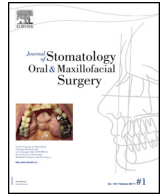




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Case Report

Spasmodic torticollis after orthognathic surgery

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ABSTRACT

The treatment of malocclusions can involve orthognathic surgery. Although orthognathic surgery is a safe surgical procedure, low incidences of many complications have been reported such as infections, hemorrhage, nerve injuries, temporomandibular disorders (TMDs), and psychological problems. There are no reports in the literature of orthognathic surgery being associated with postural disorders although the link between dental occlusion and postural disorders is highlighted in numerous recent publications. This report describes the case of a young, healthy patient who presented with sustained spasmodic torticollis following orthognathic surgery. In addition, the physiopathological aspects of this atypical condition are discussed.

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1. Introduction

The treatment of malocclusions can involve orthognathic surgery. The goals of such surgery are to restore a normal occlusion and achieve optimal facial harmony and long-term stability.

Although orthognathic surgery is a safe surgical procedure, low incidences of many complications have been reported. These complications principally include infections, hemorrhage, nerve injuries, temporomandibular disorders (TMDs), and psychological problems. However, there are no reports in the literature of orthognathic surgery being associated with postural disorders. Nevertheless, recent publications indicate an increasingly clear link between dental occlusion and postural disorders [1].

This report describes the case of a young, healthy patient who presented with sustained spasmodic torticollis following orthognathic surgery. In addition, the physiopathological aspects of this atypical condition are discussed.

2. Case report

A white, 17-year-old girl without any medical history presented with dentofacial deformities requiring orthognathic surgery. There were no previous history of temporomandibular disease or head and face trauma. The four first premolars had been removed before the initial consultation. The patient exhibited mandibular hypoplasia

resulting in a class II malocclusion and a slight open bite (Figs. 1a, b, c and 2a, b).

A bimaxillary osteotomy was performed, including a Le Fort 1 osteotomy for superior repositioning of the maxilla, associated with a bilateral sagittal split osteotomy (Epker osteotomy) for mandibular advancement. Maxillary osteosynthesis was realized using four miniplates (one on each canine and zygomatic pillar). Regarding mandibular osteotomies, bony fixation was performed bilaterally using one miniplate on the mandibular body and two retromolar bi-cortical screws. Maxillomandibular fixation was maintained for 2 weeks.

Two days after the surgery, a slight tilt and rotation of the patient's head to the left-hand side was noticed. The patient complained that she felt "tensions" in her neck. The condition worsened, but was considered to be related to inappropriate positioning during the surgery. Clinical evaluation showed a class I occlusion of canine and molar. The patient left hospital on day 4 and physiotherapy was prescribed. During the following weeks, however, the patient's condition did not improve and her symptoms intensified. There were no temporomandibular disease.

Two months after the bimaxillary osteotomy, the patient was admitted to the neurosurgery department for painful left laterocollis with rotational C1–C2 subdislocation (Figs. 3 and 4); no traumatic lesions were reported. There were no ligaments injuries on magnetic resonance imaging, including the transverse atlantal ligament. Under general anesthesia, the head relaxation was spontaneous and a rigid cervical collar was fitted. The reduction was favorable, and the patient experienced huge improvements in mobility. However, despite the rigid cervical collar, the spasmodic torticollis remained partly present, although it was still reducible with gentle maneuvers during consultation.

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Fig. 1. A. Preoperative occlusal photograph – Lateral view on the right side. B. Preoperative occlusal photograph – Lateral view on the left side. C. Preoperative occlusal photograph – frontal view.

