

MANAGEMENT OF SEVERE UPPER AIRWAY OBSTRUCTION IN INFECTIOUS MONONUCLEOSIS: EMERGENT ADENOTONSILLECTOMY

ACİL ADENOTONSİLLEKTOMİ: EBV'YE BAĞLI İLERİ DERECE ÜST HAVA YOLU OBSTRÜKSİYONU
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Özet

Enfeksiyöz mononükleoz (EMN) çoğunlukla Ebstein-Barr virüsünün (EBV) neden olduğu, sıklıkla akut adenotonsillit, ateş ve lenfadenopatinin eşlik ettiği yaygın sistemik bir enfeksiyondur. Hastalığın hematolojik, hepatik, solunumsal ve psikolojik komplikasyonları en sık görülen komplikasyonları olup üst hava yolu obstrüksiyonu ciddi komplikasyondur ve fatal seyredebilir. Bu sunuda EBV adenotonsillit enfeksiyonu sonrası üst hava yolu obstrüksiyonuna bağlı solunum sıkıntısı gelişen, acil adenotonsillektomi operasyonu yapılan bir olgu sunulacaktır.

Anahtar kelimeler: Enfeksiyöz mononükleozis, Ebstein barr virus Tonsillit Üst solunum yolu obstrüksiyonu Tonsillektomi

Abstract

Infective mononucleosis (IM) is a viral disease affecting a wide range of organ system especially in the head and neck region. Usual manifestation of IM is acute acute pharyngotonsillitis, fever and lymphadenopathy. In some patients adenotonsillar tissue is so severe affected that can compromise the airways. We present a case of a 5-year-old girl with IM accompanied by upper airway obstruction symptoms of stridor and difficult breathing. Results The patient was diagnosed as IM with severe upper airway obstruction. Initial steroid treatment resulted no clinical response. Therefore, hot adenotonsillectomy was performed. Hot adenotonsillectomy can be life-saving and have dramatic benefits especially in patients with severe upper airway obstruction as a complication of IM.

Keywords: Infectious mononucleosis, Ebstein barr virus Tonsillitis Upper airway obstruction Tonsillectomy

Introduction

Infective mononucleosis (IM) is a common systemic infection mostly caused by the Ebstein-Barr virus (EBV) and often presents as the clinical triad; acute pharyngotonsillitis, fever and lymphadenopathy [1]. The average annual incidence of the clinical presence is calculated at approximately 500 cases/100 000 persons/year, and the highest incidence reveals at age 15–24 years [2]. Generally, IM has a self-limiting course. It is possible to become fulminant infection, however, many complications including a wide variety of neurologic, hematologic, hepatic, respiratory, and psychological complications also may be observed [3]. The complications of IM pharyngotonsillitis may include peritonsillar abscess and upper airway obstruction which occur about one per cent of cases [4]. Upper airway obstruction complication of IM can be fatal.

When upper airway obstruction occurs, treatment opinions vary by authors about the most suitable way to manage this life-threatening complication [5]. Sometimes clinical presentation can be required to hospital admission for supportive management and administration of corticosteroids, emergency tracheostomy and acute

adenotonsillectomy [6]. Acute adenotonsillectomy is suggested in some cases, to manage prompt resolution of upper airway obstruction (UAO), dysphagia and systemic symptom.

The aim of this paper is to present our approach to the management of severe tonsillopharyngitis secondary to IM, in the review of literature. Acute adenotonsillectomy was used in treatment.

Case Report

A 5 year old girl was admitted after 20 days of suffering from a sore throat. She had had recurrent episodes of tonsillitis for the previous 2 years. Five days prior to admission she was seen by a pediatrician because of a sore throat, difficulty in swallowing, elevated temperature, bilateral diffuse lymphadenopathy in her neck and bilateral redness and hypertrophy of the tonsils. Despite hospitalization for four days and given parenteral ampicillin 200 mg/kg/day her symptoms worsened in the 24 hours preceding admission, with difficult breathing and a temperature of 40 C. When difficulty in breathing occurred, prednol IV 2 mg/kg had been administered and she had been referred to our clinic.

Examination on admission showed a child in marked respiratory distress, with dysphagia and drooling, and 'hot potato' voice without trismus. Physical examination revealed huge kissing tonsils, without any exudates, and edema of the uvula but no bulging of the soft palate. (**Figure 1**)



Figure 1
Enlarged tonsils obstructing the upper airway

Bilateral diffuse cervical lymphadenopathy was observed. Laboratory tests showed hemoglobin values of 9,5 mg/dl, white blood cell count of 29,800/cm with 17% neutrophils and 73% lymphocytes, AST of 86 U/l, ALT of 37 U/l and positive results for Epstein-Barr virus antigens. Bilateral diffuse cervical lymphadenopathy including level 1, 2, and 3 was observed with USG, in which biggest one was 3,5x1,5 cm. Also, increased volume of spleen and liver was seen by abdominal USG.

