



6 Year Girl with Acute Exacerbation of Chronic Tonsillitis with Adenoid Hypertrophy

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KEYWORDS

Chronic Tonsillitis, Adenoid Hypertrophy, Leukocytosis, Bacterial Tonsillitis

ABSTRACT

Acute bacterial tonsillitis is an acute inflammation of the palatine tonsils caused by viral and bacterial infections. The main causative viruses are Epstein bar virus, H. influenzae virus, and Cocksackie virus. Tonsillitis is most common in children but rare in children < 2 years old. Adenoid hypertrophy is an obstructive condition associated with an increase in the size of the adenoids. This condition may occur with or without acute or chronic adenoid infection. The problem is described using descriptive case study method, starting from history taking, physical examination, supporting examination, diagnosis, to qualitative intervention management given to the patient. A case of a six-year-old girl with complaints of fever, nausea, and vomiting since six days before admission to the hospital is reported. Complaints were accompanied by pain when swallowing and a lump in the throat. History of recurrent cough and cold for about six months. For about two months, complaints of snoring at night that disturbed the patient's sleep. The patient also complained that sometimes his nose felt full. On physical examination, the throat mucosa was found to be pink, palatine tonsils T4/T4 and hyperemic, tonsil crypts were wide, and the pharynx and adenoids were difficult to assess. On supporting examination, adenoid hypertrophy was found. The patient was then diagnosed with Acute Exacerbation of Chronic Tonsillitis with Adenoid Hypertrophy and given therapy such as ceftriaxon inj 1gr IV 2x600mg, cetirizine syr 2x1cth, methylprednisolone inj IV 3x25mg. After control a week later, the patient's condition showed significant changes, and complaints were reduced a lot.

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INTRODUCTION

Acute bacterial tonsillitis is an acute inflammation of the palatine tonsils caused by viral and bacterial infections (Basuki et al., 2020). The main causative viruses are Epstein bar virus, H. influenzae virus, and Cocksackie virus. The main causative bacteria is group A Streptococcus beta hemolyticus. Other causes are staphylococcus, pneumococcus, or H.influenzae. Tonsillitis is epidemiologically most common in children (Amelia, 2022). In toddlers, tonsillitis is generally caused by viral infections, while bacterial infections are more common in children aged 5-15 years. Group A beta-hemolytic streptococcus is the leading cause of bacterial tonsillitis. Tonsillitis most often occurs in children but rarely occurs in children aged < 2 years. Tonsillitis is also very rare in older people aged >40 years. The incidence of recurrent tonsillitis in Europe is around 11%, with the most common complication being peritonsillar abscess. This complication occurs more often in children with a peak in adolescence, and then the risk decreases until old age (Devi et al., 2022). A peritonsillar abscess occurs more often in women than men. On examination, the tonsils appear enlarged with an uneven surface, the crypts are widened, and some crypts are filled with detritus. It feels like a lump in the

throat, dry throat, and smelly breath (Rahayu & Anggraeni, 2020). Chronic inflammation of the tonsils/tonsils occurs repeatedly and lasts long. The enlargement of the tonsils can be so significant that the left and right tonsils meet each other and can interfere with the respiratory tract. Tonsillitis in children can usually result in complaints of snoring during sleep due to the influence of the size of the tonsils, which interferes with breathing, and even complaints of shortness of breath can occur if the enlarged tonsils have blocked the respiratory tract (Rahmadayanti, 2022). Chronic tonsillitis is often accompanied by halitosis and enlarged cervical nodules. Diagnosis of tonsillitis is made using history and physical examination. Each symptom found is given a score of 1 so that if more than one symptom is found, such as cough, fever $>38^{\circ}\text{C}$, swollen tonsils, tenderness in the lymph nodes in the neck, and difficulty swallowing, then the scores are added up according to the symptoms Found. The duration of tonsillitis is also taken into account; if the tonsillitis lasts less than two weeks, then it is given a score of 1, and if it lasts for more than four weeks or persists, it is given a score of 2. The total symptom score is the sum of the number of signs or symptoms. Adenoid hypertrophy is an obstructive condition associated with an increase in the size of the adenoids. This condition can occur with or without acute or chronic adenoid infection (ShaSee et al., 2015).

This case report aims to describe a case, namely a six-year-old female with Acute Exacerbation of Chronic Tonsillitis with Adenoid Hypertrophy, starting from the history taken to the treatment given.

METHOD

This research will use a qualitative descriptive case study method. The research subject is one patient with a medical condition that requires management intervention. The sampling technique used is non-probability with research criteria focusing on disease severity, information consistency, and patient availability. Data will be collected through history taking, physical examination, supporting examination, direct observation, and medical record documentation. Data analysis is conducted qualitatively with a thematic approach to identify patterns, themes, and trends in the process of history taking, diagnosis, and intervention management. The results of the analysis will be interpreted to understand the factors that influence clinical decisions and the effectiveness of interventions provided to patients, and will be presented in the form of a comprehensive case description.

