

# Treatment of Unilateral Temporomandibular Joint Ankylosis resulted from neonatal ear infection: A Case Report

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## ABSTRACT

Temporomandibular joint (TMJ) ankylosis is a debilitating condition characterized by the pathological fusion of the mandibular condyle to the glenoid fossa, leading to limited jaw movement. While trauma is the most common cause, infections during infancy, such as otitis media, can also result in TMJ ankylosis. We present the case of a 4-year-old boy who developed unilateral right-sided TMJ ankylosis following an ear infection during infancy. The patient was successfully managed with interpositional arthroplasty at the Department of Oral Surgery, PGIDS Rohtak. This case highlights the importance of recognizing TMJ ankylosis as a potential complication of neonatal infections and the need for early surgical intervention to restore mandibular function and prevent further complications.

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## INTRODUCTION

Temporomandibular joint (TMJ) ankylosis is a debilitating condition characterized by the pathological fusion of the mandibular condyle to the glenoid fossa, resulting in limited mandibular movement and significant functional impairment.<sup>1</sup> The etiology of TMJ ankylosis can be traumatic, inflammatory, or congenital in nature. While trauma is the most common cause, infections during infancy and childhood, such as otitis media, mastoiditis, and systemic infections, have also been reported as underlying factors.<sup>2</sup>

Ankylosis of the TMJ presents a significant challenge in terms of diagnosis and management, as it can lead to several complications, including difficulty with mastication, speech, and oral hygiene, as well as facial deformity and psychological distress.<sup>3</sup> Early recognition and appropriate treatment are crucial to restore mandibular function and prevent further complications.

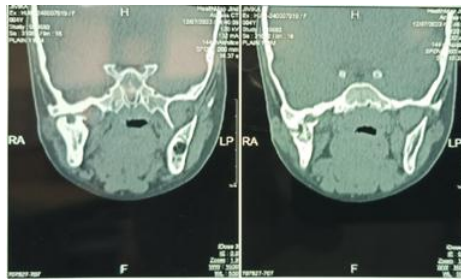
## CASE REPORT

A 4-year-old male patient was referred to the Department of Oral Surgery, PGIDS Rohtak, with a chief complaint of limited mouth opening and difficulty in eating. The patient's medical history revealed that he had suffered from an ear infection (otitis media) at 21 days of age, which was treated with antibiotics. Following the ear infection, the patient's parents noticed a gradual limitation in mouth opening, which progressively worsened over the next few years (Figure 1).

On clinical examination, the patient exhibited severely restricted mouth opening, with a maximum interincisal distance of only 4-5mm (Figure 1). Palpation of the right TMJ region revealed a hard, immobile mass, suggestive of bony ankylosis. Panoramic radiography and computed tomography (CT) imaging confirmed the presence of bony fusion between the right mandibular condyle and the glenoid fossa (Figure 2).



**Figure 1: Preoperative Nil mouth opening of the patient.**



**Figure 2: CBCT imaging showing fusion of the right TMJ**

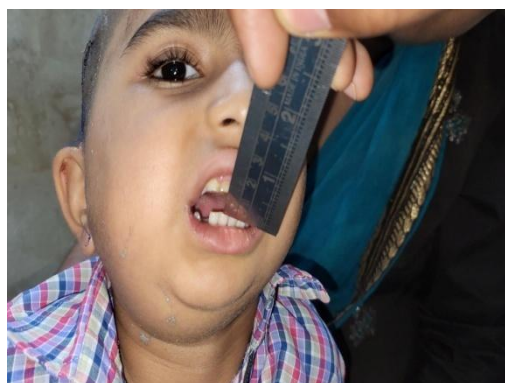
Based on the patient's history and radiographic findings, a diagnosis of unilateral right-sided TMJ ankylosis was made. The patient was scheduled for surgical management and underwent interpositional arthroplasty of the right TMJ under general anesthesia.

**Surgical procedure:**

During the surgical procedure, the preauricular Alkayat Bramley incision was made, and the TMJ was exposed layerwise. The ankylosed mass was carefully excised, 22 mm mouth opening was achieved and an interpositional gap arthroplasty was performed using a temporalis fascia flap (Figure 3).



**Figure 3: Intraoperative view of the right TMJ during interpositional arthroplasty**



**Figure 4: 22 mm mouth opening of the patient at one week follow up**

Postoperatively, the patient was kept on a soft diet and instructed to perform active jaw exercises to maintain the newly acquired range of motion. At the follow-up, the patient exhibited a significant improvement in mouth opening, with a maximum interincisal distance (Figure 4). The patient's parents reported that he was able to eat and speak more comfortably.

### DISCUSSION

TMJ ankylosis is a debilitating condition that can have a significant impact on a patient's quality of life. While trauma is the most common etiological factor, infections during infancy and childhood, such as otitis media, have also been recognized as potential causes of TMJ ankylosis.<sup>2</sup>

In the present case, the patient developed unilateral right-sided TMJ ankylosis following an episode of otitis media at 21 days of age after the birth. The infection likely caused the inflammation and subsequent bony fusion between the mandibular condyle and the glenoid fossa, leading to the gradual limitation of mandibular movement. The lack of early recognition and appropriate management of the ear infection in this case may have contributed to the development of TMJ ankylosis.

The management of TMJ ankylosis typically involves surgical intervention, with the primary goal of restoring mandibular function and preventing recurrence. Interpositional arthroplasty, as performed in this case, is a well-established surgical technique that involves the excision of the ankylosed mass and the placement of an interposition material, such as a temporalis muscle flap, to prevent re-ankylosis.<sup>4</sup>

In the present case, the patient's surgical outcome was favourable, with a significant improvement in mouth opening and overall function. The early recognition of the condition and the timely surgical intervention played a crucial role in the successful management of this patient.

### CONCLUSION

This case highlights the importance of recognizing TMJ ankylosis as a potential complication of neonatal infections, such as otitis media. Early diagnosis and appropriate surgical management, as demonstrated in this case, can lead to favourable outcomes and significantly improve the patient's quality of life. Clinicians should maintain a high index of suspicion for TMJ ankylosis in patients with a history of childhood infections and promptly refer them for specialized care to prevent further complications.

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