



An Infant Presenting with Facial Asymmetry

Fasiyal Asimetri ile Başvuran Bir Bebek

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ABSTRACT

Acute otitis media (AOM) is one of the most common infectious diseases in childhood. It is seen most often between 6-18 months of age. Although it is known to have many complications, peripheral facial palsy is an uncommon complication in infancy. Here, a 42-day-old infant with unilateral facial palsy secondary to AOM and mastoiditis is presented. Facial nerve palsy improved without surgery.

Keywords: Facial palsy, acute otitis media, infant

ÖZ

Akut otitis media (AOM), çocukluk çağının en sık görülen enfeksiyon hastalıklarından biridir. En sık 6-18 aylar arasında görülür. Bilinen birçok komplikasyonu olmasına rağmen periferik fasiyal paralizi bebeklik döneminde nadir bir komplikasyondur. Bu makalede, AOM ve mastoidite ikincil tek taraflı fasiyal paralizi gelişen 42 günlük bebek sunulmuştur. Fasiyal paralizi cerrahi girişim yapılmadan düzelmiştir.

Anahtar Kelimeler: Fasiyal paralizi, akut otitis media, bebek

Introduction

Acute otitis media (AOM) is a frequently seen, well-known disease in early childhood. Many extracranial and intracranial complications such as cholesteatoma, mastoiditis, facial nerve palsy, and brain abscess can develop due to AOM. The development of the complications has decreased because of the widespread use of antibiotics. Acute mastoiditis was the most common intracranial complication before the antibiotic era, occurring in about 20% of cases (1). Facial palsy is now a rarely seen complication, with an incidence of 1%. Although AOM occurs early in life, facial palsy is not common in infancy. In some cases, facial palsy cannot be improved with conservative therapy, and myringotomy or mastoidectomy may be needed. Here, we describe a 42-day-old infant with unilateral facial palsy due to AOM and mastoiditis who recovered with antibiotic therapy.

Case Report

A 42-day-old female was taken to the doctor with complaints of right ear discharge that had lasted for two days and a left-sided facial droop that her mother noticed when the patient cried on the day she was admitted. An otorhinolaryngologist diagnosed AOM and grade 2 facial palsy in the left side, and she was referred to our hospital. There was no history of fever. She was born by normal vaginal delivery at term with a birth weight of 2.400 g. She was breastfed and had no history of any disease. She had not received the pneumococcal vaccine. Her family history was unremarkable. On admission, her body weight was 4.500 g (50p), height 53 cm (50p), head circumference 41 cm (97p), heart rate 140/minimum, and body temperature 36.5 °C. The corner of her mouth was noted to be shifting to the right

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side, and she was unable to close her left eye when crying. With these findings, a grade 4 house-brackmann left facial palsy was considered (Figure 1). In an otoscopic examination, purulent secretions in the left external auditory canal and left tympanic membrane perforation were observed. A head and neck examination revealed mastoiditis on the left side; there was left auricular displacement. The patient had no clinical signs suggestive of meningitis. Other systems were found normal upon examination. Laboratory tests revealed a hemoglobin level of 9.6 g/dL, white blood cell count of 14.300/mm³, platelet count of 556.000/mm³ and C-reactive protein level at 99 mg/L. Biochemical parameters were normal. Blood and a swab culture were sent.

On the first day of admission, purulent discharge occurred in the right ear. The patient received ceftriaxone and vancomycin therapy. The treatment was managed by an otorhinolaryngologist, and intravenous corticosteroid (prednisone 1 mg/kg/dL) was given for one week. Computed tomography imaging showed common soft tissue densities



Figure 1. Photograph showing left sided peripheral facial palsy on the admission day

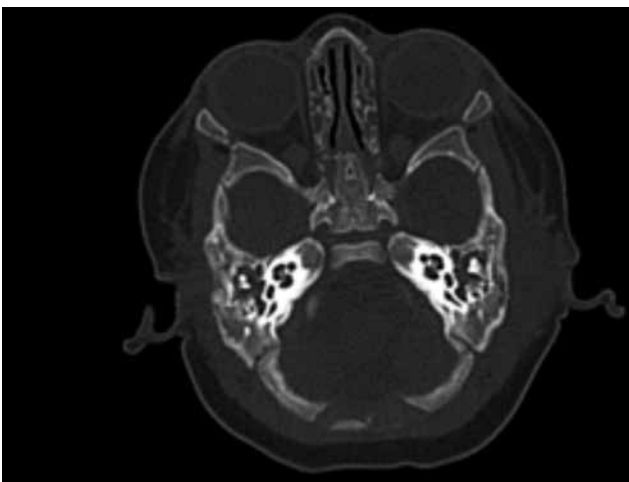


Figure 2. Computed tomography imaging showing common soft tissue densities in the middle ear and both sides of mastoid air cells

