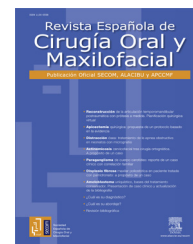


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Clinical report

Surgical disaster in temporomandibular joint: Case report

Guilherme Machado De Carvalho^{a,*}, Alexandre Caixeta Guimarães^a, Fábio Vega^b,
 Cássio Iwakura^c, Jorge Rizzato Paschoal^d, Leopoldo Nizam Pfeilsticker^e

^a Department of Otolaryngology, Head and Neck Surgery, University of Campinas (Unicamp), Sao Paulo, Brazil

^b Complejo Hospitalario Metropolitano Dr. Arnulfo Arias Madrid (CHDAAM, Panamá), University of Campinas (Unicamp), Sao Paulo, Brazil

^c Institute of Radiology/INRAD Hospital of the Medical School of USP/SP, Neuroradiology Service of Unicamp, Department of Radiology, University of Campinas (Unicamp), Sao Paulo, Brazil

^d Otolaryngology and Lateral Skull Base Service, Department of Otolaryngology, Head and Neck Surgery, University of Campinas (Unicamp), Sao Paulo, Brazil

^e Craniomaxillofacial Surgical Service, Department of Otolaryngology, Head and Neck Surgery, University of Campinas (Unicamp), Sao Paulo, Brazil

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ABSTRACT

Background: Temporomandibular-ankylosis brings extensive limitations on the patient quality of life. Surgical treatment is frequently necessary associated with a continuous rehabilitation. The anatomy of this region and potential complications of this surgery must be thoroughly known to avoid iatrogenic injuries.

Case presentation: A young patient underwent surgical treatment of congenital bilateral ankylosis with disastrous consequences such as facial palsy, deafness and cerebrospinal leaks on the right side related to intraoperative trauma involving structures of the external, middle and inner ear.

Conclusion: Since there is no corrective treatment for this type of injuries, the craniomaxillofacial surgeon and other professionals who carry out interventions of this nature need perfect knowledge of the anatomy of the temporal bone and lateral skull base, taking into account the risk of surgical disasters like the one here reported.

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Catástrofe quirúrgica en la articulación temporomandibular: informe de caso

RESUMEN

Fundamento: La anquilosis temporomandibular se asocia a importantes limitaciones de la calidad de vida del paciente. Con frecuencia, es necesario un tratamiento quirúrgico asociado a una rehabilitación continua. Para evitar las lesiones yatrogénicas, se requieren conocimientos exhaustivos de la anatomía de esta región y de las complicaciones potenciales de la cirugía.

Palabras clave:

Articulación temporomandibular

Oído

Lesiones yatrogenas

* Corresponding author.

E-mail addresses: guimachadocarvalho@gmail.com (G. Machado De Carvalho), alecgxl2@hotmail.com (A. Caixeta Guimarães), fabiovega17@gmail.com (F. Vega), ci37@hotmail.com (C. Iwakura), jorgespaschoal@uol.com.br (J. Rizzato Paschoal), lpfeilsticker@gmail.com (L. Nizam Pfeilsticker).

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Presentación del caso: Un paciente joven se sometió a tratamiento quirúrgico de una anquilosis bilateral congénita con consecuencias catastróficas, como parálisis facial, sordera y extravasación de líquido cefalorraquídeo en el lado derecho relacionada con el traumatismo intraoperatorio, que afectó a las estructuras del oído externo, medio e interno.

Conclusión: Puesto que no se dispone de un tratamiento corrector para este tipo de lesiones, tanto el cirujano experto en cabeza y cuello como otros profesionales que efectúan intervenciones de esta naturaleza necesitan unos conocimientos óptimos sobre la anatomía del hueso temporal y la base del cráneo, y deben tener en cuenta el riesgo de una catástrofe quirúrgica como la descrita en este paciente.

