

Analysis of prosthetic complications in implant retained fixed restorations: Longitudinal Study

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AO Code: osseo2021.074013a

INTRODUCTION

- Prosthetic complications including both biological and mechanical frequently happen and are often underestimated
- The reported incidence of prosthetic complications approached nearly 40% after 5 years¹
- Limited number of studies have reported the prosthetic complications of implant retained fixed restorations and their associated factors in comparison to implant survival

AIM

To evaluate the mechanical and biological complications observed in the fixed prosthesis (single crowns & fixed partial dentures) supported by root form implants with more than 6 months of follow up

METHODOLOGY

Study Design	Longitudinal Study
Setting	Dental Clinics, AKUH
Study Duration	Jan-Mar 2020 (3 months)
Sampling Technique	Convenience sampling technique
Sample Size	95 Implants (WHO sample size calculator)
Ethical Approval	5119-SUR-ERC-17

Inclusion Criteria

- Patients with age ranging from 18-70 years with dental implants supported fixed prosthesis
- A minimum follow up of 6 months

Exclusion Criteria

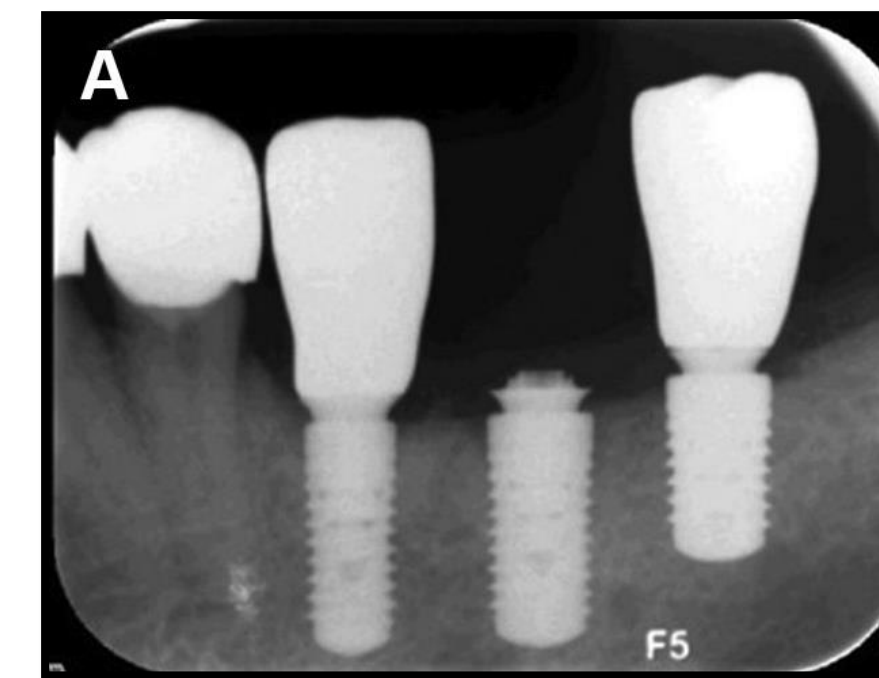
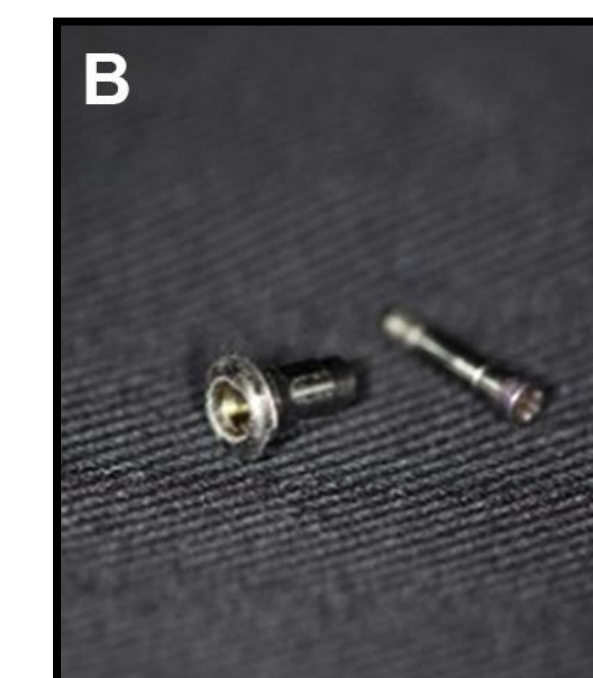
- Incomplete records
- Lost to follow up

