

RESEARCH SUMMARY

Donor-site morbidity after chin bone harvesting

An investigation of post-operative morbidity following chin graft surgery

A. Joshi Br Dent J 2004; 196: 215-218

Aim

The aim of this prospective study was to evaluate the morbidity at the donor site following harvest of chin bone for intra-oral augmentation.

Method

The morbidity experienced by 27 consecutive patients who had undergone chin bone harvesting to augment intra-oral sites prior to implant placement at the Department of Oral and Maxillofacial Surgery, University Dental Hospital of Manchester was evaluated at one week, one, three and 12 months post-operatively.

Results

Nine (33%) patients suffered post-operative morbidity. One patient experienced paraesthesia of the chin and lower lip and a further patient, paraesthesia of the gingivae immediately post-operatively. Both patients had full recovery when reviewed at three months. Two patients experienced pain at the graft site for up to three months post-operatively. Five (18.5%) patients experienced woodiness/ numbness of the lower anterior teeth at the first post-operative visit and at 12 months, two patients continued to have no sensitivity in the lower anterior incisor teeth. None of the patients reported altered contour or change in profile of the chin area. Twenty-three (85.2%) patients had successful grafts with placement of implants thereafter.

Conclusion

It is important for GPs and specialists to make patients aware of the possible morbidities following harvest of bone from the chin.

IN BRIEF

- An investigation of morbidity experienced by patients following chin graft procedures for augmentation of maxilla or mandible.
- When treatment options are being discussed with a patient, it is important for the GP and specialist to fully inform the patient of the possible morbidities that can be experienced at the donor site.
- This paper will inform GPs and specialists who may be considering referral of patients for such treatment.

COMMENT

As tooth replacement using dental implants becomes more popular, so the demand for augmentation of implant sites that are deficient in bone volume becomes an increasingly important consideration. This paper by Joshi investigates the post operative morbidity following chin grafts, and addresses issues involved in treatment planning.

Treatment outcomes for 27 patients were studied prospectively and, unlike most clinical studies, the data collection is consistent and comprehensive. This attention to detail has shown up a relative large number (33%) of patients with post operative morbidity. However, all the patients with sensory loss had full recovery with the exception of two, who at 12 months still showed absence of vital response in the lower anterior teeth. Paraesthesia of the lower lip and chin, and pain in the anterior mandible were symptoms that resolved completely within three months in the four patients who were affected. These figures compare well with other previously reported studies where the data may not have been so meticulously collected. Therefore, this impressively low morbidity taken together with the very high success rates seen in bone grafts harvested from the chin, makes this procedure an attractive option in the planning of pre-implant bone grafting.

The paper also outlines the approach to the anterior mandible from the labial sulcus. Care must be taken when approaching the mental nerve from this direction as the nerve courses forwards through the soft tissues and is thus vulnerable as the nerve trunk is encountered before the foramen (unlike the more frequently used approach from above, although Joshi describes leaving a 5 mm height of the labial cortex above the lower border, it is sometimes helpful to include the curvature close to the lower border within the graft thus giving a 'J' shape in cross section of the block which can be exploited in augmenting the height, as well as the width of the maxillary alveolus. This additional bone removal does not make any difference to the post operative shape of the chin even without replacement of the missing bone with Bio-Oss and a membrane. Joshi's technique of filling the donor defect is therefore questionable in terms of efficacy.

The procedure described is simple, impressively successful and relatively free of surgical morbidity in the right hands. This paper therefore enhances the evidence base for the chin as a donor site of choice when a limited amount of bone volume is required.

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doi:10.1038/sj.bdj.4810985