24 months

REOSSIFICATION TIME SUGGESTED TO PLACE IMPLANTS AFTER THE REMOVAL OF A LARGE MANDIBULAR CYST : A CASE REPORT

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OBJECTIVES

To describe the healing potential of spontaneous bone regeneration within the residual cavities derived from surgical enucleation of a large mandibular cysts, and the possibility to subsequently rehabilitate the patient with dental implants.

MATERIALS AND METHODS

A 41 year old woman affected by a large (> 40 mm) odontogenic mandibular cyst was treated with a simple surgical enucleation, without placing any grafting material in the residual bone cavity. Clinical and radiographic examinations were conducted 6, 12, and 24 months after surgical treatment in order to verify post-operative re-ossification of the site. The modifications in bone density detected on the panoramic radiographs were defined through a gray scale of 256 tonalities. Twenty-four months later, the patient was rehabilitated with an osteointegrated implant. Clinical and radiographic examinations were performed at 12 and 24 months after prosthetic loading to evaluate the average bone resorption.

Fig 1-4. Pre-operative clinical and radiographic evaluation

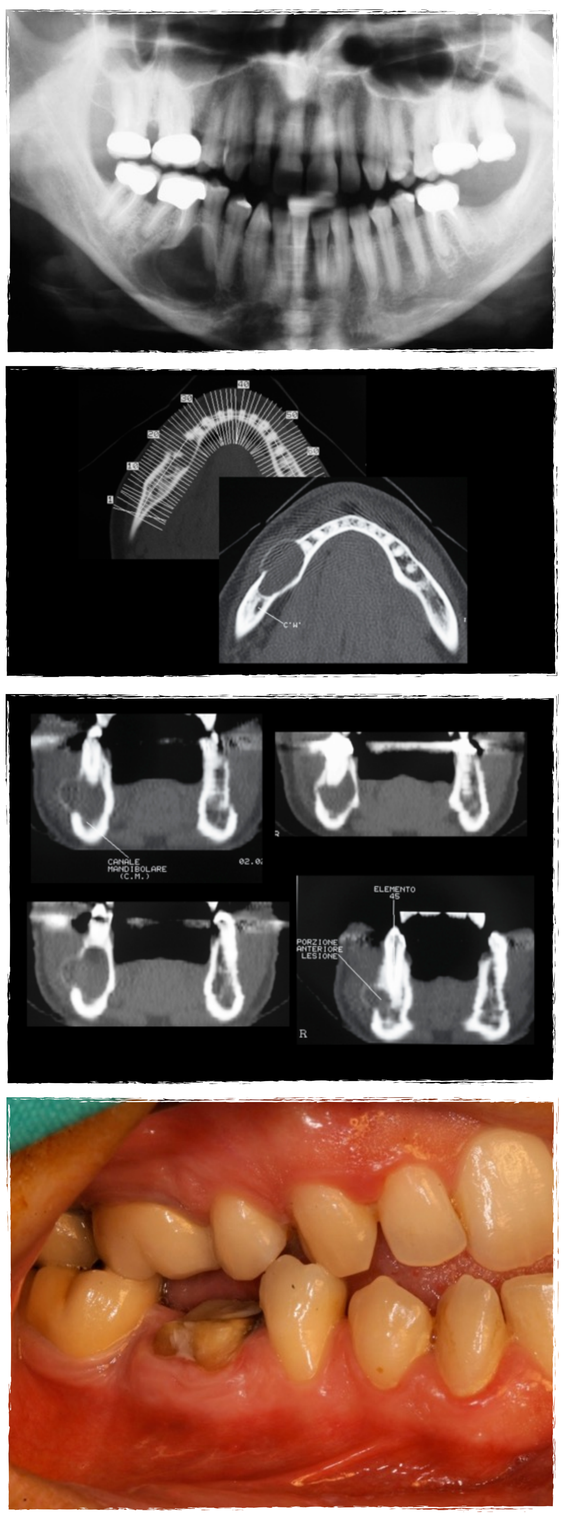


Fig 5-12. Surgical enucleation of the cyst

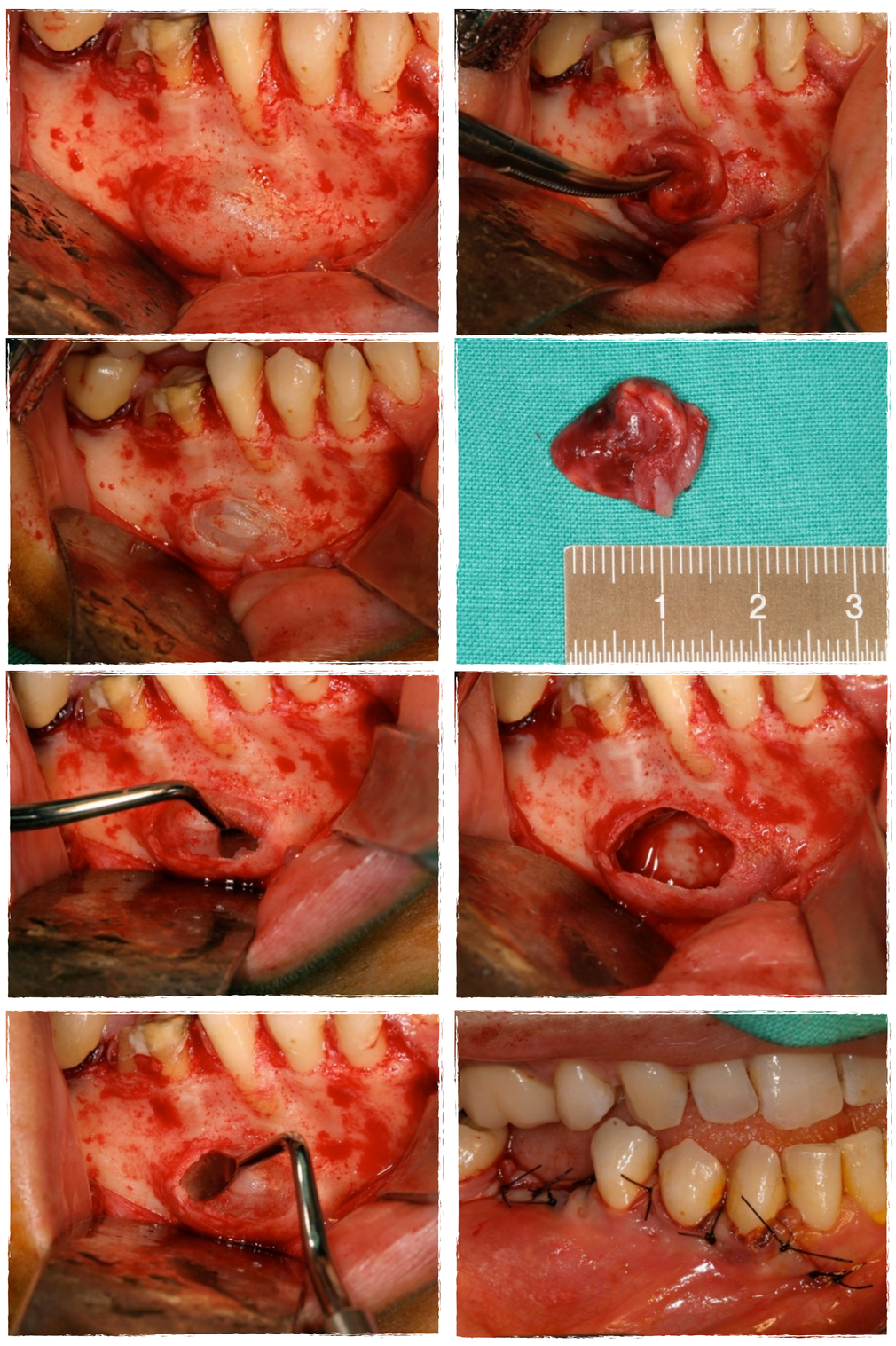
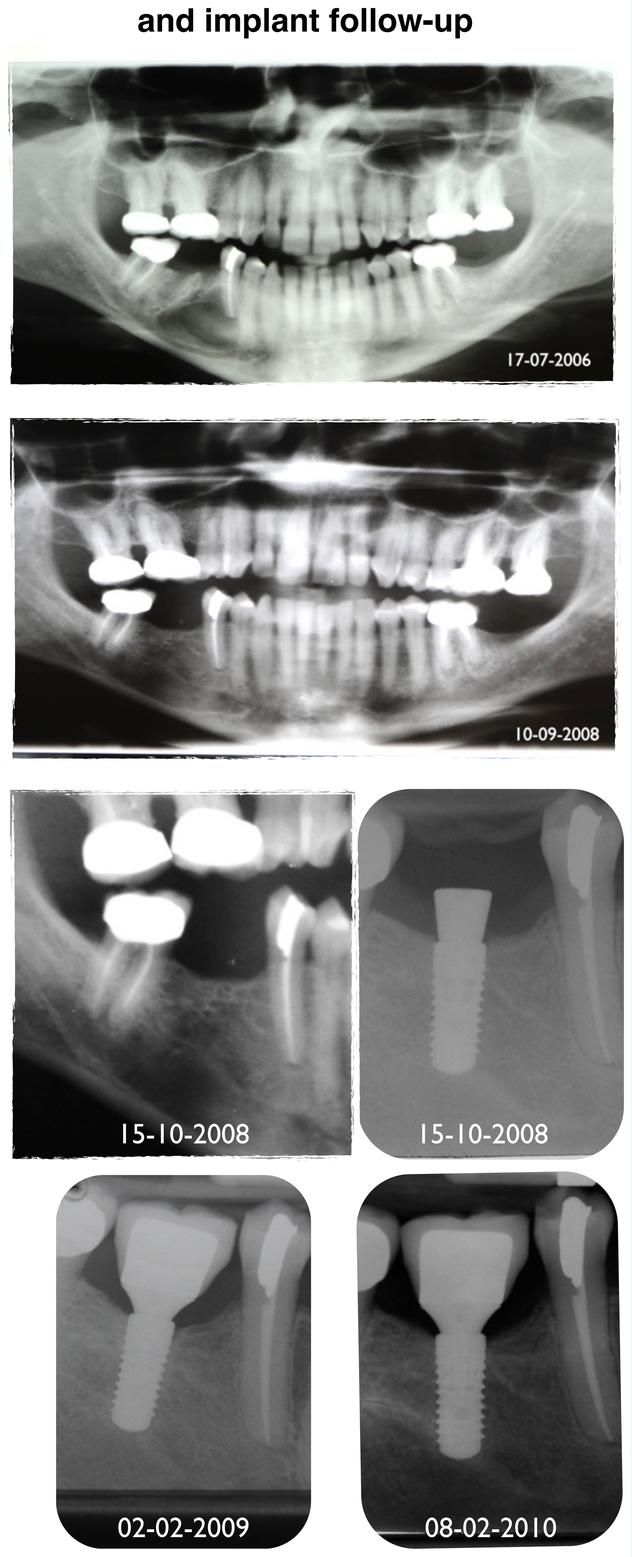


