

**Title: Immediate obturator stabilization (ISO) in severely atrophic edentulous maxilla: suspension wiring technique. (short communication)**

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## Short communication

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The treatment of malignant neoplasms of the hard palate comprises radical surgical resection. Defects of the maxillary sinus, hard palate and upper alveolar ridge may leave the patient with significant postoperative speech and swallowing problems[1]. Several maxillectomy defect classifications have been developed to ascertain the most effective means of rehabilitation for each type of defect . The defects can be repaired using fasciocutaneous or bone-containing free flaps or local advancement flaps[2]. A removable palatal obturator is a viable alternative when harvesting a flap is not feasible[3]. A transparent removable obturator allows the direct inspection of the surgical defect for the early detection of local recurrence[4]. An immediate surgical obturator (ISO) can be placed at the time of surgery to restore the oral contour and support the lip and cheek so that the patient can almost immediately speak and swallow effectively avoiding the nasogastric tube[1]. Two months later, the ISO is converted into an *interim* obturator, modified to optimize the seal between the healed tissues. The latter can be fixed to the remaining teeth with surgical wire or retained with screw-shaped titanium implants in the edentulous patients[1]. The problem arises when an edentulous patient has severe bone atrophy that impedes the immediate implant insertion and does not allow for proper stabilization and retention of the prosthesis. In these cases we suggest to fix the ISO using the craniofacial wiring suspension technique used for Le Fort fractures (Figure 1). In particular, once we have performed a subtotal maxillectomy with a midfacial degloving approach, we perform an upper blepharoplasty incision and split the upper orbicularis muscle to expose and elevate the intra- and extra- lateral orbital periosteum. To prepare the tunnel path for the wires, the exposed bone of the orbital frame is pierced close to the frontozygomatic suture to obtain a 1 mm hole and a 0.5 mm wire is placed through the pilot hole, passed beneath the zygomatic arch and through the infrazygomatic space to reach the buccal vestibulum. This procedure is performed

bilaterally. The last hole in which the third steel wire has to pass through is made in the anterior nasal spine that has been exposed with the midfacial degloving approach (Figure 2). The wires are secured to the ISO after a radiographic check of their proper positioning (Figure 3). Fifty days after surgery, the wires are removed, the healing process of both soft and bony tissues has been guided by the ISO and a new interim obturator with a reduced hollow bulb is created to fit the defect, now decreased in size. The definitive obturator can be placed six months later. This technique to fix the ISO offers some advantages[3]: the possibility to restore the swallowing ability the day after surgery avoiding the use of the nasogastric tube, thus decreasing the time of rehabilitation. In our opinion this technique is an effective solution to restore the palatal competence and function in severely atrophic edentulous maxillae where other points of anchoring are prevented.

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## **Figures legends**

Fig. 1. Representation of the suspension wiring technique.

Fig. 2. Fixation of the obturator: the appliance is secured with the third steel wire in the anterior nasal spine that has been exposed with the midfacial degloving approach.

Fig. 3. Radiographic check after surgery: anterior-posterior x-ray view of the skull.





