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Infectious mononucleosis and bilateral peritonsillar abscesses resulting in airway obstruction

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Abstract
Upper airway obstruction is an uncommon but recognized complication of infectious mononucleosis. The management depends upon the degree of airway compromise. In the case described, severe airway obstruction was treated by securing the airway with awake fibre-optic endoscopic intubation and then proceeding to tonsillectomy. Bilateral inferiorly loculated quinsies were encountered unexpectedly and drained. This is the first report of 'bilateral' quinsies, associated with infectious mononucleosis and severe airway obstruction. The association, pathogenesis and significance of this finding are also discussed.

Key words: Infectious mononucleosis; Peritonsillar abscess; Airway obstruction

Introduction

Upper airway obstruction is an uncommon but well-documented complication of infectious mononucleosis, with an incidence estimated at one to 3.5 per cent (Johnsen *et al.*, 1984; Sumaya and Yasmen, 1985). The obstruction is usually mild, running a self-limiting course, but on rarer occasions can be severe (Wohl and Isaacson, 1995). Peritonsillar cellulitis is associated with infectious mononucleosis, however, progression to peritonsillar abscess or quinsy is rare (Snyderman and Stool, 1982). Quinsy complicating infectious mononucleosis with resultant life-threatening upper airway obstruction is even more uncommon.

Case report

A penicillin-allergic 18-year-old male presented with a five-day history of a sore throat and odynophagia. The patient had a soft biphasic stridor, without evidence of respiratory distress. He was afebrile with an oxygen saturation of 96 per cent on room air. He had a 'hot potato voice' and mild trismus. Intra-oral examination revealed huge, symmetrical tonsils, with a thick overlying membranous exudate. The oropharyngeal airway was small, and there was moderate bilateral cervical lymphadenopathy.

The patient was admitted to the high dependency unit for close airway observation. He was administered intravenous erythromycin and dexamethasone. His white cell count was 12,000, with 90 per cent lymphocytes. Once the Monospot test was found to be positive and atypical lymphocytes confirmed, antibiotics were ceased, however, steroids were continued. Over the next two days, he made only mild symptomatic improvement and still had difficulty swallowing and talking properly.

On day 3, he became rapidly unwell and febrile. He developed marked inspiratory stridor, respiratory distress and somnolence as he tired. A superimposed quinsy was suspected but peritonsillar aspirate in the upper and outer quadrant did not reveal any pus. A nasopharyngeal airway was inserted and the patient immediately transferred to the operating room. Fibre-optic awake naso-tracheal intubation was performed, then general anaesthesia induced. The patient underwent a bilateral palatine tonsillectomy. Blood loss was minimal. Loculated quinsies were unexpectedly found at both inferior tonsillar poles and these collections were evacuated. Figure 1 shows the right sided quinsy, with the tonsil retracted infero-medially. In Figure 2, the left tonsil has been removed, and the right tonsil replaced in its original position to demonstrate the extent of prior airway obstruction. The pus grew group C streptococci as well as

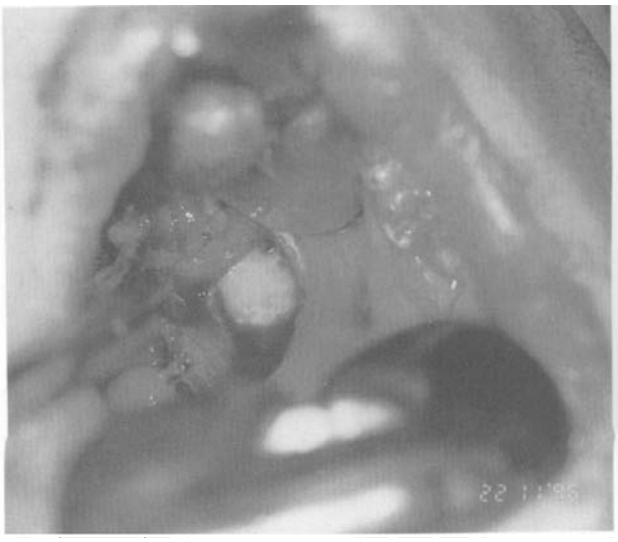

FIG. 1
Oropharyngeal photograph with the mouth gag in place and left tonsil removed. The right tonsil is retracted infero-medially to demonstrate the loculated quinsy at the inferior pole.

