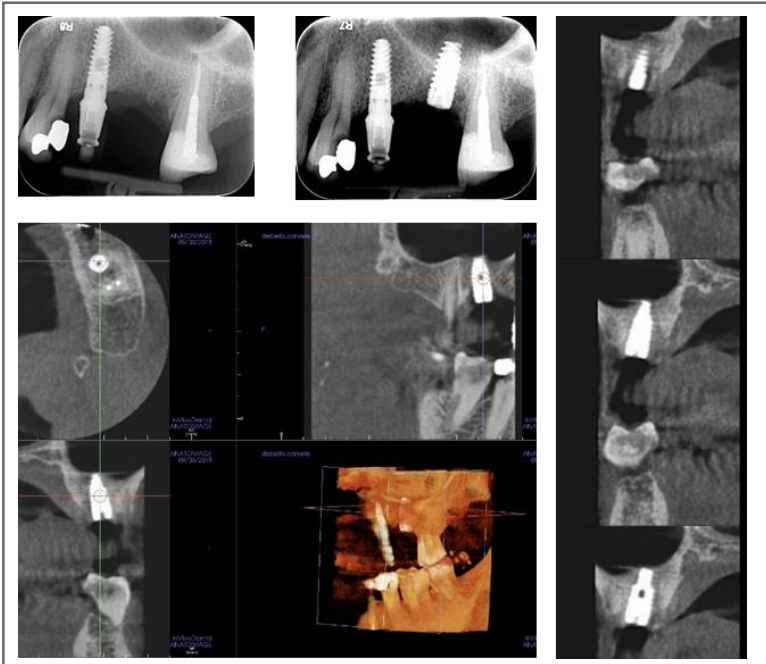
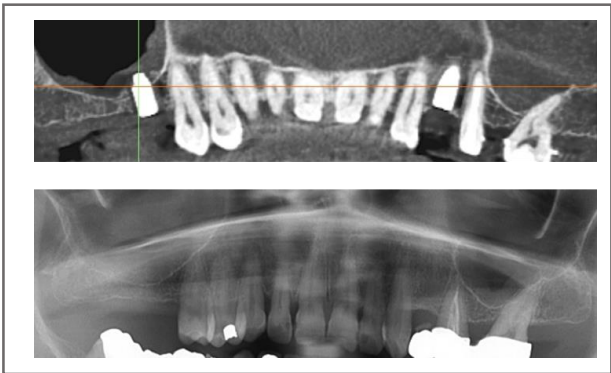


SHORT DENTAL SPIRAL IMPLANTS PLACED BY A PROGRESSIVE
STEPS TECHNIQUE IN THE ATROPHIC POSTERIOR MAXILLA:
A PERSONAL 10 YEARS FOLLOW ON 80 IMPLANTS