DATA COLLECTION

Complications

Mechanical (abutment loosening, abutment fracture, screw loosening, decementation, porcelain chipping or fracture)

Biologic (Presence/absence of pain or sensitivity or presence/absence of suppuration or exudation)



DATA ANALYSIS

Mean and standard deviation

Continuous variable and frequency distribution of categorical variables

Chi-square

Comparison of complication between screw retained and cement retained prosthesis

Cox regression

To investigate the effect of possible risk factors upon the time a specified event takes to happen

SPSS version 21.0

Level of significance was kept at $p \leq 0.05$

RESULTS

- A total of 95 implants in 59 patients (43.2% females & 56.8 males) were assessed with the mean age of 46.78 ± 14.11
- The mean survival was 27.65 ± 14.588 months
- Cox regression analysis showed crown height, implant diameter and method of prosthesis retention as a significant risk factor for implant related prosthetic complications (hazard ratio: HR=2.69, p 0.002; HR=5.51, p 0.032; HR=0.73, p 0.037, respectively)

Figure 1: Frequency of Implant related complication

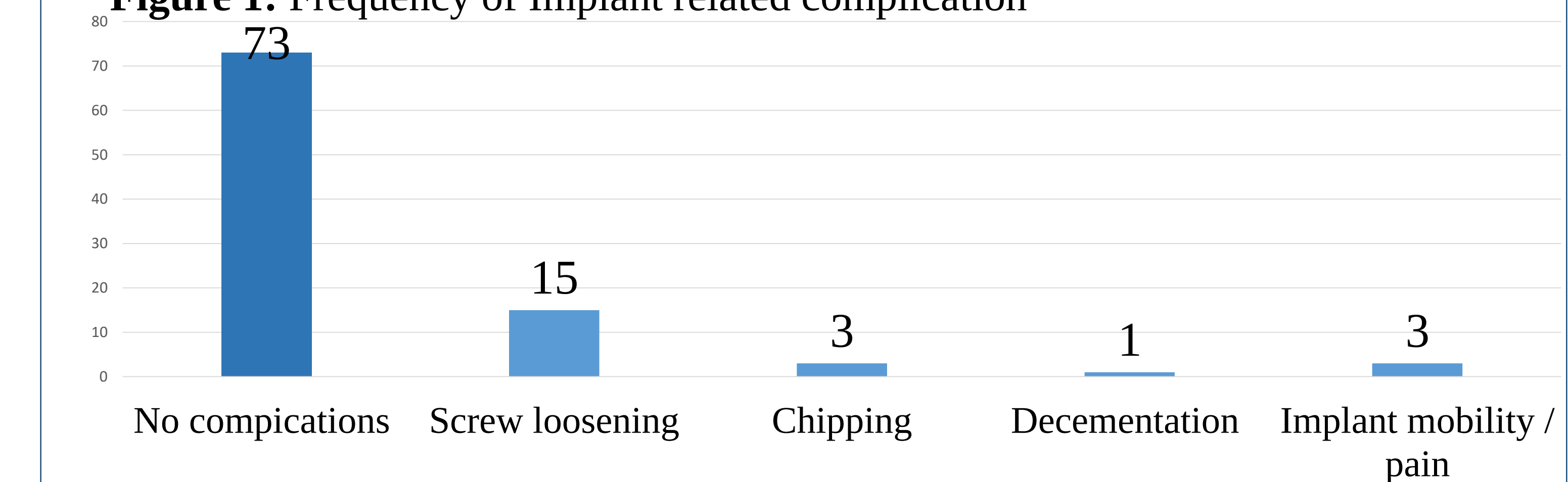


Table 1: Comparison of complication between screw retained and cement retained

Retention method	Type of complications					Pvalue
	None	Screw loosening	Chipping	Decementation	Implant mobility / pain	
Screw retained	35 (67.31%)	14 (26.92%)	02 (3.84%)	00	01 (1.9%)	0.39
Cement retained	38 (90.47%)	01 (2.32%)	01(2.32%)	01(2.32%)	02 (4.65%)	
Total	73	15	03	01	03	

Chi-square; n=95

CONCLUSION

- Most common complication found to be screw loosening (26.92%)
- Crown height, implant diameter and method of prosthesis retention had a significant impact on the implant related prosthetic complications
- There was tendency of more complications with increasing crown height, narrow diameter implant and screw retained prosthesis