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Bone density evaluation at peri implant site using osteotomy and osseodensification technique

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ABSTRACT

Poor bone density can hinder osseointegration and reduce bone-to-implant contact. Low-density bone has undergone different types of osteotomies and drilling techniques to enhance stability. By producing mild plastic deformation with the use of densifying burs, the osseodensification procedure preserves bone and improves the host site.

Aim and objective: The aim of the study is to evaluate the changes in bone density occurring pre and post implants placement with osteotomy and osseodensification technique.

The objective is to compare the bone density at the site before and after implant placement at intervals of one and three months by osteotomy and osseodensification technique.

Material and Methodology: 40 implants were placed in low bone density regions (Misch's D3 & D4) which were divided into 2 groups.


Osteotomy technique was included in Test group (20 implants) while the Control group (20 implants) had Osseodensification technique.

CBCTs were performed one month and three months after implant insertion to measure the change in bone mineral density in Hounsfield units (HU).

Result: Osteotomy (OS) and osseodensification (OD) had mean values at one month and three months that differed by 31.83 (OD), 83.85 (OD), 2.45 (OS), and 33.26 (OS), respectively. The findings demonstrate that bone density rises higher when an implant is placed by osseodensification surgery than with an osteotomy.

Conclusion: In comparison to the conventional osteotomy method, the study found that the osseodensification strategy enhanced bone mineral density in the region with low bone density.

Keywords: Osteotomy, Osseodensification, bone mineral density, densah burs

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