RESULTS AND DISCUSSION

The patient was examined as a 6-year-old female with complaints of fever, nausea, and vomiting six days before admission to the hospital. Complaints accompanied by pain when swallowing and a lump in the throat since four days ago. History of frequent coughs and recurrent colds for approximately six months. Complaints of snoring at night since approximately two months ago disturbed the patient's sleep. Patients also complain that sometimes their nose feels full. The patient's parents have a history of sinusitis, and the patient has a habit of drinking ice, chocolate, and snacks at school. On physical examination, the throat mucosa was pink, the palatine tonsils were T4/T4 and hyperemic, the tonsillar crypts were wide, and the pharynx and adenoids were difficult to assess.



Figure 1: T4/T4 palatine tonsils, hyperemic, widened tonsillar crypts

A supporting examination of the lateral nasopharyngeal photo showed that the adenoids appeared enlarged with the impression of acute exacerbation of chronic tonsillitis and adenoid hypertrophy. On laboratory examination, leukocytes were found to be $12.2/\mu\text{L}$ (leukocytosis).



Figure 2 X-ray examination of the lateral nasopharynx The adenoids appear enlarged.

The patient was then diagnosed with Acute Exacerbation of Chronic Tonsillitis with Adenoid Hypertrophy and given therapy in the form of ceftriaxon inj 1gr IV 2x600mg, cetirizine syr 2x1cth, methylprednisolone inj IV 3x25mg. Complications that can occur in these patients include chronic suppurative otitis media, obstructive sleep apnea, and sinusitis. In this patient, the prognosis was quite good; at the follow-up, a week later, the patient's condition showed significant changes, and complaints had reduced considerably.

Acute bacterial tonsillitis is an acute inflammation of the palatine tonsils caused by viral and bacterial infections (Palandeng et al., 2014). The main causative viruses are Epstein bar virus, H. influenzae virus, and Coxsackie virus. The main causative bacteria is group A Streptococcus beta hemolyticus. Other causes are staphylococcus, pneumococcus, or H.influenzae. Tonsillitis is generally the result of a viral or bacterial infection (Sena, 2022). The most common viral causes are rhinovirus, respiratory syncytial, adenovirus, and coronavirus. This virus usually has low virulence and rarely causes complications. Other viral causes such as Epstein-Barr (causing mononucleosis), cytomegalovirus, hepatitis A, rubella, and HIV can also cause tonsillitis. Bacterial infections are usually caused by group A beta-hemolytic Streptococcus (GABHS), but Staphylococcus aureus, Streptococcus pneumoniae, and Haemophilus influenza can also cause tonsillitis. Both aerobic and anaerobic pathogens can cause bacterial tonsillitis. Corynebacterium diphtheriae, which causes diphtheria, should be considered the etiology in unvaccinated patients. In this patient, inflammation of the tonsils occurred, which may have been caused by bacteria (Nizar et al., 2016).

Tonsillitis is epidemiologically most common in children. In toddlers, tonsillitis is generally caused by viral infections, while bacterial infections are more common in children aged 5-15 years. Group A beta-hemolytic streptococcus is the leading cause of bacterial tonsillitis. Tonsillitis most often occurs in children but rarely occurs in children aged < 2 years. Tonsillitis is also very rare in older people aged >40 years. The incidence of recurrent tonsillitis in Europe is around 11%, with the most common complication being peritonsillar abscess. This complication occurs more often in children with a peak in adolescence, and then the risk decreases until old age. A peritonsillar abscess occurs more often in women than men (Kurniawati, 2024). In this case, it occurred in a six-year-old female patient.

Tonsillitis begins with transmission through droplets, where germs infiltrate the epithelial layer. Repeated infections in the tonsils mean that at one time, the tonsils cannot kill all the germs, so the germs then lodge in the tonsils. In this situation, the body's defensive function of the tonsils becomes a nest of infection (focal infection). One day, germs and toxins can spread throughout the body, for example, when the general condition of the body declines. If the epithelium is eroded, the superstar lymphoid tissue reacts, where the inflammation occurs with the infiltration of polymorphonuclear leukocytes. Due to the repeated inflammatory process that arises, apart from the mucosal epithelium, the lymphoid tissue is also replaced by scar tissue, which will shrink so that the crypts widen. Clinically, these crypts appear to be filled with detritus. The process continues until it penetrates the tonsil capsule and eventually causes adhesion to the tissue around the tonsillar fossa. In children, it is accompanied by enlargement of the submandibular lymph glands (Darmawan, 2019).