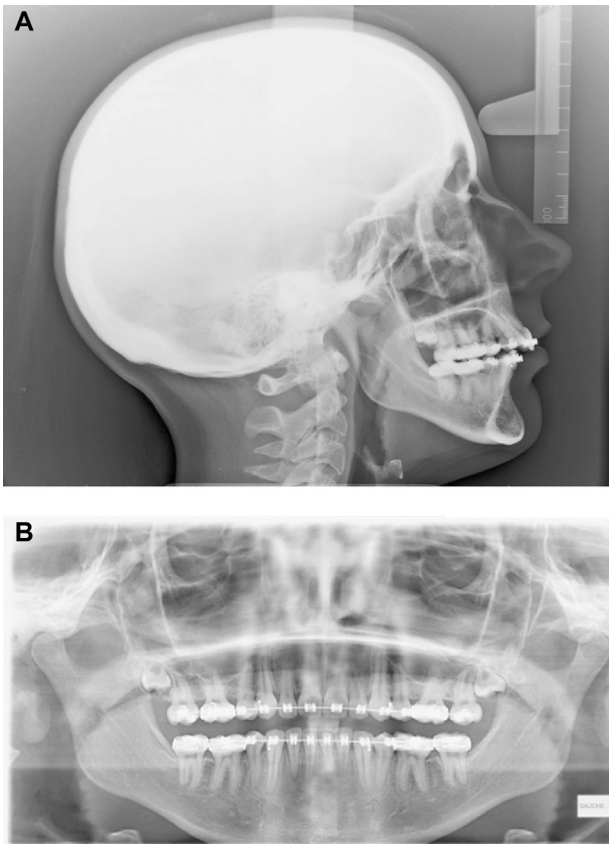


Fig. 2. A Preoperative lateral cephalometric radiograph of the patient, showing a

61 The patient was injected with botulinum toxin in the right
62 splenius capitis muscle and the left sternocleidomastoid muscle on
63 four occasions over the next 6 months. This treatment offered a
64 small improvement, but the laterocollis remained. Therefore,
65 surgical reduction of the subluxation associated with C1–C2
66 osteosynthesis was performed 14 months after the initial ortho-
67 gnathic surgery. Follow-up showed complete resolution of the
68 laterocollis.

69 The class I occlusion remained stable during treatment of the
70 laterocollis and after its resolution (Figs. 5a–c and 6a,b). However,
71 the patient later developed a disc displacement with reduction and
72 intermittent locking, according to the diagnostic criterion of the
73 International RDC–TMD Consortium Network and the Orofacial
74 Pain Special Interest Group [2].

75 **3. Discussion**

76 A link between dental occlusion and body posture has been
77 reported in various studies, but remains uncertain [1]. Among the
78 identified body-posture determinants, the role of trigeminal

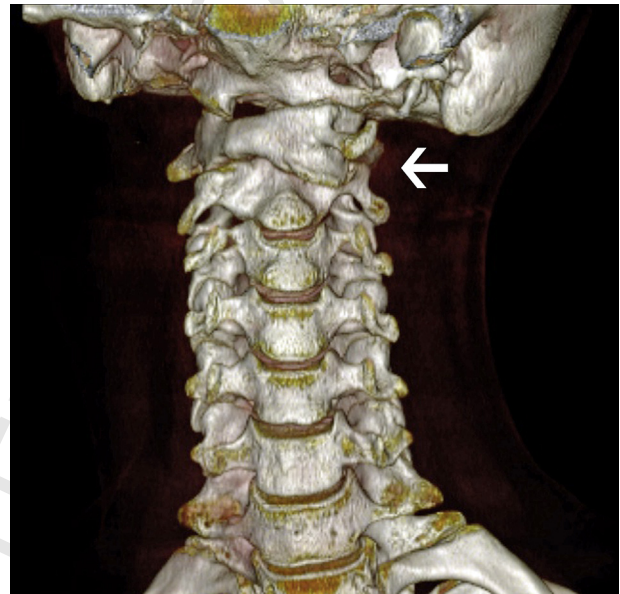


Fig. 3. Front view of a three-dimensional computed tomography scan of the cervical spine, showing C1–C2 subluxation (arrows).



Fig. 4. Three-quarters view of a three-dimensional computed tomography scan of the cervical spine, showing C1–C2 subluxation (arrows).

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