in the middle ear and both sides of mastoid air cells (Figure 2). There was no evidence of meningitis. The hearing test reported that there have been bilateral normal cochlear function. Immunological examinations were unremarkable. The blood culture was negative, penicillin-sensitive pneumococcal growth was detected in the swab culture that was taken from the external auditory canal, and vancomycin was stopped. On the seventh day of hospitalization, improvement in facial paralysis was seen; she could close her left eye. Mastoidectomy was not performed because of detectable clinical improvement. The patient was discharged with mild facial palsy, after ceftriaxone therapy was continued for 21 days. On follow-up examination at the second week, there was complete resolution of the facial palsy.

Discussion

AOM is one of the most frequent diseases and most common reasons for antibiotic use in children. AOM can be seen in all ages, but is most prevalent in infancy (2). Because the mastoid air cells are connected to the distal end of the middle ear, most episodes of AOM used to be associated with mastoiditis in the pre-antibiotic era but is now rare. The facial nerve runs through the middle ear and mastoid, so facial palsy may occur as a complication of AOM or acute mastoiditis. Although AOM often occurs early in life, facial palsy is rarely seen in infancy.

Facial palsy was reported in 0.5-0.7% cases of AOM in the pre-antibiotic era (3). AOM is more common in children younger than 18 months, but facial palsy development as a complication of AOM is more than 10 times in adults. Facial palsy related to AOM has been reported as 1-4% in some articles (4). In their study, Yonamine et al. (4) reported that facial palsy occurred in 1% of children with AOM. Similarly, the rate of facial palsy development due to AOM in children was reported as 1% in Makeham et al.'s (5) study.

The pathophysiology of facial palsy in AOM is not sufficiently known, and many mechanisms have been suggested to explain the process. Some of these are as follows:

1. Direct bacterial invasion of the facial nerve,
2. Vascular stasis, causing thrombosis and ischemia because of the impact of the purulent exudate,
3. Acute neuritis with venous thrombosis leading to inflammatory oedema of the nerve, and
4. Demyelination of the facial nerve secondary to the presence of bacterial toxins (6,7).

When AOM progresses, silent or masked mastoiditis can develop, and the inflammation in the middle ear can spread to the facial nerve bony canal (fallopian canal) and can cause poor vascular perfusion, resulting in facial palsy; this usually occurs due to inadequate antibiotic use (8).

In management of facial palsy secondary to AOM, aggressive antimicrobial therapy and myringotomy with or without tube insertion is recommended (4). The most

common organisms in AOM and in the case of suppurative complications are *S. pneumoniae*, *Staphylococcus spp.* (9). It was reported that the bacterial pathogen was isolated in 80% of cases (most of them were *S. pneumoniae* and *Haemophilus influenzae*) of AOM in the first eight weeks of life (10). Initial antibiotic treatment should be made with intravenous third-generation cephalosporin by obtaining meningeal penetration, and the maintenance therapy should be done according to the results of the culture antibiogram (11). Positive culture results that were taken by myringotomy were reported in about 50% of cases (12). If the facial palsy does not improve in a few days despite appropriate antibiotic therapy and myringotomy, the clinician must perform computerized tomography of the temporal bone to check for mastoiditis or tumours (4). In this case, some authors suggest mastoidectomy while the others suggest facial nerve decompression with mastoidectomy (7,13). Steroid treatment for facial palsy is also controversial. A five-day course of prednisone with antibiotic therapy is recommended by some authors in the literature, and complete recovery may take three to six weeks (7).

In our case, bilateral tympanic membrane perforation was observed, so the patient did not require myringotomy. *S. pneumoniae* was the causative agent similar to the literature. She recovered with appropriate antibiotic therapy without surgery.

As a result, we presented a 42-day-old patient to take care of that AOM and mastoiditis could cause peripheral facial palsy in patients presenting with facial asymmetry, although it is less common in young infants. Intravenous antibiotic therapy and myringotomy constitute the first-line treatment while surgery (mastoidectomy) should be considered in the case of insufficient clinical improvement.

Ethics

Informed Consent: Informed consent was taken from parents.

Peer-review: External and Internal peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: Gülhadiye Avcu, Nurşen Belet, Sinan Atmaca, Concept: Gülhadiye Avcu, Design: Nurşen Belet, Data Collection or Processing: Arzu Karlı,

Muzaffer Elmalı, Analysis or Interpretation: Nurşen Belet, Literature Search: Gülnar Şensoy, Writing: Gülhadiye Avcu.

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