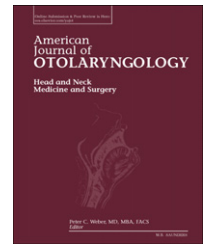


Available online at www.sciencedirect.com

ScienceDirect

www.elsevier.com/locate/amjoto

How we fix free flaps to the bone in oral and oropharyngeal reconstructions[☆]

Zoran Marij Arnež, MD, PhD^a, Federico Cesare Novati, MD^a, Vittorio Ramella, MD^a, Giovanni Papa, MD, PhD^a, Matteo Biasotto, DDS, PhD^b, Annalisa Gatto, MD^c, Pierluigi Bonini, MD^c, Margherita Tofanelli, MD^{c,*}, Giancarlo Tirelli, MD^c

^a Department of Plastic and Reconstructive Surgery, Cattinara Hospital, University of Trieste, Strada di Fiume 447, I-34149, Trieste, Italy

^b Division of Oral Medicine, Department of Dental Sciences, Piazza dell'Ospitale 1, University of Trieste, Trieste, Italy

^c Department of Otorhinolaryngology and Head and Neck Surgery, Cattinara Hospital, University of Trieste, Strada di Fiume 447, I-34149, Trieste, Italy

ARTICLE INFO

Article history:

Received 2 June 2014

ABSTRACT

Purpose: The use of suture anchors has been described in orthopedic, hand, oculoplastic, temporomandibular joint and in aesthetic surgery, but no study reports the use of the Mitek® anchors (Depuy Mitek Surgical Products, Inc. Raynham, Massachusetts) for fixing the free flaps used in oncologic oral and oropharyngeal reconstruction.

Materials and Methods: In this prospective non-randomized study, 9 patients underwent surgical resection of oral or oropharyngeal cancer followed by a free flap reconstruction; mini anchors were used to fix the flap directly to the bone. We collected data regarding the patients, the tumor stage, the surgical procedure, the radiotherapy and the number of anchors used.

Results: The average follow-up was 28 months (range 24–38). We observed no complications with trans-oral, sub-mandibular and trans-mandibular approach in both oral and oropharyngeal reconstructions. All anchors became osteo-integrated and no complications occurred after radiotherapy.

Conclusions: In our opinion this device favors free flap adhesion to the bone. We registered no postoperative complications related to the use of the device which looks suitable for use in irradiated tissues. The radiotherapy did not cause any long-term complications related to the use of Mitek® mini bone anchors.

© 2015 Elsevier Inc. All rights reserved.

1. Introduction

The suture anchors are used to fix soft tissues to the underlying bone. Their use has been extensively reported in orthopaedic [1–5] oculoplastic [6,7] and aesthetic surgery [8].

Also, suture anchors have been used to fix pedicle flaps to the sacrum after resection of sacral pressure sores [9–11] and in surgical treatment of decubital ulcers [12,13]. Our literature search, however, failed to identify any study describing the use of this particular type of suture anchors – mini Mitek®

[☆] Disclosure statement: The authors declare that there is no conflict of interest.

* Corresponding author at: Strada di Fiume 447, 34149 Trieste, Italy. Tel.: +39 3402927827; fax: +39 0403994180.

E-mail address: margheritatofanelli@hotmail.com (M. Tofanelli).

anchors (Depuy Mitek Surgical Products, Inc., Raynham, MA) to fix free flaps in oral and oropharyngeal oncologic reconstructions.

Dean et al. were the first to describe the use of a similar type of Mitek® bone anchors to fix the muscles of the floor of the mouth (FOM) to the mandible after the mandibular-lingual-releasing approach to oral and oropharyngeal cancers but, in their experience, there was no need for surgical reconstruction by free flaps [14].

Reconstructive surgery following resection of oral and oropharyngeal cancer is suggested in cases when, after cancer resection, the functional and esthetic results are poor but can be improved by the use of a free flap. When the surgical resection of the oral cancer removes a significant part of the tongue, the FOM or the cheek or involves a segment of the mandible, the reconstructive surgery becomes mandatory.

Large and deep defects of the tongue or large defects of the FOM, gum and oral mucosa, require free tissue transfer [15]. The selection of a particular free flap depends upon the recipient defect: the length of the mandibular defect and the dimensions of the defects of oral mucosa and skin.

The free tissue transfer is required when the resection sacrifices a significant part of the tongue base or the tonsillar region including the middle pharyngeal constrictor muscle.

Oral and oropharyngeal tumors require surgical resection with wide macroscopic tumor-free margins (1.5–2 cm). For this reason, the excision often reaches the mandible or the hard palate including also the overlying soft tissues. In order to obtain a safer oncologic resection, also the periosteum is likely to be removed and in these situations the free flap fixation to the bone becomes more laborious. The locations that more frequently present these problems are the FOM, the alveolar crest, the cheek, the retromolar trigonus and the tonsillar region.

