



## Case report

## Ear pain following temporomandibular surgery originating from the temporomandibular joint or the cranial nervous tissue? A case report

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## ABSTRACT

A patient presenting with local pain and limitation of movement in the temporomandibular region following surgery of the left temporomandibular joint (TMJ) is described. Manual techniques like distraction of the TMJ combined with motor control exercises to restore TMJ function were not sufficient to relieve the patient's symptoms and her orofacial functions. However, during manual assessment and treatment of cranial nervous tissue, in this case the auriculotemporal nerve and its interface, pain was relieved and orofacial functions improved.

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## 1. Introduction

In the past decades, the incidence of craniofacial pain has increased significantly. [Locker and Slade \(1998\)](#) investigated facial pain other than the local craniomandibular area and concluded that 27% of patients experienced facial pain only, 13% experienced pain and discomfort and 4.9% experienced severe, acute facial pain. However, it remained unclear whether the symptoms were dental, craniomandibular or facial in origin. [Kohlmann \(2002\)](#) found the prevalence of craniofacial pain in German adults to be between 7% (for 7 days) and 16% (for 12 months), concluding that one out of six adults suffers from craniofacial pain for at least one week, once a year.

Craniofacial pain may be difficult to diagnose due to the many etiological factors that can be present. [Mongini \(1999\)](#) stated that multiple etiological factors may be present in one patient and that a single etiological factor may have different consequences in different patients. This makes it difficult, for the clinician, to appreciate these factors in a patient. Perhaps the neuro-musculoskeletal therapist can try to treat this non-specific group of patients.

This case report describes a patient with local burning pain following a surgical intervention of the left temporomandibular

joint (TMJ). An arthrogenic treatment approach did not provide relief of symptoms. With a neurodynamic approach such as mobilization of the mechanical interface and treatment directed at the tissue mobility of the auriculotemporal nerve (ATN), the patient became free of symptoms.

## 2. Subjective examination

A young woman was referred to the physiotherapy practice by the oral and maxillofacial surgeon. She underwent surgery of the left TMJ (condylar shave) 12 weeks prior to her initial visit. The indication for surgery was severe hypertrophy of the condyle leading to facial asymmetry, pain and complaints of fatigue at the end of the day. The surgical procedure was uncomplicated. The facial asymmetry was partially reduced.

Postsurgical complaints were intermittent, nagging pain in the left ear region and stiffness when opening the mouth during yawning. She experienced a non-painful clicking on the left side when closing her mouth. Shifting the mandibula to the right side felt stiffer than to the left. The nagging pain was also present after lying on the left side for 4 h, but after switching sides the pain disappeared immediately. The pain woke her up about 2–3 times a week and persisted two days afterwards as a background ache. A local intermittent burning pain at the superior aspect of the scar ([Fig. 1](#)) was provoked when she tied her hair up.

The complaints gradually increased during the first six weeks after surgery, and were stable over the last six weeks. There were

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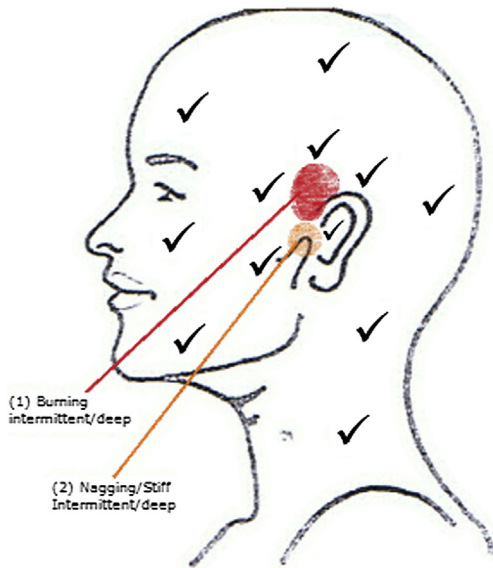


Fig. 1. Body chart presenting distribution of symptoms.

no neurological signs. She did not use any medication and considered her general health to be good. She underwent six physical therapy sessions after the surgery consisting of general distraction of the left TMJ and motor control exercises of the head and neck region, without success.

### 3. Physical examination

On commencing the physical examination, the patient reported no present pain (PP). Ventral observation revealed facial asymmetry (Fig. 2). The distance from the left eye corner to the left corner of the mouth was 1.5 cm larger than the right side. Intra-oral inspection showed an increased wear of the lower premolars on the right side and a lateral deviation of the mandibula of two mm to the right side (cross bite). The scar tissue at the part superior of the tragus was slightly more red (in web version) (Fig. 3). A small thickened and tender point in the scar tissue was noticed on palpation.

On active opening, a deviation to the left was noticed and when correcting this, the patient experienced local pain at the active end-of-range (EOR) of 42 mm. Active protraction (5 mm) and retraction (3 mm) were found normal. Range of motion (ROM) of the laterotrusion to the left was 12 mm and painless with overpressure. Right laterotrusion had a range of 4 mm and the feeling of local stiffness of the left TMJ was reproduced at the active EOR and after 5 s also the yawning pain (5/10) was reproduced. Testing of the passive accessory movements of the TMJ in supine position revealed that the transverse-lateral movement of the left mandibular condyle was abnormal. An increased resistance was noticed compared with the other side and provoked her pain especially when upper cervical flexion was added (Figs. 4 and 5). Screening of the upper cervical spine showed no abnormalities.

Neurological examination, consisting of sensibility tests in the mandibular nerve area, masticatory muscle function and jaw reflex, was normal. The neurodynamic test for the left mandibular nerve (MNDT), as proposed by Von Piekartz (2007), revealed a passive laterotrusion of the mandibula to the right side of 2 mm (Fig. 6). When extending the upper cervical spine, the ROM increased to 5 mm of right laterotrusion. However, no reproduction of symptoms was possible. In the EOR position for the left mandibular nerve, palpation of the left ATN provoked a local sharp pain.

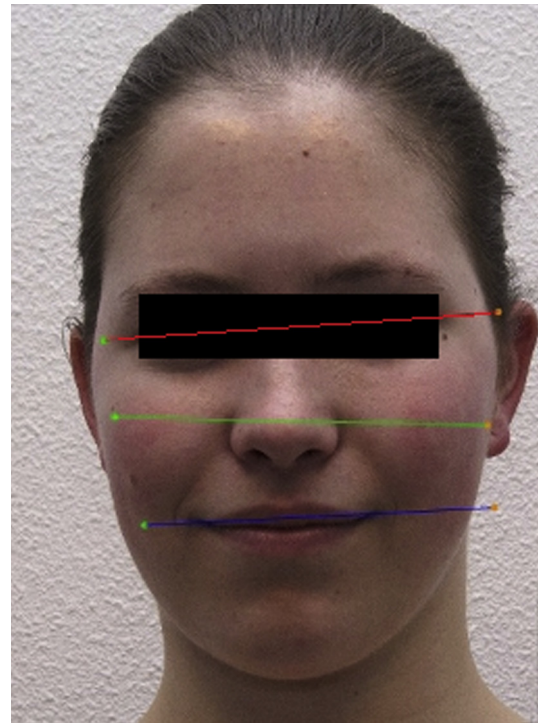


Fig. 2. Ventral view with lines indicating the facial asymmetry.

Extension of the neck made the palpation painless. The right MNDT and palpation of the right ATN were found normal.

### 4. Clinical interpretation

The neuropathic character of a damaged nerve, in this case after TMJ surgery, may be related with an abnormal impulse generating



Fig. 3. Scar tissue at the superior aspect of the left ear.

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