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Facial Palsy in ASOM : An Uncommon Presentation

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1 Facial Palsy in ASOM : An Uncommon Presentation

2 Abstract

3 Introduction: Acute Suppurative Otitis Media (ASOM) is a common childhood infection.
4 However, complication with facial nerve palsy is a rare but significant occurrence, representing
5 a medical urgency. This case report details the presentation, management, and outcome of a 5-
6 year-old male with ASOM-associated facial palsy.

7 Case Report: A previously healthy 5-year-old male presented with acute-onset left-sided facial
8 weakness. History revealed a preceding upper respiratory tract infection with cough, cold, and
9 fever. Otoloscopic examination confirmed left ASOM and right serous otitis media (OME). Initial
10 conservative management with antibiotics and analgesics yielded no improvement in facial
11 nerve function. The child subsequently underwent bilateral myringotomy with insertion of a
12 grommet on the left side. Intraoperative diagnostic nasal endoscopy revealed Grade 4 adenoid
13 hypertrophy. Significant improvement in facial palsy was noted by the fifth postoperative day.
14 Three months later, the patient successfully underwent elective adenoidectomy (Tonsillectomy
15 and Adenoidectomy - TAR) to address the underlying pathology and prevent recurrence.
16 Discussion: Facial palsy in ASOM is believed to result from direct inflammation and neuropraxia
17 of the dehiscence tympanic segment of the facial nerve or via congenital bony defects. Timely
18 surgical intervention with myringotomy and ventilation tube insertion is the cornerstone of
19 management, providing immediate decompression and drainage. The presence of significant
20 adenoid hypertrophy is a known risk factor for recurrent otitis media, and its removal is often
21 indicated to ensure long-term resolution.

22 Conclusion: Although rare, facial palsy is a serious complication of ASOM. A high index of
23 suspicion and prompt otologic evaluation are crucial. Early surgical myringotomy with grommet
24 insertion leads to excellent recovery of facial function. Evaluation and management of
25 predisposing factors, such as adenoid hypertrophy, are essential for definitive treatment.

26
27 Keywords:

28 Acute Suppurative Otitis Media (ASOM); Facial Nerve Palsy; Pediatric; Myringotomy; Grommet
29 Insertion; Adenoid Hypertrophy; Tympanostomy Tubes; Otitis Media with Effusion (OME).

30 Introduction

31 Acute Suppurative Otitis Media (ASOM) is one of the most frequently diagnosed infections in
32 pediatric populations, characterized by the rapid onset of signs and symptoms of inflammation
33 in the middle ear. While most cases resolve uneventfully with appropriate medical management,
34 intratemporal and intracranial complications, though rare in the post-antibiotic era, still occur.

35
36 Facial nerve palsy is an uncommon but alarming complication of ASOM, with an estimated
37 incidence of 0.005% to 0.001% [1]. The pathophysiology typically involves direct inflammation of
38 the facial nerve within its bony canal in the middle ear. The nerve is most vulnerable in its
39 tympanic segment, where the bony covering may be dehiscence in a significant portion of the

population, particularly children [2]. The inflammatory mediators and bacterial toxins from the middle ear infection can cause neuropraxia, leading to the acute onset of unilateral facial weakness.

This case report presents the clinical course of a 5-year-old child who developed facial palsy secondary to ASOM. It highlights the importance of a systematic diagnostic approach, the limitations of conservative management, the critical role of timely surgical intervention, and the necessity of addressing underlying predisposing factors like adenoid hypertrophy to prevent recurrence.

Case Report

A 5-year-old male child, previously healthy and fully immunized, was brought to the ENTOPD with a chief complaint of acute-onset drooping of the left side of the face and inability to fully close the left eye, which had developed over the previous 24 hours (Figure 1). The history revealed a prodrome of cough, cold, and mild fever for four days. The parents also reported the child complaining of left ear pain, which had since subsided. There was no history of head trauma, rash, recent vaccination, or previous similar episodes.

On examination, the child was afebrile and alert. A gross left-sided lower motor neuron type facial palsy (House-Brackmann Grade IV) was evident, with inability to frown, incomplete eye closure, loss of nasolabial fold, and asymmetry of the mouth on crying. Otoscopic examination revealed a bulging, erythematous, and opaque right tympanic membrane consistent with ASOM. The right tympanic membrane was dull and amber-colored with an air-fluid level, suggestive of otitis media with effusion (OME). A pure tone audiometry was attempted but was unreliable due to the child's age and cooperation.

A provisional diagnosis of left ASOM with secondary facial palsy and right OME was made. The child was started on a course of oral broad-spectrum antibiotics (Amoxicillin-clavulanate), oral nasal decongestants, and analgesic/anti-inflammatory medication. Lubricating eye drops and advice for eye patching at night were given to protect the cornea.

