

Otorhinolaryngologic Presentations of Infectious Mononucleosis

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Infectious mononucleosis is frequently encountered in pediatric practice. Symptoms of malaise, fever, fatigue with sore throat, cervical adenopathy, and splenomegaly are well known manifestations of the disease. The otolaryngologist usually has minimal contact with these patients. Most present with symptoms that are managed by their pediatricians and only a small percentage of those affected children are hospitalized.

A review of admissions at Children's Hospital of Pittsburgh between 1970 and 1980 revealed 61 children whose presenting symptoms of infectious mononucleosis warranted hospitalization. Thirty-three (55 per cent) presented with otolaryngologic complaints (Table 1). One-third of those children admitted had some degree of airway obstruction. The remaining presentations were peritonsillar cellulitis (1), facial paralysis (1), periorbital cellulitis (3), epistaxis (2), suppurative lymphadenitis (1), external otitis (1), and sinusitis (2). The reason for admission of the remainder is shown in Table 2.

Infectious mononucleosis has been known as a disease of young adults, usually affecting those between 15 and 35 years of age. The review of our series shows equal distribution in children ≤ 5 years (19), 6 to 10 years (21), and ≥ 10 years (21). There was no sex predilection and 79 per cent were Caucasian. Sixty-seven per cent had splenomegaly which concurred with the incidence of other series. Ten to 15 per cent of these children are known to have group A beta-hemolytic streptococcal throat culture. Our finding is similar with 18 per cent. Thirty-nine children had white blood counts greater than 10,000 per cu mm. A lymphocytosis with atypical cells occurred in 78 per cent.

The following cases illustrate otolaryngologic presentations of infectious mononucleosis that are not frequently seen by the pediatrician. A recognition of these various chief complaints and treatment modalities is important in managing this disease.

Case 1: Airway Obstruction

A three-year-old black girl presented with a four-day history of sore throat and progressive dysphagia. Examination revealed +4 hypertrophied tonsils with exudate, inspiratory stridor, and significant airway obstruction. There was marked cervical adenopathy and the tip of the spleen was palpable. The child appeared toxic and dehydrated. The white blood count was 19,200 with a lymphocytosis. A "monospot" was positive. The lateral x-ray film of the neck confirmed adenotonsillar enlargement and airway obstruction. A throat culture was negative for group A beta-hemolytic streptococcus.

Because of imminent obstruction, a nasopharyngeal airway was placed without difficulty and secured. An intravenous line was begun and dexamethasone (Decadron) was given intravenously as a bolus (1 mg per kg) with a maximum dosage of 10 mg. One-half the initial dose was then given every six hours for four doses. The airway was removed after 24 hours without problem. Antibiotics were not administered. Oral intake gradually returned to

normal and the child was discharged on the fourth day. Follow-up was uneventful.

Discussion

Waldeyer's ring is the mass of lymphoid tissue that encircles the oropharynx and nasopharynx: the palatine and lingual tonsils, adenoids, and lateral pharyngeal bands. Airway obstruction in children with infectious mononucleosis is caused by hypertrophy of this tissue. Most children present with nasal obstruction with snoring, mouth breathing, and inspiratory stridor. Tonsillar enlargement can obstruct the oral airway. Many patients have dysphagia and are dehydrated. Significant cervical adenopathy can cause poor neck mobility.

Twenty-two children presented with airway obstruction requiring an otolaryngologic consultation: 13 were ≤ 5 years of age, 5 ranged from 6 to 10 years of age, and 4 were ≥ 10 years of age. Fifty-nine per cent were less than five years of age. Management varied over the years. However, intravenous steroids have been used more frequently since 1975. In no instance was a tonsillectomy performed. One tracheotomy was done in 1974 on a nine-year-old Caucasian girl who presented with airway obstruction.

Numerous modes of therapy have been proposed for treating airway obstruction in infectious mononucleosis. Tracheostomy was first suggested as a means of intervention in 1949 by Jones and Jones. This received considerable support in the years following. The procedure is not always straightforward though, as described by Lee in 1959. He reported a 16-year-old Caucasian girl who presented with progressive airway obstruction. A tracheostomy was performed under local anaesthesia, but because the patient could not lie still, the airway became obstructed and the patient had a cardiac arrest. The procedure was completed under general anaesthesia.

Tonsillectomy has been supported by those who feel that the disadvantages of emergency tracheostomy in children outweigh the advantages. This treatment modality was first reported in 1956 by Ranta of Finland. Since then, it has been a popular way of managing airway obstruction in infectious mononucleosis. The problems with this operation and general anaesthesia should not be viewed lightly in these children. The tonsils are usually acutely infected and friable. Liver function abnormalities and prolonged coagulation times have been reported. Consequently, bleeding may become a major issue.

