PSEUDOJOINT OF THE MANDIBLE: AN UNUSUAL CASE REPORT

ABSTRACT

The growing population of patients with maxillofacial injuries is of great importance. Overlooked condylar fractures lead to inhibition of mandibular growth, occlusal disturbances, and ankylosis of the temporomandibular joint. In this unusual case report, temporomandibular joint ankylosis with pseudojoint formation due to maxillofacial trauma is presented.

Keywords: Ankylosis, Pseudojoint, Tempomandibular Joint, Trauma

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ÖZET

Anahtar Kelimeler: Ankiloz, yalancı ekmek, temporomandibular eklem, travma

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INTRODUCTION

Diacapitular fracture of the mandibular condyle is one of the most challenging problems in oral and maxillofacial surgery. It may cause condylar necrosis, inhibition of mandibular growth, occlusal disturbances, and ankylosis of the temporomandibular joint (TMJ). Ankylosis of the TMJ destroys the patient’s joint morphology; limits mouth opening; affects daily functions of speech, mastication, and oral hygiene; and causes facial deformities when it occurs during the growing years.1

TMJ ankylosis has various causes such as trauma, local or systemic infection, and systemic diseases.2 Trauma is one of the well-known causes of TMJ ankylosis and accounts for 75–98% of all cases.

In contrast, a medially dislocated condylar fragment (MDCF) may also trigger TMJ ankylosis.3 Therefore, active mobilization of the joint with vigorous mouth-opening exercises has to start early, within a few days after injury, to avoid development of ankylosis, especially in children with diacapitular fractures.4 On the other hand, appropriate treatment of concomitant fractures, such as those of the mandibular body, symphysis, and ramus is also important to achieve optimal occlusion and function and to avoid post-treatment complications such as non-union, fibrous union, malocclusion, and infection.5

In this unusual case report, a pseudojoint formed at the ramus of the mandible due to TMJ ankylosis following a complex fracture of the mandible was presented.

CASE REPORT

A 44-year-old female patient with no systemic disease was referred to Karadeniz Teknik University, Faculty of Dentistry, Department of Oral and Maxillofacial Surgery, for treatment of dental problems. The patient had a trauma history when she was 3 years old but had no treatment for maxillo-mandibular fracture in the emergency unit at that time.

On radiographic examination, a non-union fracture line on the left ramus of the mandible and ankylosis of the left TMJ were demonstrated by panoramic (Figure 1) and TMJ (Figure 2) radiography. Cone-beam computed tomography (CBCT) was used for three-dimensional imaging (Figure 3). According to CBCT, the ramus appeared as a broad block of bone of uniform radiodensity following uninterruptedly onto the temporal bone. The lower end of the fractured ramus was detected as a smooth, remodeled condyle. On clinical examination, the fracture line at the left mandibular ramus acted as a TMJ, and this situation was demonstrated by compliance with radiographic examination. Maximum mouth opening, mandibular protrusive movement, and left and right lateral movements were measured as 35, 2, 5, and 1 mm, respectively. Mandibular deviation associated canted occlusal plane with facial and morphologic asymmetries was detected (Figure 4). There was no clicking or pain on opening of the jaw or neurological disturbance on the affected side. Gap arthroplasty with total joint replacement was suggested to the patient, but she did
not accept any treatment because she had no complaints about masticatory function and esthetic appearance. After extraction of infected teeth and periodontal therapy, partial dentures were prepared for prosthetic rehabilitation. The patient underwent periodic follow up evaluations for 2 years with no further complications.

DISCUSSION

Treatment of maxillofacial trauma in the young patient population is of great importance. Although open reduction with internal fixation in adult patients is increasing, closed reduction with maxillomandibular fixation (MMF) remains widely accepted in developing countries. The success of the treatment in the pediatric patient population is related to early mobilization of the temporomandibular joint associated with the immobilization of concomitant fracture lines such as those of the mandibular body, symphysis, and ramus. Therefore, prolonged MMF is not recommended for more than 10 days in diacapitular fractures, but the sufficiency of this period remains controversial in the presence of concomitant fractures in the mandible or maxilla.

Ankylosis of the TMJ is a rare phenomenon that results in chronic and severe limited mouth opening. Trauma is the most common cause, particularly in untreated cases of severe comminution of the condylar head. Trauma can create a diacapitular hematoma that triggers fibrosis, abnormal bone formation, and hypomobility of the joint. Also, as a result of continuous traction of the lateral pterygoid muscle, an antero-medially displaced condylar fragment may be responsible for the development of ankylosis.

Condylar fractures are often misdiagnosed in pediatric patients who are referred to the emergency department with maxillofacial soft tissue injuries. Radiological evaluation plays an important role in the diagnosis; thus, an orthopantomogram with right and left lateral oblique projections or computed tomography should be evaluated carefully. In this case, a probably overlooked fracture resulted in ankylosis of the TMJ with a pseudojoint on the left side of the ramus mandible that may have been related to inappropriate or inadequate imaging technique. At the time of injury, the patient was 3 years old, and therefore TMJ imaging for diagnosis might have been difficult. The social status of patients is another critical point. In this case, economic aspects of the patient’s family situation led to disregard of treatment during her growing years.

Pseudojoint of the TMJ, in association with Jacob’s disease, occurs rarely. It consists of pseudojoint formation between an enlarged coronoid process and the inner portion of the zygoma. Metaplastic cartilage activity and trauma play important roles in the development of osteochondroma. In this case, no cartilage or its remnant was found; therefore, there was a precise pseudojoint between two fracture surfaces with non-union.

In conclusion, maxillofacial trauma in the pediatric patient population should be assessed carefully. Radiological and clinical follow-up should be recommended to evaluate the compatibility of facial growth.

REFERENCES


