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REVIEW ARTICLE

EARLY AND IMMEDIATE IMPLANT LOADING: ARE THERE ANY COMPLICATIONS?

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ABSTRACT

Immediate and early loading (6weeks) consists of putting the implant into function via a temporary prosthesis generally slightly under occlusion. This approach has become a viable alternative nowadays, especially in areas where aesthetics is crucial, often it is the case of one or two maxillary incisors. It has a considerable contribution to saving time. But what could be the clinical results and possible complications? The aim of our letter to the editors is to answer this question by comparing the complications of this approach with those of deferred loading, ie after osseointegration. The literature reports that complications concerning marginal bone loss, esthetic outcomes, soft tissue healing do not show any significant differences as long as the selection of patient is adequate and the primary stability is sufficient. But we have noted a higher rate of minimal prosthetic complications: loosening or fracture of a provisional fracture of a screw. We can conclude that the use of immediate loading in fixed implant-supported prosthesis is now a widely accepted protocol with survival rates similar to the delayed loading protocol, however, cases should be selected with caution.

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INTRODUCTION

Nowadays, early and immediate implant loading is becoming more and more indicated especially in the aesthetic zone (maxillary anterior) this approach helps reducing the patient's embarrassment, also the time and the charges required by the treatment. But the question is; are there any complications?. Mysteriously if the operator is in accordance with the accurate suggested protocol, the early or immediate loading show less complications than the conventional approach especially regarding the aesthetic outcomes, the biological outcomes and the failure rate. Esposito et al. 2015 stated that the marginal bone loss around implants immediately loaded (0.23 mm) was less than the one shown around the delayed loaded ones (0.29 mm) after one year (statistically significant difference mean difference = -0.06; 95% CI: -0.11 to -0.01; $P = 0.036$). Also, Schincaglia GP. 2016 reported that the marginal bone loss may decrease significantly with the immediate loading procedure Cannizzaro and al. 2012 presented some interesting suggestions on whether it is possible to load immediately or early at 6 weeks short implants of 6.5 mm length placed according to a flapless procedure and concluded a success rate of 93.3% recommending that immediate or early loading of flapless-placed implants are both viable procedures.

The explanation of these findings is that the mechanical loading is able to stimulate bone formation and leads to higher bone quality. With regard to the aesthetic outcomes, Esposito 2015 precised in his randomized controlled trial that the Pink esthetic score: PES was similar for the two procedures after one year of loading. He also confirmed that there is no evidence of a difference in implant failure rate. By contrast, the only one drawback with the immediate or early implant loading was regarding what is called "minor complications", such as the fracture or loss of the provisional crown or even the loss of a screw or other prosthetic component. For ensuring the success of that approach, some recommendations in the protocol are required:

- **A higher insertion torque** ≥ 35 Ncm (Al-Nawas B. 2013, Schincaglia GP. 2016, Cannizzaro and al. 2012, Esposito M. 2015)
- **Under-dimension of the drilling:** Esposito et al. 2015 proposed the use of the sequence suggested by the manufacturer in case of good bone quality. However, in the case of bones of average quality, he recommended the under-preparation by using a final drill of a size less. And for cases of low bone density of two sizes less than that suggested by the manufacturer.
- **The shape of the implant:** Conical with progressive thread design (Meloni 2012, Schincaglia 2016)

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- **Surface modification:** Osteoconductive porous anodised surface Or sandblasted surface treated with fluoride ions

These recommendations lead to a better initial stability for the implant and so it guarantees a better prognosis.

Conclusion

Based on all these statements, and emphasizing the fact that this procedure of early or immediate loading requires an operator highly experienced and an appropriate patient's selection it can be concluded that this protocols have the same or even less complication rates as the delayed procedure, but the generalization of the findings should be handled with care.

Competing interests: The authors declare no competing interest.

Authors' contributions: I.B provided the electronic search, I.B and A.A achieved the screening and selection of articles with high evidence level, E.M and I.B realized the synthesis and the writing. A.A gave his corrections and appreciations.

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