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Lip-splitting in transmandibular resections: Is it really necessary? ☆

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Summary Mandibular resection approach (*Commando* or *Composite resection*) is one of the fundamental techniques for oral and oropharyngeal large tumour resection. We reviewed the charts of patients who underwent a transmandibular resection for an oral and/or oropharyngeal cancer between 1980 and 2002. Of 700 patients who underwent a mandibular resection for cancer, 332 had been operated without lower lip splitting. A mono or bilateral en-block neck dissection was always performed, except in cases of relapses after a prior surgical treatment with neck dissection. We repaired 307 patients with flaps (pedicled or free flaps, with or without bone). Unsplitting of the lip never complicated resection and reconstruction. Furthermore the procedure was time sparing, as we avoided haemostasis and suture of the lip. The cosmetic results were better than those obtained by traditional technique. We used a non-lip-splitting technique also for *pull-through*, *marginal mandibulectomy* and, sometimes, for *mandibular-swing* approaches. In the latter case, the technique has some advantages and disadvantages and must be applied according to circumstances. We can conclude that lip-splitting in transmandibular resection for oral and oropharyngeal tumours is not necessary.

Introduction

Martin wrote: ''After completion of the neck dissection ... the lip and chin are split in the midline and the cheek reflected laterally''. Since then on, almost all authors took

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for granted this sentence. We want to demonstrate that it is possible to perform this surgery without lip splitting. Resection with clean margins is the main goal in surgical treatment for malignant tumours of the head and neck, and, of course, also for large tumours of the mouth and/or oropharyx involving the mandible. The resection must be wide and en-block with the cervical nodes, if possible. Reconstruction must be the best possible, including both soft tissues and bone. A lot of changes in surgical technique to achieve these goals are available and many papers and books have been published on this topic.[1–6]

In all these papers we may find a constant: *the split of the lower lip*.

The purpose of our study is to demonstrate that the splitting of the lower lip in transmandibular resection (*Commando* or *Composite resection*) is nearly always unnecessary.

Materials and methods

We reviewed the charts of patients who underwent a surgical resection of large malignant tumours of the mouth and/or oropharynx at the Istituto Nazionale per lo Studio e la Cura dei Tumori di Milano (National Cancer Institute) between 1980 and 2002. We took into consideration, in particular, the segmental resections of the mandible. We excluded mandibular resections for bone tumours or for tumours of the skin involving the mandible.

Until 2000, two different surgical teams operated in the Head and Neck Department of our Institute: in case of composite resection the first team nearly always split the lip, and the second always used a non-splitting approach.

Surgical technique without lower lip splitting

Our most frequent skin incision for a transmandibular resection with homolateral neck dissection is shown in Figure 1. The vertical branch extends from the mastoid to the clavicle and the horizontal one is perpendicular to the first, and reaches the submental region. In case of bilateral neck dissection, we use the same incision bilaterally. Neck dissection (radical, modified radical or selective, mono or bilateral) is performed from the bottom up, according to normal oncologic rules. Reaching the mandible region, we isolate and preserve the marginal branch of the facial nerve by cutting the facial vessels. The periosteum of the outer face of the mandible (when it is not involved by the tumour) is incised and detached from the bone. It is possible to cross the midline, reaching the controlateral mental foramen, preserving the mental nerve.

Transorally an incision is made on the mucosa of the alveolar ridge (in edentulous patients), or in the gengival fornix when teeth are present. If the tumour extends laterally to soft tissues of the cheek, the incision of the mucosa must be at a suitable distance from the tumour, according to normal rules for radicality.

A tunnel is thus obtained, below the non-involved soft tissues of the lip and cheek. If the masseter muscle may be preserved, it is detached from the ascending branch of the mandible, as upward as it is necessary, reaching the sigmoid incisure or more (if also the condyle must be resected). The soft tissues of the cheek, the masseter muscle and the parotid gland, reflected upward and laterally display a perfect exposure of the hemimandible and of the tumour (Fig. 2). The mandible osteotomies are performed in the desired position (Fig. 3). Usually, a section at the mental foramen and another just below the sigmoid incisure are suitable for tumours of the lateral tongue and floor of the mouth, tonsillar region, and base of the tongue. By sectioning the mandible, a gentle pull-down allows a perfect view on the whole oral cavity and oropharynx. In this way the resection of the tissues involved by the tumour may be performed as in lip-splitting approach (Figs. 4 and 5). When the tumour involves the tonsillar fossa, extending upwards to the soft palate, there is no problem in the incision of the oropharingeal mucosa and in the resection of the most part of the pterygoid muscles (Fig. 6). It is also possible to resect the pterygoid plate, succeeding in managing the infratemporal fossa. Also the upper alveolar process and the contralateral soft palate can be resected without any problem (Fig. 7). Vision and manipulation of the operative field are as good as in lip-splitting approach.

Closure is rarely possible by direct suture of the mucosa after so large resections (Figs. 8 and 9). In most cases pedicled or free flaps must be used to reconstruct soft tissues

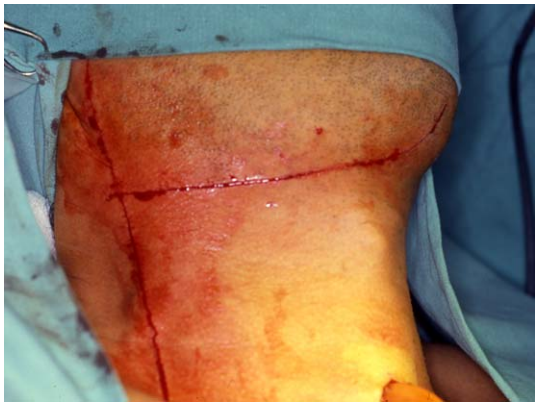

Figure 1 Our most frequent skin incision for a transmandibular resection with homolateral neck dissection.

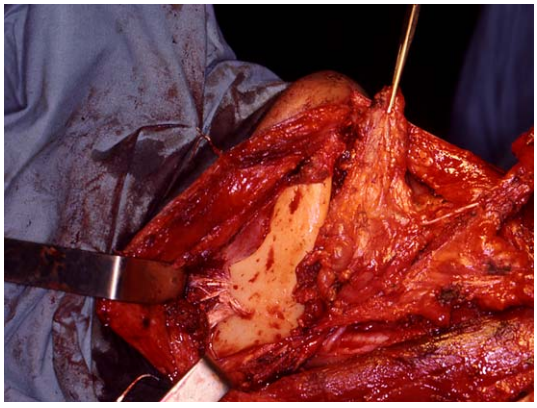

Figure 2 The soft tissues of the cheek, the masseter muscle and the parotid gland are reflected upward and laterally displaying a perfect exposure of the hemimandible.