P < 0.05$). Post-operative infections observed were pain in 12 males and 5 females, suppuration in 10 males and 4 females and mobility in 8 male and 9 females. The difference was significant ($P < 0.05$). **Conclusion:** Post-operative infections were observed mostly in males as compared to females.

Key words: Dental implant, Post-operative infections, Pain

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INTRODUCTION

Dental implants have become a common choice among the treatment options for missing teeth rehabilitation since they were first introduced by Branemark in the 1970s. However, this treatment modality has limitations, with previous reports of failure rates of dental implant ranging from 1% to 19%.¹ These failures could be classified into early failure and late failure based on the time when the abutment was connected: early failures occurred before the application of functional loading, and late failures occurred after applying occlusal loading or the first removal of the provisional restoration in cases of immediate implant loading.²

Although the survival rate of osseointegrated implants is high, both short- and long-term complications may occur. Postoperative wound infections are one of the major concerns for patients and surgeons, as they might hamper osseointegration and lead to an early implant failure. Postoperative infections are rare complications that usually occur within the first month after dental implant placement.

The reported prevalence varies across published studies, with figures reaching 11.5%.³ As with any biomaterial infection, the treatment of such complications can be quite complex, and infection can persist until the implanted device is removed.⁴ Peri-implantitis and implant overloading were common risk factors for late failure, but little is known about other factors affecting the maintenance of osseointegration of implant. In contrast to numerous reviews of the risk factors associated with early failure of dental implant, only one review addressed risk factors associated with late dental implant failure in this decade.⁵ The present study was conducted to assess postoperative infections after dental implant placement.

MATERIALS & METHODS

The present study comprised of 106 patients who received dental implants of both genders. The consent was obtained from all enrolled patients. Data such as name, age, gender etc. was recorded. Dental implants were inserted following all

standardized precautions. After the operation, an antibiotic (usually 750 mg amoxicillin, p.o. every 8 hours for 7 days), a nonsteroidal anti-inflammatory drug (usually 600 mg ibuprofen, p.o. every 8 hours for 4–5 days and a mouthrinse (15 mL of 0.12% chlorhexidine digluconate every 12 hours for 15 days were prescribed. Postoperative instructions and use of prescribed drugs were explained. Patients were

recalled every month Postoperative infections were defined as the presence of a purulent drainage and/or increasing pain and swelling in the operated area before prosthetic loading. Implants with mobility or impaired osseointegration before prosthetic abutment placement were classified as early failures. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 106		
Gender	Males	Females
Number	60	46

Table I shows that out of 106 patients, males were 60 and females were 46.

Table II Dental implants in both genders

Gender	Dental implants	P value
Male	135	0.01
Female	68	

Table II, graph I shows that males had 135 and females had 68 dental implants. The difference was significant (P < 0.05).

