

CASE REPORT

Acute Mastoid Abscess Secondary to Partially Treated Upper Respiratory Tract Infection: A Case Report

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ABSTRAK

Abses mastoid akut selalu ditemui dalam kerja sehari-hari. Jangkitan ini sering berlaku di kalangan kanak-kanak terutama apabila rawatan yang diberikan tidak berkesan atau rawatan yang diberikan tidak mencukupi untuk menyembuhkan jangkitan tersebut. Beberapa penulis telah melaporkan bahawa otitis media kronik supuratif mungkin boleh menjadi punca jangkitan tetapi biasanya disebabkan kehadiran 'cholesteatoma'. Di sini, dilaporkan kanak-kanak perempuan berumur 7 tahun yang telah mengalami abses mastoid akut. Kanak-kanak tersebut datang dengan pembengkakan belakang telinga kiri dan kesakitan telinga kiri yang teruk selama 3 hari. Dia juga didapati mengalami demam. Pemeriksaan telinga kirinya menunjukkan pembengkakan di belakang telinga dan dinding posterior lubang telinganya. Dia telah menjalani pembedahan kecemasan mastoid kortikal untuk mengeluarkan nanah dan beliau telah sembuh sepenuhnya. Kesimpulannya pesakit ini telah mendapat rawatan antibiotik yang tidak mencukupi yang meningkatkan risiko beliau untuk menghadapi gejala mastoiditis yang tersembunyi. Ini akhirnya mengakibatkan beliau mendapat abses mastoid. Sehubungan dengan itu kami mencadangkan agar semua pesakit yang mengidapi otitis media akut perlulah mendapat rawatan antibiotik selama sekurang-kurangnya seminggu.

Kata kunci: abses mastoid, mastoiditis, otitis media

ABSTRACT

Acute mastoid abscess is common in daily practice. In children, it is usually caused by unsuccessful treatment or partially treated acute otitis media (AOM). Some authors had reported that chronic suppurative otitis media (CSOM) can be the source of infection but it is usually associated with the presence of cholesteatoma. A case of an acute mastoid abscess in a 7 year old girl is presented. She had a history of severe otalgia with left post auricular swelling for 3 days. Clinically she was febrile, the left otoscopy showed diffuse post auricular swelling and sagging of the posterior wall of the external canal. She underwent an emergency cortical mastoidectomy for the left mastoid abscess and had an uneventful recovery. In conclusion, this patient was

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partially treated with antibiotics which increased the risk for 'masked mastoiditis', and she later developed a mastoid abscess. Therefore we advocate that all AOM patients should be treated with antibiotics at least for a duration of one week.

Key words: mastoid abscess, mastoiditis, otitis media

INTRODUCTION

Acute mastoid abscess usually occurs from the contagious spread of acute otitis media (AOM) to the mastoid portion of the temporal bone. Subclinical infection resulting in mucosal oedema, will not manifest clinically, is only seen as clouding of the mastoid air cells on CT scan. The incidence reaches 100% in children with uncomplicated AOM (Lee 2008). Acute mastoid abscess most frequently occurs as result of partially or untreated cases of AOM in children. In the early 20th century 50% of all cases of otitis media developed a coalescent mastoiditis. By 1959, the incidence had fallen to 0.4% and currently the incidence is only 0.24% (Spiegel et al. 1998). According to Friedrich Bezold (1824-1908), 20% of patients with mastoiditis developed mastoid abscess (Spiegel et al. 1998).

In the presence of clinical mastoiditis, the infection from the mastoid air cells extends through the mastoid cortex resulting in a mastoid abscess. Examination of the ear will show an obvious fluctuant swelling over the post auricular and extending to the supraauricular area. The skin over EAC is swollen and inflamed. In a mastoid abscess, infecting organisms are similar to those found in most cases of AOM, with *streptococcus pneumonia* and *haemophilus influenza* being most commonly isolated (Ludman & Wright 1998). The occurrences of acute mastoiditis and acute mastoid abscess have reduced considerably with the use of better antibiotics. However, in the developing countries, these infections still remain major challenges with respect to diagnosis and

management (Dubey & Larawin 2007). In the presence of an abscess, surgery should be conducted, optimally within hours of diagnosis, which include post auricular incision and drainage, simple mastoidectomy and drainage of the wound (Nadol & McKenna 2005). Here, we report a case of acute mastoid abscess secondary to partially treated upper respiratory infection.

