Dental implants in maxillary reconstruction using osteocutaneous free fibula flap – a 10 year follow up

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Abstract

Background: Dental implant placement in osteofasciocutaneous free fibula flaps (OSCFFF) presents a special clinical challenge in implantology. Because of the structural diversity, drilling into OSCFFF can be demanding. Often it is difficult to achieve primary stability of the implants, and therefore pre-surgical implant placement planning is necessary.

Aim: To show advantages and the importance of pre-surgical planning in patients in need for mid-facial reconstruction using OSCFFF.

Materials and methods: A female patient had undergone total medial maxillary reconstruction 10 years ago, due to the gingival squamous cell carcinoma. Four 3.5 x 11 mm dental implants (Ankylos Dentsply Implants, Germany) were placed in the regions of the second incisors and first premolars. Due to the absence of hard palate tissue, a bar retained reduced total prosthesis was placed. Patient was satisfied with the end-result and after 8 years she came to replace the prosthesis

Results: After 10 years, satisfactory functionality and esthetics of the implant-prosthetic reconstruction in OSCFFF graft were observed.

Conclusions and clinical implications: OSCFFF presents a valuable technique for major facial reconstructions. The implant the healing period should be extended from nine to twelve months. Vestibuloplasty is recommended before placing the dentures. Dental implant placement in OSCFFF presents a valuable solution for major dentoalveolar defects.

Methods and Materials

A female patient had undergone total medial maxillary reconstruction 10 years ago, due to the gingival squamous cell carcinoma. Radiotherapy had not been performed and two years after she had no signs of recurrence. Four 3.5 x 11 mm dental implants (Ankylos Dentsply Implants, Germany) were placed in the regions of the second incisors and first premolars (Pictures 1 & 2). One year after, vestibuloplasty was performed and four oseointegrated implants were opened. Due to the absence of hard palate tissue, a bar retained reduced total prosthesis was placed. Patient was satisfied with the end-result and after 8 years she came to replace the prosthesis. A MSCT was taken as part of a routine control (Picture 3).

Picture 1. Dental implants placement

Picture 2. Panoramic x-ray taken 4 months after implant placement

Picture 3. MSCT 5 years after total medial maxillary reconstruction

Results

After 10 years, satisfactory functionality and esthetics of the implant-prosthetic reconstruction in OSCFFF graft were observed (Pictures 4a,4b & 5).

Picture 4a and 4b. Prosthesis on a prosthetic bar: a 10 year follow-up

Picture 5. A ten year follow up of implant-prosthetic reconstruction in OSCFFF

Background and Aim

Dental implant placement in osteofasciocutaneous free fibula flaps (OSCFFF) presents a special clinical challenge in implantology. Extensive vertical height loss caused by bone resorption, with a consequential width and height reduction of the "alveolar ridge", remains a frequent problem and is often considered a major drawback. Because of the structural diversity, drilling into OSCFFF can be demanding. Often it is difficult to achieve primary stability of the implants, and therefore pre-surgical implant placement planning is necessary. As patients in need of OSCFFF represent a therapeutically demanding group of patients, even when satisfying dental implant osseointegration is achieved, it is not easy to obtain a satisfactory long-term oral rehabilitation.

The aim is to show advantages and the importance of pre-surgical planning in patients in need for mid-facial reconstruction using OSCFFF. We present a 10 year follow-up OSCFFF reconstruction case in which the importance of interdisciplinary cooperation between maxillofacial surgeons, oral surgeons and prosthodontists is shown.

Conclusion

OSCFFF presents a valuable technique for major facial reconstructions. After inserting dental implants in OSCFFF reconstructed jaws, the healing period should be extended from nine to twelve months. Vestibuloplasty is recommended before placing the dentures. Dental implant placement in OSCFFF presents a valuable solution for major dentoalveolar defects.

References

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