Appropriate positioning and firm securing of the free flap to the bone are prerequisites for a good final result of the reconstruction avoiding the most undesirable complications: salivary fistula, suture dehiscence, flap detachment with exposition of the underlying bone and infections. This could result after dehiscence of an intraoral suture caused by the gravitational pull on the flap; it has also to be considered the possibility that the flap does not adhere to the exposed bone.

Further, advanced tumors usually require postoperative radiotherapy. In such cases the surgical fixation of the flap has to tolerate well the postoperative radiotherapy [15].

The aim of this paper is to analyze the 9 cases in which the Mitek® mini suture anchors were used for reconstruction of oral and oro-pharyngeal oncologic defects fixing free flaps directly to the bone.

2. Patients and methods

In this prospective non-randomized study, from July 2010 to December 2011, 9 patients underwent surgical resection of oral or oropharyngeal cancer followed by a free flap reconstruction of the defect at the Cattinara Hospital in Trieste, Italy. Written informed consent was obtained from all patients and this work was authorized by local Hospital Directorate. One or more mini anchors (Fig. 1) were used in

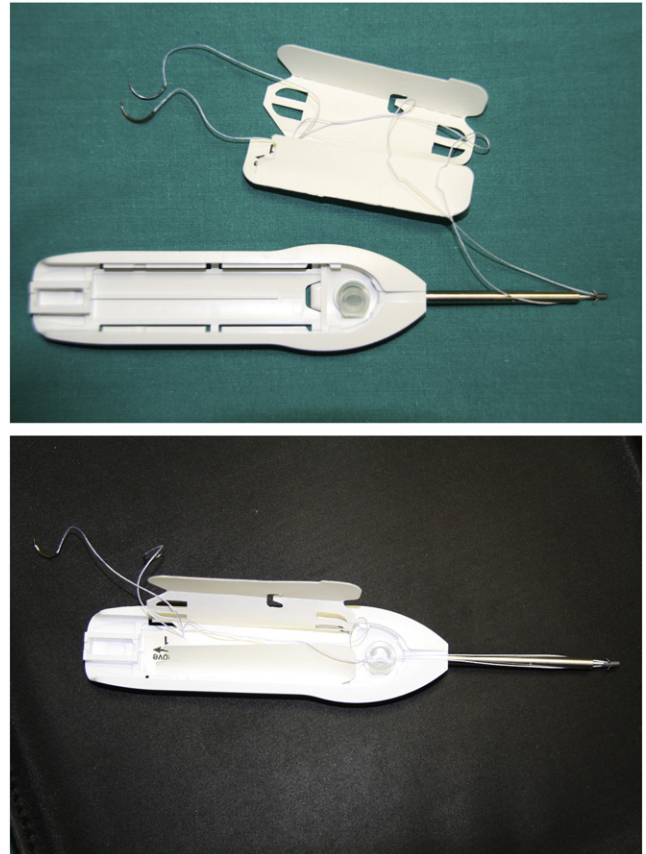


Fig. 1 – The mini Mitek® device. The anchor is composed of a titanium alloy shaft. The cylindrical body is 1.8 mm large and 5.0 mm long and is provided with a pair of superelastic nickel-titanium arcs. The anchor is threaded with 2.0 nylon or mersilene suture and loaded onto the end of the Mitek inserter which protected the suture ends and needles during the insertion process.

this group, to anchor the free flap directly to the bone. We collected the data regarding the patient, the tumor, the surgical procedure and the number of mini anchors used.

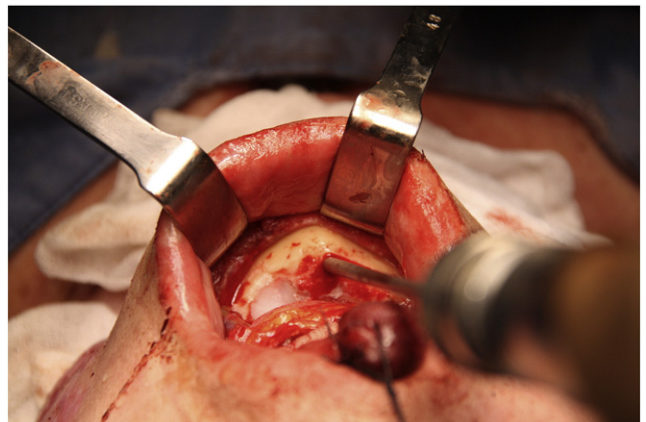


Fig. 2 – The drilling bone process.

Download English Version:

<https://daneshyari.com/en/article/4103191>

Download Persian Version:

<https://daneshyari.com/article/4103191>

[Daneshyari.com](https://daneshyari.com)