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Introduction

The temporomandibular joint (TMJ), essential for normal function of the mouth, chewing, speech and nutrition, is synovial and composed of hard cartilage, which allows correct connection and sliding of the involved bone. The fibrocartilaginous tissue is avascular and has high regenerative capacity.¹

This structure is formed by the temporal bone (glenoid fossa and articular eminence) and mandibular condyle; the main muscles implicated in the control of TMJ are the temporal and masseter. There are a lot of TMJ disorders, like ankylosis and the most common dislocation of the joint.^{2,3}

The extent of mouth opening is an important parameter for assessing the functionality of this joint.⁴ The opening considered normal ranges 35–40 mm and can be done by specific measurement instruments.^{5,6}

TMJ ankylosis causes great discomfort and the patient often requires multidisciplinary care to soften the impact of this condition on their quality of life. Treatment often involves surgery with greater or lesser degree of difficulty and requiring great anatomical knowledge not only of TMJ, but also of all related structures.^{7,8} The risks of iatrogenic injuries and sequelae increase, often deteriorating the patient condition, when this complex region is approached without the proper preparation.⁹

We report the case of a young woman who underwent surgery for correction of bilateral TMJ ankylosis, which resulted in a complete disaster, causing unacceptable otological and neurological sequelae.

Case presentation

A Brazilian female patient aged 22 years old was referred to our clinic three months after undergoing surgery in another service to correct congenital bilateral TMJ ankylosis with placement of acrylic spheres, titanium condylar screws and plates in both joints (Fig. 1).

A pre tragal approach was taken to perform this surgery with subfascial dissection by planes (subfascial). The TMJ ankylosis was removed and placed a prosthesis made of acrylic, in ball format, to fill the empty space created by this procedure. The condyles became fractured during the surgery and it needed a further fixation with titanium plates and screws.

In addition to complaining of the lack of facial movement and hearing loss on right side, immediately after surgery, she

reported having developed a cerebrospinal leak in the right ear, treated with lumbar shunt, which closed spontaneously during the first month. During physical examination, she showed right peripheral facial palsy grade IV (House-Brackmann scale) (Fig. 2). Otoscopy showed right prosthetic joint covered by soft tissue protruding and blocking the entire external auditory canal. The audiometric test resulted in deafness on the right side and normal hearing on the left side. Previous electromyography revealed complete impairment in the right facial nerve without reinnervation signs. Finally, CT scan showed extensive destruction in the lateral skull base region, involving middle and inner ear and the middle fossa floor (Fig. 3).

After a careful evaluation of the temporal bone, using a high-resolution computed tomography, the following situations were observed: discontinuity along the top edge of the right temporal bone, which suggests an area of continuity between the middle fossa floor and the surgical site (Fig. 4). Signs of calcification were observed around the right cochlea, mainly in the basal turn, compatible with labyrinthitis ossificans. There was also a hyperdense material projected next to the vestibule and oval window, which may correspond to materials used during surgery or residual calcifications.

Postsurgical changes extending to the proximal portion of the right carotid canal (in the topography of the first segment of the petrous portion of the carotid artery), which is tightened, can be observed on the CT scan (Fig. 5). It should be noted, however that there is also a slight narrowing of the rest of the right carotid canal (compared with the contralateral side), which corresponds to a patient constitutional change (anatomic variant). An intracranial carotid angiography would be necessary to confirm possible iatrogenic injury of the right carotid artery.

Eustachian tubes were unchanged during the radiological evaluation. Gross calcifications were also observed adjacent to the ossicular chain, at the right ear, compatible with tympanosclerosis.

A surgical repair of the facial nerve was offered to the patient; however, because of the possibility of losing the prosthesis in this procedure, she refused the surgery. During an 8-year follow-up, she maintained deafness in the right ear, mouth opening of 2.5 cm and right facial palsy grade III (House-Brackmann scale), with multiple synkinesis and muscle orolabial spasticity.

So after conclusion of clinical evaluation (mouth opening of 2.5 cm, no pain) and considering the patient decision we decided to do only clinical follow-up, with no exchange of prosthesis or any other surgical approach of TMJ ankylosis.

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