Graph I Dental implants in both genders

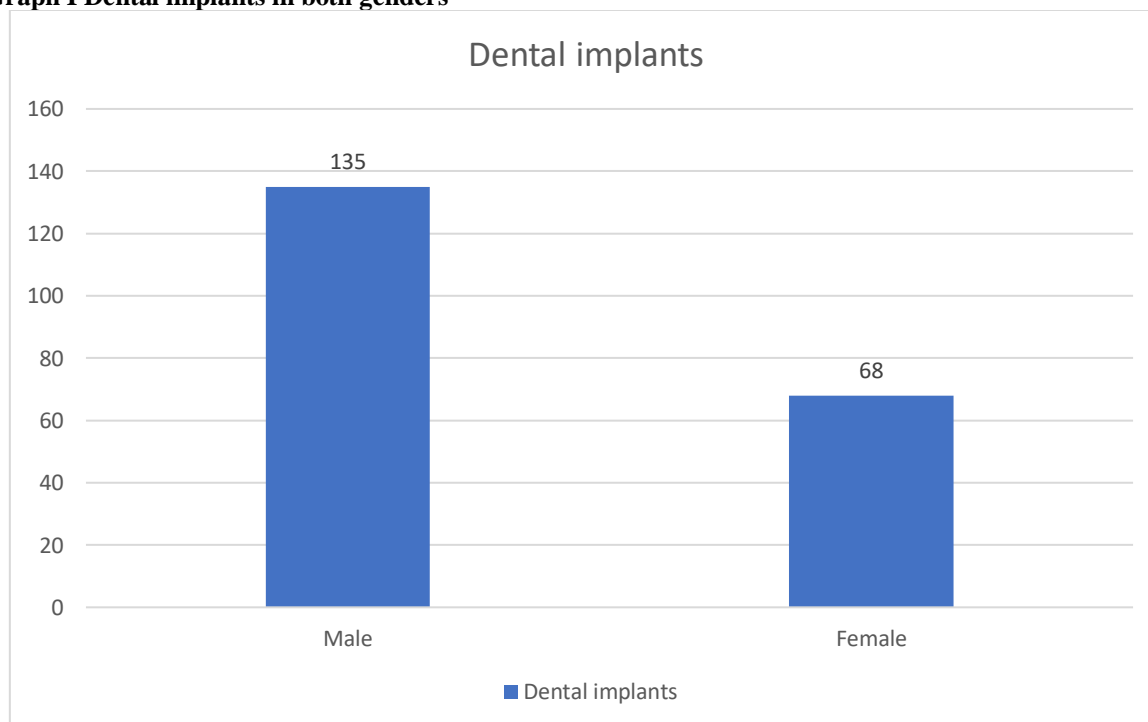


Table III Postoperative infections

Postoperative infections	Male	Female	P value
Pain	12	5	0.02
Suppuration	10	4	0.05
Mobility	8	9	0.91
Total	30	18	

Table III, graph II shows that post-operative infections observed were pain in 12 males and 5 females, suppuration in 10 males and 4 females and mobility in 8 male and 9 females. The difference was significant (P < 0.05).