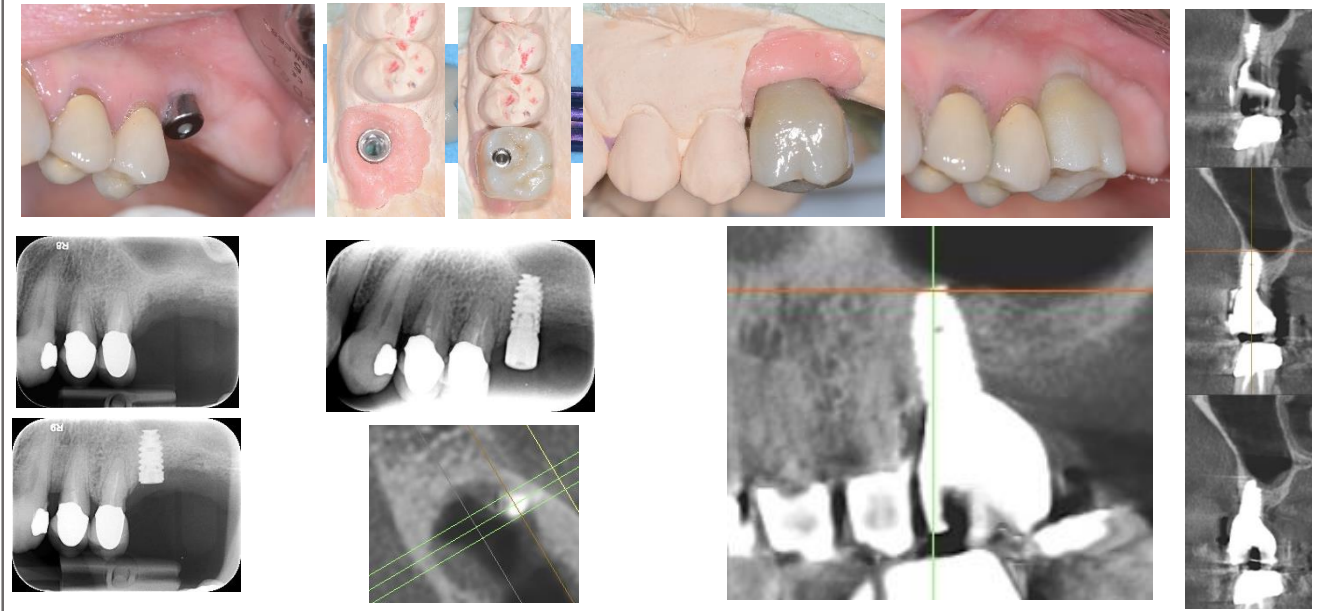
Dr. Saverio Capodiferro, DDS, LDS

Abstract

A recent analysis of the literature shows a growing evidence on the utility of short dental implants (< 10 mm) in clinical situations of limited vertical bone height. The most challenge situation for implant placement is the atrophic posterior maxilla with a residual bone height radiographically ranging from 4,5 to 6 mm. Several surgical techniques and implant morphologies have been suggested in the past to avoid sinus floor elevation, with its postoperative morbidity, higher costs, and higher risks of complications.



Results

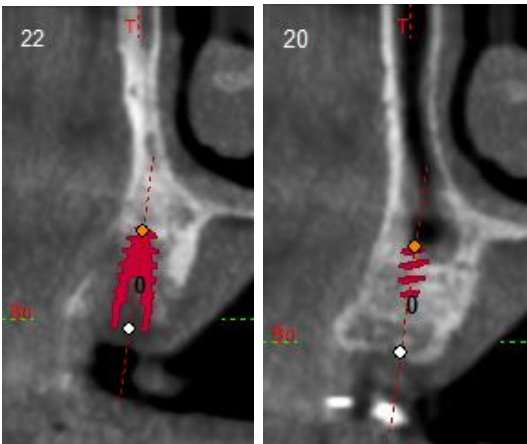


In all cases a spiral implant longer (from 2 up to 4 mm) than the length pre-operative measured was inserted. One implant was lost 30 days after placement for lack of osseointegration and another implant for parodontal infection of the adjacent tooth, both placed by flapless surgery with healing cap positioning; one implant showed perimplantitis related to poor hygiene with bone loss around fixture but without mobility, and is still in follow-up. In the remaining cases a good perimplant bone level was always preserved during the follow-up till to date. Clinical post-operative complications have never occurred.



Background and Aim

This report describes the surgical procedure for the placement of 80 short spiral implants < 10 mm (SPI and ICE implants, Alpha-bio, Israel) by a progressive step surgical technique in posterior maxilla for single tooth restoration, with a follow-up of 10 years



Conclusion

Spiral implants, even though reduced in length (6,25 mm up to 8 mm), if placed by the surgical technique proposed in this report, promote an excellent bone dislocation in apical direction during implant insertion. The latter provides an increase of exploitable vertical dimension compared to the one measured on radiograms, leading contextually to a longer implant placement and to a very high primary stability of the fixtures. With this report a protocol including spiral implant, progressive steps fixture placement, in addition single screwed hybrid ceramics crowns, is suggestable for the single tooth restoration in the posterior maxilla. This protocol shows good results in term of simplicity, predictability, durability and above all acceptability by the patients of such kind of implant treatments for the posterior atrophic maxilla.

Methods and Materials

Inclusion criteria was a residual vertical bone height, measured on radiograms (CT or CBCT) minimum of 4,5 mm (ranging from 4,5 to 6 mm). No data regarding osteoporosis in females where collected as retained unnecessary. Surgery was flapless in 50 cases with low speed bone drilling with abundant irrigation; no adjunctive bio-material has ever been used; progressive step surgical technique (step one: first drill of 2 mm till to the sinus floor with its slow and atraumatic drilling, providing minimal perforation probed with gauge always with Valsalva test negativity - step two: 2,8 mm drill used only for 2-4 mm – step three: 3,2 mm drill used only for 2 mm in depth) was performed in all cases, without any adjunctive technique, with high insertion torque (up to 50 Ncm). Prostheses were placed 3 months after surgery and were cemented metal-ceramics crowns in 40 cases and screwed hybrid ceramics crowns (Vita Enamic Multicolor) in the remaining cases; 35 implants were 6,25 mm in length and the remaining 8 mm with a diameter of 4,1 mm.

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