Yeager reported performing a tonsillectomy on a 4.5-year-old Caucasian girl with infectious mononucleosis in 1964. During induction, a rubber airway was passed because of labored respirations and these were relieved. The operation proceeded with a blood loss of 150 to 200 mL. It was necessary to place suture ligatures in both tonsillar fossa. This case supports tonsillectomy in airway obstruction in patients with infectious mononucleosis. However, it illustrates the potential for compromise of the patient because of the significant blood loss seen with acutely infected tonsils. In addition, the airway may be successfully managed by use of a nasopharyngeal airway alone.

While our method of managing these children is more conservative, we feel that it is safe and still solves the problem of impending airway obstruction. Initially, these children receive intravenous hydration with total fluid losses being taken into account. Decadron, 1 mg per kg, with a maximum dose of 10 mg, is given initially. One-half of the loading dose is

then given every six hours for 48 hours. A soft rubber nasopharyngeal airway is placed and secured. All tubers are removed within 48 hours. Several children were maintained on doses of oral prednisone for a few days following the tube removal at the discretion of the attending physician. None of these children has returned to Children's Hospital with mononucleosis, airway obstruction, or recurrent tonsillitis. This review describes our success in managing acute airway obstruction in these patients without subjecting them to the increased risks of anesthesia and surgery. We propose that this regimen is a safe and reasonable way of treating acute airway obstruction in the pediatric patient with infectious mononucleosis.

Case 2: Facial Paralysis

A 2.5-year-old Caucasian girl presented to Children's Hospital of Pittsburgh with a three-day history of fever, sore throat, and bilateral otalgia. One day prior to admission, her mother noticed that the right side of her face was not moving well. Examination confirmed bilateral otitis media and right facial peripheral paralysis. Splenomegaly and hepatomegaly were present. Tonsils were +3 enlarged with exudate and there was cervical adenopathy. A "monospot" was positive. White blood cell count was 10,400 with a lymphocytosis. The child was begun on prednisone, 2 mg per kg per day, and ampicillin, 250 mg orally every six hours. A myringotomy was performed. The paralysis began to resolve within 24 hours and the child was completely well by the end of the week.

Discussion

Infectious mononucleosis has been associated with dysfunction of all the cranial nerves causing anosmia, parosmia, unilateral deafness, and facial paralysis most often. The relationship with facial paralysis was first described by Osell in 1937. In otitis media, it is felt that the facial nerve becomes involved secondary to swelling and compression in the fallopian canal. Complete recovery in the young patient with a viral illness is common and is related to the length of time it takes for function to begin to return.

Myringotomy is frequently used for treatment of facial nerve paralysis in otitis media. Steroids are controversial in the management of facial paralysis with a viral or idiopathic cause but were employed here with apparently good results. Patients should be followed with facial nerve stimulation and watched carefully for signs of degeneration. Because the facial nerve is frequently involved in viral infections, other causes such as mumps, chickenpox, herpes zoster, influenza, and polio should be considered. The course is one of rapid onset with slow but usually complete resolution. No topographic studies have been performed in these patients, but the course appears similar to that of Bell's palsy.

Case 3: Epistaxis

A five-year-old Caucasian girl presented to Children's Hospital of Pittsburgh with a left epistaxis of several hours' duration. She was taking erythromycin for an upper respiratory infection. Examination revealed +3 tonsillar hypertrophy, and a palpable spleen tip. White blood cell count was 8,700 with a lymphocytosis. "Monospot" was positive. A platelet count on admission was 20,000 but fell to 4,000 by the next day. A bone marrow confirmed the diagnosis of idiopathic thrombocytopenic purpura. The nose was packed with Surgicel and

bleeding was controlled. The platelet count returned to normal over the following week. No further intervention was necessary.

Discussion

Infectious mononucleosis has been associated with autoimmune hemolytic anemia and viral etiologies have been proposed for idiopathic thrombocytopenic purpura. Here, the low platelet count secondary to the idiopathic thrombocytopenic purpura was the obvious cause of the epistaxis. Cautery, nasal packing, or other routine ways of managing nosebleeds cannot overcome the basic coagulation defect. Therefore, the manipulation and trauma of these procedures must be minimized. Packing with an absorbable coagulant such as Oxycel or Surgicel will usually suffice until the underlying hematologic defect can be corrected. The child's activity should be kept to a minimum and anything that increases circulatory pressure such as leaning over, straining, nose blowing, and sneezing should be avoided.

Conclusion

We have described the significant, potentially life-threatening complications of infectious mononucleosis for which the pediatrician may require the assistance of the otolaryngologist. Recognizing the various presentations of infectious mononucleosis is of particular importance. Our approach to the pediatric airway is conservative, safe, and avoids operative intervention. Management of facial paralysis and epistaxis involves treatment of the underlying disease.