NEUROLOGICAL PICTURE

Clinical test discloses marginalis mandibulae branch lesion of the facial nerve

The extratemporal branches of the facial nerve display a considerable variability in number, courses, ramifications and anastomoses. On the basis of the extensive parotid plexus, isolated lesions in the cheek region can entail complex pareses of the perioral and buccal muscles. Therefore, occasionally, it may be difficult to distinguish between peripheral and supranuclear palsies.

By way of contrast, the ramus marginalis mandibulae n. facialis takes a relatively separate route (fig 1). It leaves the anterior-inferior portion of the parotid gland near the angle of the jaw and curves down to the submandibular gland. Typically consisting of up to four branches, the nerve follows the inferior border of the basis mandibulae to innervate the lower lip muscles.¹ A local nerve injury mainly results in a depressor labii inferioris paresis, whereas the involvement, for example, of the mentalis muscle is not important.

Lesions of the marginal mandibular nerve give rise to a characteristic clinical appearance. As the buccal and zygomatic branches are spared, the facial expression and nasolabial folds in the static position are symmetrical. In the usual function tests, the oral movements, including the zygomaticus-type smile (fig 2), seem mostly balanced. The weakness in the depressor labii inferioris may be detected in a disturbed full denture-type smile (fig 3), because patients cannot expose their lower incisors on the paretic side and the lip distorts towards the healthy one. The disorder becomes clearly evident by opening the mouth wide (fig 4). This manoeuvre is not routinely included in investigations on the facial nerve, but will show unmistakable findings.

Because of its long course and superficial position, the ramus marginalis mandibulae is prone to be damaged in the area of the parotid gland, mandibular angle and superior lateral neck, mainly during surgical procedures.² Accordingly, most of the 26 pareses that we have seen from 1997 to 2004 resulted from iatrogenic injuries. Transient neuropathies were caused by carotid endarterectomy (n = 16). Paralysis persisted after neck dissection (n = 6), operation of the malignant tumour (n = 1) or trauma (n = 1). Rarely the nerve disorder occurred spontaneously as the first and only sign of a malignant neoplasm in the submandibular region (n = 2).

Figure 1 Terminal branches of the facial nerve. (1) Rr fronto-temporales; (2) Rr zygomatici; (3) Rr buccales; (4) R marginalis mandibulae; and (5) R colli.

Figure 2 Patient with left-sided ramus marginalis inferior paresis after carotid endarterectomy. Zygomaticus-type smile, disguising the disturbance.

Two more patients, who showed the same clinical picture, had congenital aplasias of the lower lip muscles, which should be differentiated from paralyzes in a narrower sense.

Pareses of the marginal mandibular branch are of minor functional consequence. Prompt differentiation from a supranuclear lesion, however, may be essential in the event of surgical complications. The typical presentation of the disturbance verifies the peripheral kind of the lesion merely by clinical investigation.

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Figure 3 Full denture-type smile.

Figure 4 Manifestation of paresis by opening the mouth.

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Patient consent was obtained for publishing figs 2–4.

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