

# Immediate Function of Temporomandibular Joint After Total Resection and Reconstruction

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Two patients with recurrent parotid gland carcinoma required subtotal petrosectomy and infratemporal fossa type C approach. To achieve en bloc resection, the ascending mandibular ramus and the entire temporomandibular joint, including the adjacent temporal bone, were removed. An original technique for immediate reconstruction of the infratemporal region, including the glenoid fossa and the ramus of the mandible, is described. Rigid fixation, as well as good functional and aesthetic results, was achieved with autologous calvarial bone and full-thickness rib grafts, allowing the patients to mobilize their jaw very rapidly.

*Key Words:* Immediate function after tumor surgery, TMJ reconstruction, autologous graft, infratemporal fossa approach, petrosectomy

To be efficient, oncological surgery is often mutilating. When the base of a skull is invaded by cancer, the surgical approach necessary for adequate exposure [1,2] and tumor resection often results in cranial nerve deficits, neurological impairment, and disfigurement. Postoperative morbidity can be minimized by reconstructing the removed and often vital structures. The concept of reconstruction requires re-establishing shape and function as correctly as possible.

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Although the choice of immediate versus delayed reconstruction is open to debate, in certain patients with malignant tumor recurrence, the acceptable limits of craniofacial resection are often reached, and further surgery is no longer considered. The reconstruction can thus be immediate and as complete as possible.

We present an original technique of immediate reconstruction of the petrous portion of the temporal bone and of the mandible. This method was used in two cases after en bloc surgical resection of recurrent parotid carcinoma requiring subtotal petrosectomy, which included the glenoid fossa, resection of the mandibular ramus and condyle, and resection of an infratemporal fossa tumoral extension. Although resection of the ascending ramus is mentioned as a possible extension of infratemporal type C approach [1], it does not appear to be used frequently [1,2]. One reason is the lack of an appropriate reconstructive technique.

## PATIENT 1

### History

A 58-year-old woman underwent total right parotidectomy in 1994 for a myoepithelial variant of a high-grade adenocarcinoma. The facial nerve was invaded by tumor and was sacrificed. A cable graft using the sural nerve was performed with progressive restoration of facial function (grade III after the House-Brackmann classification [3]). Postoperative radiation therapy was administered, delivering 60 Gy to the tumor bed and the homolateral neck. During routine follow-up 10 months after the initial surgery, the patient complained of right ear fullness. A polypoid mass was noted, the biopsy of which was compatible with an adenocarcinoma, within the external auditory canal. Computed tomographic (CT) scan and magnetic resonance imaging (MRI) (Fig

