

Case Report

Acute Respiratory failure due to upper airway obstruction in the setting of infectious mononucleosis

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Background: Epstein-Barr virus (EBV) infection can be asymptomatic or present as infectious mononucleosis (IM) with fatigue, fever, sore throat, lymphadenopathy and tonsillar enlargement, as the most common presentation. The condition is generally benign and self-limited. Upper airway obstruction in IM occurs in less than 5% of adolescences and could be fatal requiring immediate intervention. Systemic corticosteroids and tonsillectomy have been recommended.

Case Report: We described the case of an 18-year-old previously healthy male with diffuse pharyngeal erythema, very tender and enlarged anterior and posterior cervical lymph nodes, leading to upper airway obstruction. After a dose of dexamethasone, he was transferred to our institution for further management. He received treatment with antibiotics and dexamethasone. Follow-up 2 weeks later with otolaryngologist revealed no symptoms.

Conclusion: The patient described in this report suffered from elongated palate, diffuse swelling and edema of the Waldeyer's tonsillar ring associated with significant and severe narrowing of the nasopharyngeal airway, a rare complication of infectious mononucleosis in adults. Airway compromise can develop rapidly and thus patients should be advised about this serious complication in addition to splenic rupture.

We advocate that Steroid treatment should be considered in cases of airway emergency for 72 hours in an attempt to prevent the need for intubation or tracheotomy and to help the patient to recover his health.

Keywords: Infectious Mononucleosis, upper airway obstruction, elongated palate, oropharyngeal intubation.

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Introduction

Epstein-Barr virus (EBV) is a γ -herpesvirus with a double-stranded DNA genome, of which primary cellular target is the B-lymphocyte and the entire lymphoreticular system. It is estimated that up to 95% of the adult world population is infected with the EBV [1,2]. Infectious mononucleosis (IM) clinical presentation is characterized by sore throat, fever, fatigue and tonsillar enlargement in up to 98% of young adult cases [3,4]. Upper airway complications, although rare, can occur in up to 3.5% of older adolescents and could be a fatal condition if

untreated [1,2]. Systemic corticosteroids and tonsillectomy have been recommended.

Case Report

An 18-year old male presented to the emergency room (ER) of a community hospital with a 2-day history of sore throat, fever, fatigue, and cervical lymphadenitis. He was diagnosed with IM by a positive Monospot test and sent home on analgesic-antipyretic medication. He returned to the ER 24 hours later with inability to speak and stridor, requiring emergent oropharyngeal intubation. After a dose

of dexamethasone, he was transferred to our institution for further management. On our initial examination, he was found to have significant and tender cervical anterior and posterior lymphadenopathy, elongated palate and absent tonsils. White blood cell count was 9,520 per mm^3 with lymphocytes of 44.4 %. A repeat Monospot test was positive. A computed tomography (CT) of face and neck with contrast performed before intubation were showed in figures 1a, 2a, and 2b. He received treatment with antibiotics and dexamethasone. Follow-up CT of face and neck 3 days later revealed no major changes. Because of concern with possible need for prolonged intubation, we elected to proceed with extubation under direct close airway monitoring in the operating room, if need for tracheostomy was indicated. He was extubated without incidents and discharged home on oral steroids and antibiotics 24 hours later. Follow-up 2 weeks later with otolaryngologist revealed no symptoms and he was back to work full time.

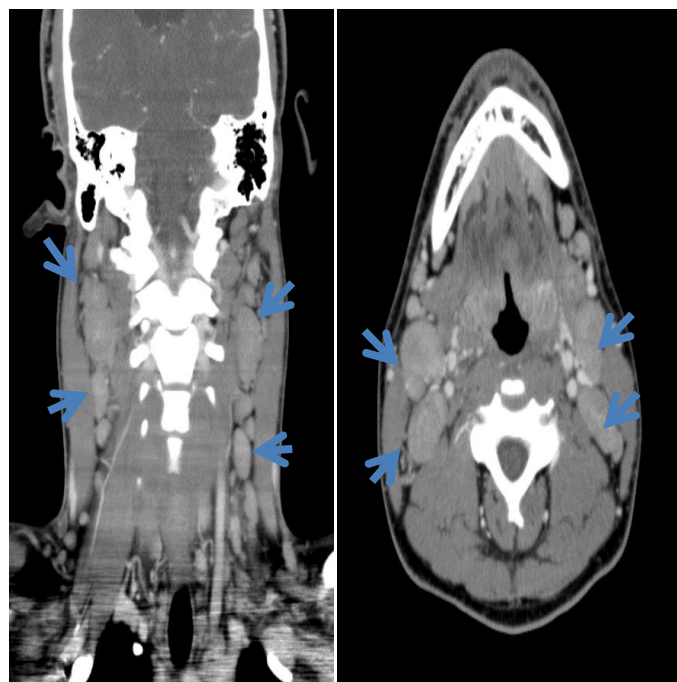


Figure 2a) and 2b) CT scan with contrast, sagittal and axial images show associated diffuse cervical lymphadenopathy involving the bilateral cervical (blue arrows).

