

Bruxism and prosthesis

Keywords: prosthesis, implants, bruxism, dental, rehabilitation, prosthodontic

Introduction

Strength in prosthesis implant support produces one overload in structure, screw implants and bone. The aim of the present review is to provide a bibliographic research about risk factor and complications of the prosthodontic rehabilitation with implants in bruxism patients.

Materials and methods

Bibliographic research of Pubmed using terms: "oral implants AND bruxism" "dental implants prosthodontics complications AND bruxism" "biomechanics implants AND bruxism dental implants AND bruxism since 2000 to 2014.

Results

Table 1 Results

	Population	intervention	Comparison	Outcome (bruxism related)	Conclusions: is bruxism a risk factor?	Have bruxism relation with failure of implants
Schneider 2012	70 patients	100 implants with different crown-to-implant ratio Follow-up 6.2 years	Reported bruxism (17 patients, 24.3%) Mechanical complications (wear, fracture, and screws loosening) Biological complications	Bruxism did not predict mechanical or biological complications	No	No bruxism and implant failures
Ji, 2012	45 patients	297 implants 50 full-arch rehabilitations with immediate loading Follow-up 1–125.5 months	Bruxism (unspecified criteria; 58 implants) Marginal bone loss – implant success (Spiekermann and Jansen's criteria)	Higher failure rates in bruxers (29.3% implants [17/58] vs 4.6% [11/239])	Uncertain	No bruxism and implant failures
Malò, 2011	21 patients	995 implants 4 groups of patients based on edentulous areas Follow-up 5 years	Bruxism (anamnesis plus tooth wear; unspecified number of bruxers) Mechanical complications (fracture abutment,bruxers or screw loosening)	Four implants lost in two patients were in two bruxers	Uncertain	No bruxism and implant failures
Zupnik, 2011	No specify	341 implants No specify follow-up	Self-reported clenching history (121 in clencher vs 220 in nonclencher) Implant failure	Clenching: 0.22 OR (95% C.I.: 0.04–1.41) for implant failure	No	Absence the relation between bruxism and implant failure

Recommendations

Avoid cantilevers.¹⁻³

Increase number of implants placing¹⁻³ larger implants with large diameters.^{1,2}

Prosthetic design

Allow adequate freedom of movement at occlusal contact.

Areas in maximum intercuspitation.¹⁻³

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Large implants.^{1,2} Flat incline plans of the cusps.¹⁻³

Using resin acrylic teeth in prosthesis.¹⁻³

Discussion

The examined papers supported no provide clear conclusions between a relationship between bruxism - implant failures,⁴⁻⁶ bruxism-mechanical complications⁵ while that one study establish positive relationship between bruxism and mechanical failures.⁷ Although no convincing evidence that bruxism causes an overload of dental implants and their supra-structures, some practical guidelines are given as to reduce the risk of complications and, ultimately, implant failure that included: place more implants than would have been necessary, longer implants with a larger diameter help to keep the stresses in the bone as low as possible, flat incline planes of the cusps.⁸

Conclusion

No evidence that bruxism produce overload in implants although need more recommendations about size of implants, design of occlusion scheme and using discharge plaque.

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Conflicts of interest

The authors don't have conflicts of interest to disclosures.

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