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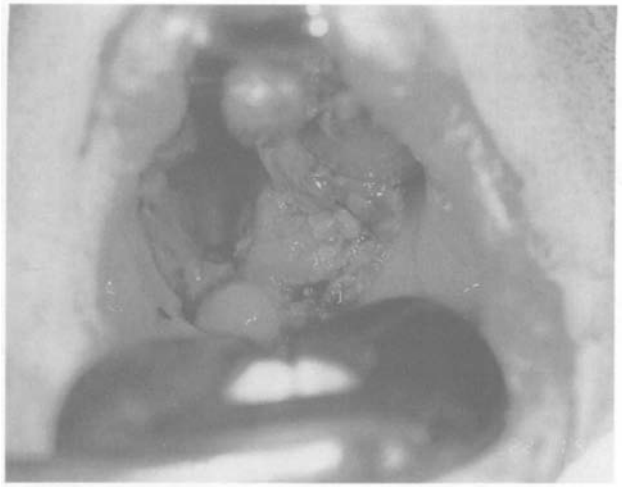

FIG. 2

The left tonsil has been removed and the right tonsil replaced in its original position. This demonstrates the degree of palatine tonsil hypertrophy and the extent of pre-operative oropharyngeal airway occlusion

oral flora, and antibiotics were recommenced. The patient made a steady recovery and was discharged uneventfully three days later.

Discussion

Airway obstruction in infectious mononucleosis (IM) is usually caused by lymphoid proliferation and oedema of tissue in Waldeyer's ring (Snyderman and Stool, 1982). However, laryngeal oedema (Ravenna and Snyder, 1948), pan-pharyngeal and transglottic oedema (Wohl and Isaacson, 1995), and membranous airway obstruction (Gutsell, 1971) have also been reported.

Mild airway obstruction in IM presents as a soft stridor (Woolf and Diedericks, 1989). Patients can generally be successfully managed conservatively. Patients should be admitted to a high dependency unit for airway observation. Corticosteroids are often administered to shrink lymphoid tissue.

Moderate airway obstruction in IM is characterized by alar nasal flaring, suprasternal retraction and stridor. A management option which is conservative and non-operative includes passing a naso-pharyngeal tube to bypass the lymphoid obstruction and maintain airway patency (Snyderman and Stool, 1982). This was used in our case but only as a temporary measure, before definitively securing the airway.

Severe airway obstruction in IM is manifested by worsening stridor, tachypnoea, tachycardia and hypoxia. As respiratory failure progresses, the patient may become hypercarbic and somnolent (Wolfe and Rowe, 1980). At this stage, the airway needs to be secured by intubation and thereafter the treatment is usually surgical, either by 'hot' tonsillectomy or tracheostomy. The favoured options to ensure a safe airway are either: awake, fibre-optic flexible endoscopy assisted naso-tracheal intubation, or inhalational induction by general anaesthesia with intubation (Gordon, 1972). The otolaryngologist should have equipment ready to perform a bronchoscopy if there are problems with airway access, and be prepared for emergency tracheostomy.

Tracheostomy is a difficult procedure to perform hastily under local anaesthesia in a hypoxic and agitated patient, whose respiratory distress increases on lying supine. It is generally reserved for those patients with the Guillan-Barré syndrome who develop progressive alveolar hypoventilation and bulbar paralysis and require prolonged airway support (Eaton *et al.*, 1965). In the case described here, treatment by tracheostomy alone would clearly have been inadequate because the bilateral quinsies would not have been drained and hence, major suppurative neck complications could potentially have developed.

Nowadays, the surgical treatment of choice for severe airway obstruction with IM is immediate, or 'hot' tonsillectomy. Palatine tonsillectomy appears to be a safe and well-tolerated operation in IM (Woolf and Diedericks, 1989). The usual cause of the upper respiratory obstruction is thus directly and rapidly relieved, swallowing is improved, and an external scar is avoided (Yeager, 1964; Ranta and Grahne, 1956).

Treatment of IM with airway obstruction with corticosteroids has been common over the past three decades (Schumacher *et al.*, 1963; Woolf and Diedericks, 1989). Peritonsillar erythema is seen in association with this viral disease, however, whether three days of high dose steroids precipitated the bilateral quinsies seen in this case is speculative. The risk that steroids may provoke a peritonsillar abscess has not been firmly established, but has certainly been associated with IM (Handler and Stuart-Warren, 1979).

This case raises the question of whether antibiotics should be given to patients with IM, or at least to those being administered steroids. This is the first report specifically detailing the occurrence of 'bilateral' quinsies and severe airway obstruction with infectious mononucleosis. When the patient's condition rapidly deteriorated, underlying quinsy was suspected, and an aspirate performed in the usual site which was negative. Fortunately, the inferiorly loculated quinsies in this uncommon location were encountered at tonsillectomy, and evacuated. Tracheostomy or nasopharyngeal stenting would have been ineffective in adequately managing the additional complication of quinsy. This case highlights the role of tonsillectomy in treating both the airway obstruction caused by massive lymphoid hyperplasia in infectious mononucleosis and the associated suppurative complication.

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