Monitoring during hospitalization revealed oxygen saturation level reduced to as low as 80±84%. Then, she was taken to surgery and a "hot" adenotonsillectomy was performed to relieve the severe upper airway obstruction.

Surprisingly enough, large, membranous, kissing tonsils were found in operation. Although the procedure was easy to perform, because of infected tonsils, separation from the tonsillar fossa was challenging. The postoperative

course was uneventful.

Discussion

IM is a common disease, particularly among adolescent and young adults. The disease generally have a self-limiting nature, however, current data shows that it is also related noteworthy morbidity and mortality [7]. In literature, Wolfe and Rowe in 1980 reported 33 fatalities [8]. Splenic injury, hepatic dysfunction, neurological disorder, pneumonitis, haematological disorder, and pericarditis along upper airway obstruction have been recorded as the possible complications of IM in literature [9]. The clinical properties of acute IM may be due to an immunopathologic response caused by EBV that induces T-cell proliferation and activation and increases in serum immunoglobulins. Although IM acute clinical features associated with patient's immunopathologic response, pharyngotonsillitis may have influence over odynophagia, dysphagia, dehydration and UAO in severe condition.

UAO related to acute IM has been occurred between one to 3,5 percent. Considerable UAO arise from palatal and nasopharyngeal tonsil hypertrophy and inflammatory edema of surrounding soft tissues. The cardinal symptoms of severe UAO are dyspnoea, tachypnea, stridor, intercostal and suprasternal retractions and cyanosis. This symptoms are well-recognised and required intervention. It is essential to provide adequate airway in initial process. The important issue is to decide whether patient need intubation or require conservative interventions during evaluation procedure. Clinical measures (e.g. pulse and respiratory rate, scoring system) and investigations (e.g. arterial blood gas, lateral cervical X-rays) are much less reliable than clinical decision about patient's general appearance to an experienced physician. Patient who has significant UAO can be observed by pulse oximetry and treated with intravenous hydration, humidified air, analgesic/antipyretic, and systemic corticosteroid [10]. Patients with mild, uncomplicated IM are recommended to manage with supportive care only. Nonsteroidal anti-inflammatory agents (NSAIDs) are utilized for managing discomfort in throat, fever, and malasia. Corticosteroids are prescribed for IM associated complications, involving UAO [10]. However, it is a matter of debate that the benefit of corticosteroids for symptom control in uncomplicated IM [7]. Some authors point out that adverse event or complications related to corticosteroid treatment which may be lead to potential infectious complications interrelated with immunosuppression [11]. But, there is not enough clinical controlled trial and adverse outcomes associated with use of steroid have not proven. Take into account lack of information regarding this adverse effect, corticosteroid treatment appear to widely used to treat patients with UAO in this condition. However, for patient whose is receiving steroid, physicians should be careful monitoring for signs or symptoms mnemonic of secondary bacterial infection.

If patient's symptoms continue to be worsen in spite of medical management including steroid therapy, surgical intervention can be required. Both tracheostomy and adenotonsillectomy in the course of acute infection have been suggested as surgical choice for airway obstruction in IM, latter having arised as the better option [11].

When UAO presents, intubation should be first option before tracheostomy. However, emergent adenotonsillectomy can relieve UAO and decrease tracheostomy need. Although there is a bleeding tendency due to inflammation, emergent adenotonsillectomy can be considered before thacheostomy. But, there is not enough data available on emergent adenotonsillectomy safety and efficacy in patients with IM presented with severe upper airway obstruction. Further studies are needed to clarify this issue.

Our patient improved quickly postoperatively, allowing discharge one day later after acute adenotonsillectomy. Adenotonsillectomy generally is well-tolerated and followed by rapid recovery and discharge.

Conclusion

Although a variety of acute complications can be revealed, the prognosis for IM is quite favorable. Most of time,

the complications and the disease improve spontaneously without specific treatment, and serious complications are uncommon. One of the most common indications is UAO for IM in terms of hospitalization and it appears in less than 5% of all patients [12]. We recommend that adenotonsillectomy is the optimal treatment in those patients who have upper airway obstruction secondary to tonsillopharyngitis whose condition does not improve after parenteral corticosteroid.

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