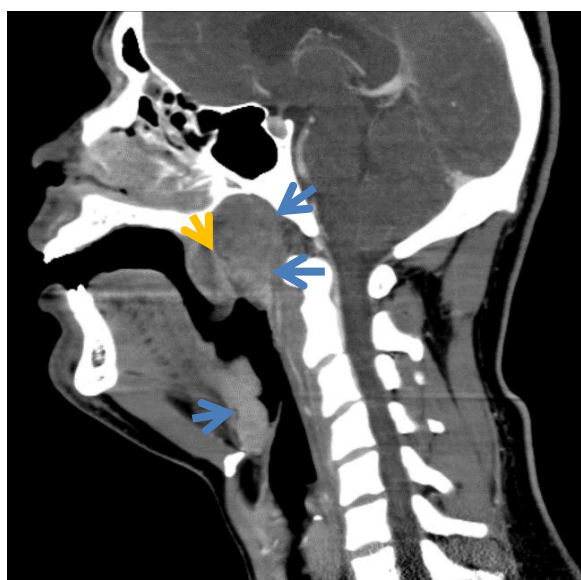


Figure 1 A Sagittal CT scan of the face and neck with contrast shows marked diffuse swelling of the Waldeyer's tonsillar ring (blue arrows), resulting in severe narrowing of the nasopharyngeal airway (orange arrow).

Discussion

The improvement in sanitary conditions in industrialized countries has decreased the incidence of EBV in childhood but has remained high in the group of 15 to 24 years^[2,4]. Classic IM is a disease of adolescents and young adults.

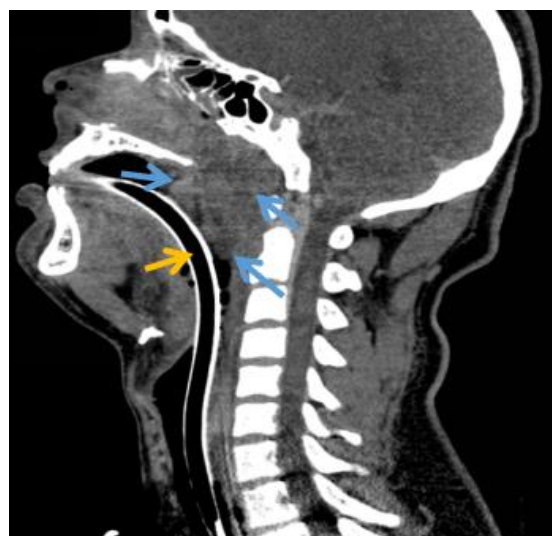


Figure 3 Sagittal CT scan of the face and neck with contrast after endotracheal tube placement (orange arrow), with marked diffuse swelling/hyperemia of the adenoid tissue (blue arrows) and severe narrowing of the nasopharyngeal airway.

Rare complications of IM include hemolytic anemia, thrombocytopenia, malignancy, splenic hemorrhage and acute upper airway obstruction (UAO). UAO generally occurs early and involves several anatomic sites such as severe inflammation of Waldeyer's tonsillar ring, edema of the pharynx and epiglottis, and pseudomembrane formation

in the upper airway. In our case report, we found the importance of involving the otolaryngologist in managing patients with airway obstruction in the setting of infectious mononucleosis.

No standard definition exists of UAO in IM or consensus guidelines on monitoring, management or decision making for this subgroup of patients. Historically, the standard treatment of UAO in IM includes short courses of corticosteroids or even tonsillectomy.

The management of Infectious Mononucleosis requires bedrest, rehydration, antipyretics, and antibiotics if secondary bacterial infection is suspected [3]. However, physician should consider the role of steroids and in some case surgical intervention. The use of steroid is advocated as it rapidly reduces tissue swelling in patients with IM [4]. Glucocorticoid therapy is not indicated for uncomplicated IM and in fact may predispose to bacterial superinfection [5]. Some experts suggest surgical removal of the tonsils for those patients who do not respond to medical management [6].

Conclusion

Airway compromise, a rare complication of infectious mononucleosis in adults, can develop rapidly and thus patients should be advised about this serious complication in addition to splenic rupture.

Although the patient described in the case report has a history of tonsillectomy, he developed swelling in peritonsillar ring tissue leading to airways obstruction. We suggest keeping this possible complication in mind when treating adolescent population even in the absence of history of tonsillectomy.

We advocate that Steroid treatment should be considered in cases of airway emergency for 72 hours in an attempt to prevent the need for intubation or tracheotomy and to help the patient to recover his health.

Conflicts Of Interest

The authors declare that they have no competing interests.

Acknowledgments

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