Fig 13-18. Radiographic evaluation of site re-ossification, implant placement, and implant follow-up



RESULTS

At the last recall, both clinical and radiographic evaluations confirmed the complete healing of the lesion through site re-ossification. In addition, the implant rehabilitation fulfilled the success criteria from Albrektsson et al. The computed analysis of the postoperative radiographs allowed to estimate the residual bone deficiency at different recalls, starting from 100% after cyst enucleation, to 91.06% after 6 months, to 52.25% after 12 months, and to 20.95% after 24 months. Concurrently, the estimated increase in bone density through the computed analysis of grey scale tonalities was 20.45% after 6 months, 61.36% after 12 months, and 84.09% after 24 months.

CONCLUSION

Results from this case report suggest that spontaneous ossification of residual bone cavities derived from cyst removal develops even after the enucleation of large lesions and is compatible with subsequent implant placement. Thus, the authors believe no indication stands for the placement of any grafting material inside such bone deficiencies.

References

1. Albrektsson T, Zarb G, Worthington P, Eriksson AR. The long-term efficacy of currently used dental implants: a review and a proposed criteria of success. Int J Oral Maxillofac Implants 1986; 11-25
2. Chiapasco M, Rossi A, Motta JJ, Crescentini M. Spontaneous bone regeneration after enucleation of large mandibular cysts: a radiographic computed analysis of 27 consecutive cases.J Oral Maxillofac Surg. 2000 Sep; 58(9):942-8; discussion 949.