CASE REPORT

A 7 year-old Malay girl, presented with a history of upper respiratory tract infection (URTI) of two weeks duration, associated with left otalgia and otorrhoea. She was partially treated with oral antibiotics and ear drops by two general practitioners (GPs) but the symptoms persist. Three days prior to admission, the otalgia worsened and she developed left post auricular swelling. She denied any history of headache, photophobia, neck stiffness or nausea to suggest meningitis.

On examination, patient was febrile with a temperature of 39°C. However, she was not in distress. Purulent discharge was noted in the left external ear canal. There was a diffuse left posterior auricular swelling measuring about 2 x 3 cm. The swelling was fluctuant and tender and the overlying skin was inflamed. Examination under the microscope revealed sagging of the posterosuperior wall of the external ear canal. The tympanic membrane was inflamed and thickened. There was pus oozing through the small central perforation. Hearing threshold was not performed as she had severe otalgia. She was treated with broad spectrum

antibiotics and underwent an emergency left cortical mastoidectomy. Intraoperatively, there was an abscess in the mastoid cavity and the aditus was filled with granulation tissue. The tegmen mastoideum and posterior cranial wall adjacent to the sigmoid sinus were dehiscent. She was prescribed cefuroxime syrup on discharge. During the last visit following a year after surgery, she was well and the wound healed well. She was asymptomatic, the tympanic membrane was intact and pure tone audiometry showed normal hearing bilaterally.

DISCUSSION

AOM implies a suppurative process of the middle ear space characterised by otalgia with evidence of middle ear effusion, associated with symptoms of fever, anorexia, vomiting and diarrhoea. AOM is one of the commonest diseases of childhood. About 19% to 62% of children have had at least one episode of AOM by one year of age, and as many as 85% of them have had one episode of AOM by three years of age (Lee 2008). Peak incidence is during the second half of the first year of life. The risk of the children to acquire AOM is considered high as per statistical data. The general population may not be aware about the disease and the children may present predominantly with complaint of fever. They are usually treated with antipyretics, analgesics and may or may not be given oral antibiotics. Non-compliance to medication is also rampant. The parents administer the full course of oral antibiotics once their children were getting better. All these factors will contribute to untreated or under-treatment of the AOM which subsequently will lead to complications namely acute mastoiditis and mastoid abscess.

In this report, the patient presented with the clinical picture of AOM as a result of URTI. Though she had been given a few courses of oral antibiotics but this was

not sufficient to arrest the infection into the mastoid air cells. Once the infection involved the mastoid air cells, suppuration had taken place leading to a mastoid abscess. The standard treatment for mastoid abscess described in most Otolaryngology text books is cortical mastoidectomy (Nadol & McKenna 2005). A study had been performed by Al-Serhani (1998), comparing between cortical mastoidectomy and incision and drainage (I & D) with myringotomy in 10 patients with mastoid abscess following an AOM. Both groups (5 patients on each group) had received systemic antibiotics. They reported the group that had been treated with I & D had a smooth recovery without mastoidectomy (Al-Serhani 1998). However, they suggested that I & D be done on inpatients with close observation to detect any deterioration, relapse or intracranial complications. In this patient, cortical mastoidectomy was the treatment of choice as there was a mastoid abscess.

Currently, a few groups had reported in their studies that chronic suppurative otitis media (CSOM) can be the source of infection for development of acute mastoiditis and mastoid abscess. But most of these patients had an associated cholesteatoma (Al-Serhani 1998).

Inadequate diagnosis and treatment are factors that contribute to the high prevalence of AOM in children in our practice. Cortical mastoidectomy is the treatment of choice along with systemic antibiotics. In centres without an Otorhinolaryngologist, I & D with systemic antibiotics and close observation for early detection of complications may be carried out. The primary aim of the treatment in acute otitis media is to prevent complications such as mastoid or intracranial abscess.

CONCLUSION

General practitioners played an important role in managing a child with AOM in

order to prevent complications. In this case, there was incomplete course of antibiotic given to the patient. Therefore we advocate that all AOM patients should be treated with antibiotics for a longer duration and to have early ENT referral.

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