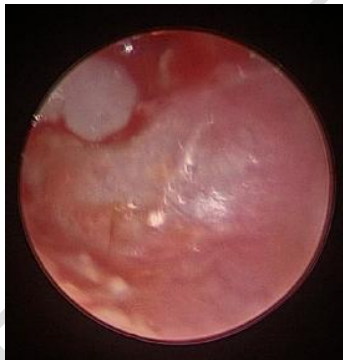
After 72 hours of conservative treatment, there was no improvement in the facial palsy. The otoscopic findings persisted. Consequently, a decision was made for surgical intervention. The child was taken to the operating theatre for an examination under microscopy and myringotomy. Intraoperatively, a left myringotomy was performed, which released purulent material (Figure 2). A ventilation tube (grommet) was inserted (Figure 3). A right myringotomy was also performed, which drained serous fluid; however, a grommet was not inserted on this side at this time (Figure 4). Diagnostic nasal endoscopy (DNE) performed during the same anesthesia session revealed significant Grade 4 adenoid hypertrophy (obstructing >95% of the choanal opening) (Figure 5).

The postoperative course was uneventful. The child was continued on antibiotic ear drops and oral antibiotics. Remarkably, on the fifth postoperative day, a significant improvement in facial

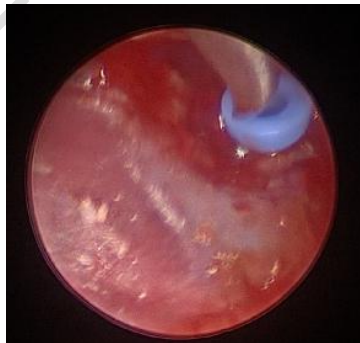
81 symmetry and movement was observed (improving to House-Brackmann Grade II) (Figure 6).
82 The child was discharged with advice for regular follow-up.
83 Three months later, after complete resolution of the acute infection and facial palsy, the child
84 underwent an elective Tonsillectomy and Adenoidectomy (TAR) to eliminate the source of
85 chronic upper airway obstruction and Eustachian tube dysfunction, thereby preventing future
86 episodes of otitis media.



87
88 *Figure 1 Left Facial Palsy*



89
90 *Figure 2 Pus discharge from Left side on myringotomy*



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92
93 *Figure 3 Grommet inserted in Left Tympanic Membrane*
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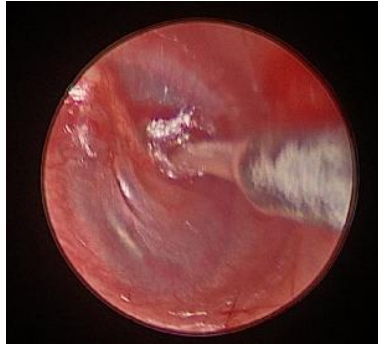


Figure 4 Serous fluid suctioned from Right middle ear after myringotomy



Figure 5 Grade 4 adenoid hypertrophy on DNE



Figure 6 Post operative improvement in Facial weakness

Discussion

This case exemplifies a rare but serious complication of a common pediatric condition. The development of facial palsy in a child with ASOM signifies a failure of medical management to control the infectious and inflammatory process, necessitating prompt escalation to surgical intervention.

The pathogenesis of facial palsy in ASOM is primarily attributed to the anatomic proximity of the facial nerve to the middle ear. The tympanic segment of the nerve courses just above the oval window and stapes. Congenital dehiscences in the bony Fallopian canal are present in up to 25-55% of the population, most commonly in this segment [3]. In our case, the inflammatory edema and bacterial toxins from the suppurative infection in the right middle ear likely traversed a

dehiscent bony canal, causing neuropraxia of the facial nerve without permanent axonal degeneration.

The initial conservative management with antibiotics and anti-inflammatories is a standard first step. However, the lack of improvement within 72 hours indicated that drainage of the purulent collection was imperative to decompress the nerve. Myringotomy with grommet insertion achieves two critical goals: 1) it allows for culture and drainage of the infected material, immediately relieving pressure within the middle ear, and 2) it facilitates the topical delivery of medications and ensures continued aeration, preventing re-accumulation [4]. The dramatic improvement on postoperative day 5 supports the theory of a pressure-induced or inflammatory neuropraxia that reverses upon removal of the inciting factor.

The finding of Grade 4 adenoid hypertrophy is a key element in this case. Adenoid hypertrophy is a well-established cause of Eustachian tube dysfunction, leading to impaired middle ear ventilation and the development of both ASOM and OME [5]. By addressing this underlying pathology with adenoidectomy (as part of TAR) after the acute infection had resolved, the surgical team aimed to break the cycle of recurrent otitis media and prevent future complications.

This case underscores a critical management algorithm: in ASOM complicated by facial palsy, prompt surgical myringotomy with ventilation tube insertion is the treatment of choice if there is no immediate improvement with medical therapy. Furthermore, a complete otolaryngologic evaluation, including nasal endoscopy to assess the adenoid, is essential for comprehensive management and prevention of recurrence.

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