Graph II Postoperative infections

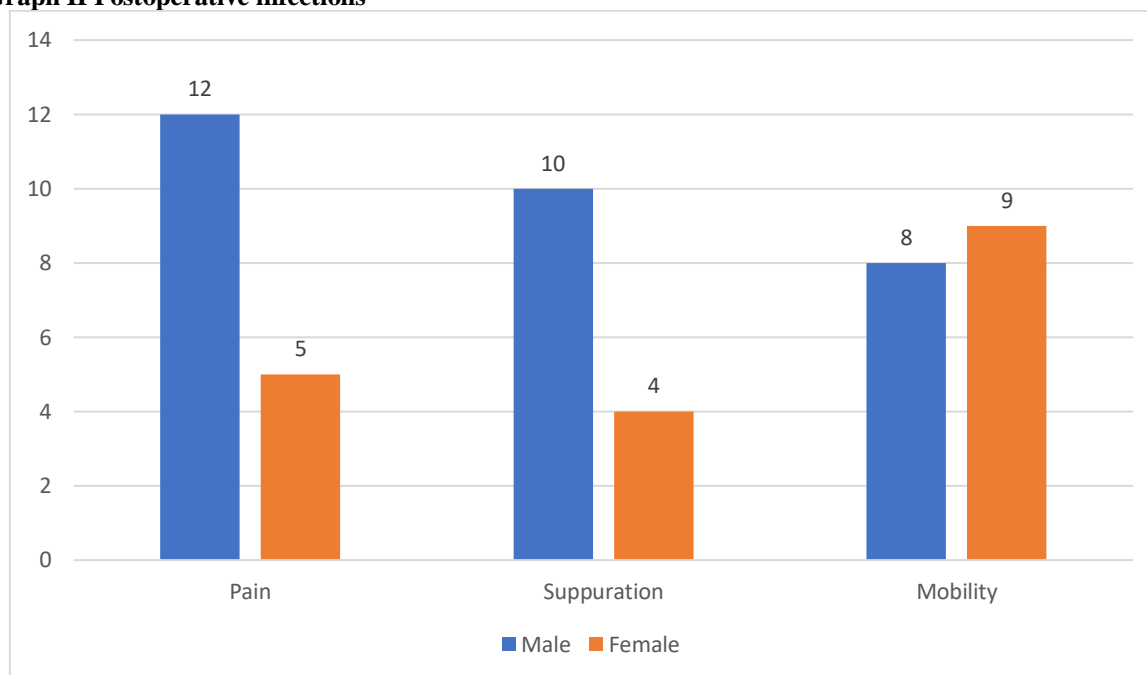


Table IV Assessment of survival rate

Gender	Failed implant	Survival rate	P value
Males	30	77.8%	0.92
Females	18	73.5%	

Table IV shows that survival rate of dental implants in males was 77.8% and in females was 73.5%. The difference was non-significant ($P>0.05$).

DISCUSSION

The interval from a diagnosis of dental implant failure to its removal is significantly longer in late failure than early failure, and late failure is also associated with greater bone loss.⁶ Moreover, late failure occurs after the final prosthesis has been placed, and so it is more like to lead to patient complaints about cost and the greater effort needed to resolve the condition. These aspects mean that resolving late failure is more difficult.⁷ Therefore, identifying risk factors related to late dental implant failure could help in predicting the treatment outcomes and also preventing conflicts not only in the patient–doctor relationship, but also between the surgeon and prosthodontists/restorative specialists.⁸The present study was conducted to assess postoperative infections after dental implant placement.

We found that out of 106 patients, males were 60 and females were 46. Camps-Font Oet al⁹determined the prevalence and describe the clinical features and treatment of patients with early infections after implant placement. Patient-based infection prevalences and 95% confidence intervals for implant were determined. Patients who healed, were followed up to determine implant survival and success rates. Three hundred thirty-seven participants (1273 implants) were included. Twenty-two postoperative infections were recorded (6.5% of the patients and

1.7% of the implants). These complications were usually diagnosed within the first month, and in 17 cases (77.3%) surgical treatment was performed because of antibiotic therapy failure. Twelve implants (54.6%) in 12 patients (54.6%) failed before prosthetic loading. The survival and success rates of the infected loaded implants were 80% and 50%, respectively, with a mean follow-up of 42.9 months (SD of 10.2 months).

We found that males had 135 and females had 68 dental implants. Figueiredo R et al¹⁰assessed possible risk factors for postoperative infections after implant surgery, explain their effects on the occurrence of such infections, and assess the relation between postoperative infections and early implant failure. Postoperative infections were defined as purulent drainage or fistula in the operated region with pain or tenderness, localized swelling, redness, and heat or fever before prosthetic loading. Bivariate and multivariate analyses of the data were performed. Eighty-eight outpatients (22 patients in the infection group and 66 controls) were selected. Male gender and submerged healing were meaningfully associated to the development of postoperative infections (bivariate analysis). Healing type and location were the independent variables included in the final logistic regression model. Postoperative infections during the osseointegration period considerably increased the risk of early failure

We found that post-operative infections observed were pain in 12 males and 5 females, suppuration in 10 males and 4 females and mobility in 8 male and 9 females. We observed that survival rate of dental implants in males was 77.8% and in females was 73.5%. Placing several implants in the same patient requires larger mucoperiosteal flaps, increased operating time, and more contamination of the wound, which can contribute to an increased risk of postoperative complications.¹¹ In this report, the proportion of patients in the IG who received more than 4 fixtures was approximately 3-fold greater than in the CG. However, the difference was not important, probably owing to the small number of cases with these characteristics. A recent meta-analysis has reported a weighted postoperative infection rate of 5.9% when patients are under prophylactic systemic antibiotics. A slightly higher prevalence was observed when antibiotics were not administered (7.0%).¹²

CONCLUSION

Authors found that post-operative infections were observed mostly in males as compared to females.

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