On examination, the tonsils appear enlarged with an uneven surface, the crypts are widened, and some crypts are filled with detritus. They feel like there is a lump in the throat, dry throat, and smelly breath. Chronic inflammation of the tonsils/tonsils occurs repeatedly and lasts long. The enlargement of the tonsils can be so significant that the left and right tonsils meet each other and can interfere with the respiratory tract (Manurung, 2016). Tonsillitis in children can usually result in complaints of snoring during sleep due to the influence of the size of the tonsils, which interferes with breathing, and even complaints of shortness of breath can occur if the enlarged tonsils have blocked the respiratory tract. Chronic tonsillitis is often accompanied by halitosis and enlarged cervical nodules. Diagnosis of tonsillitis is made using history and physical examination. Each symptom found is given a score of 1 so that if more than one symptom is found, such as cough, fever >38°C, swollen tonsils, tenderness in the lymph nodes in the neck, and difficulty swallowing, the scores are added up according to the symptoms. Found. The duration of tonsillitis is also taken into account; if tonsillitis lasts less than 2 weeks, then it is given a score of 1, and if it lasts for more than four weeks or persists, it is given a score of 2. The total symptom score is the sum of the number of signs or symptoms. In this case, complaints of fever, nausea, and vomiting were found. Complaints accompanied by pain when swallowing and a lump in the throat. History of frequent coughs and recurrent colds. Since approximately two months ago, complaints of snoring at night have disturbed the patient's sleep (Feed, 2021). Patients also complain that sometimes their nose feels full.

Tonsillitis can be detected by knowing the characteristics visible on the tonsils. The characteristics that can most easily be seen are the occurrence of color changes (redness) in the tonsil area and its surroundings and the extent of swelling in the tonsils (Sunarya et al., 2015). Based on the ratio of the tonsils to the oropharynx, by measuring the distance between the two anterior pillars compared to the distance between the medial surfaces of the two tonsils, the gradation of tonsil enlargement can be divided into: T0: Tonsils enter the fossa, T1: <25% of tonsil volume compared to oropharyngeal volume, T2: 25-50% tonsil volume compared to oropharyngeal volume, T3: 50-75% tonsil volume compared to oropharyngeal volume, T4: >75% tonsil volume compared to

oropharyngeal volume. 11 In cases where pink mucous throat, palatine tonsils are found T4 /T4, hyperemia, enlarged tonsillar crypts.

Patients with acute tonsillitis and fever should generally rest in bed, be provided with adequate fluids, and have a light diet. Analgesics and antivirals are given if symptoms are severe, broad-spectrum antibiotics, such as amoxicillin, penicillin, and erythromycin—antipyretics and mouthwashes containing disinfectants. The definitive treatment for chronic tonsillitis is surgical removal of the tonsils. This procedure is performed in cases where medical or more conservative management fails to relieve symptoms. Medical management includes prolonged administration of penicillin, daily throat irrigation, and attempts to clear the tonsillar crypts with a dental or oral irrigation device. The tonsil tissue's size is unrelated to chronic or recurrent infections. Operative therapy can include tonsillectomy (Clarisy, 2022). In this case, the patient was given therapy in the form of antibiotics in the form of ceftriaxone in 1gr IV 2x600mg, antihistamine in the form of cetirizine syr 2x1ct, and corticosteroids in the form of methylprednisolone in IV 3x25mg.

According to a literature review, peritonsillar phlegm is the main complication of tonsillitis. It accounts for 2.4% of these conditions. Meanwhile, heart disease contributed to 33.33% of complications. Mitral regurgitation is the most common heart disease, with a percentage of 40%. Other complications in other studies also included cervical cellulitis (13.33%), parapharyngeal abscess (6.67%), and sepsis (6.67%). Meanwhile, in children, it often causes complications of acute otitis media, sinusitis, peritonsillar abscess, pharyngeal abscess, bronchitis, acute glomerulonephritis, myocarditis, arthritis, and septicemia. Paralysis of the soft palate muscles, eye muscles, pharyngeal muscles, laryngeal muscles, and respiratory muscles can also occur in diphtheria tonsillitis (Muhammad, 2023).

The prognosis for tonsillitis is generally excellent and resolves without complications. Most viral tonsillitis resolves within 7-10 days, whereas bacterial tonsillitis with appropriate antibiotic therapy begins to improve within 24-48 hours. Morbidity can increase if tonsillitis recurs, disrupting school and work activities. In this patient, the prognosis was quite good; at follow-up, a week later, the condition appeared to have improved, and complaints had decreased.

Adenoid hypertrophy is an obstructive condition associated with an increase in the size of the adenoids. This condition can occur with or without acute or chronic adenoid infection. As a result of this hypertrophy, choana blockage, and Eustachian tube blockage will arise. As a result of blockage of the choana, the patient will breathe through the mouth, resulting in (a) adenoid facies, namely the appearance of a small nose, anterior incisors (prominence), high pharyngeal arches which give the impression of the patient's face looking like an idiot, (b) pharyngitis and bronchitis, (c) impaired ventilation and drainage of the paranasal sinuses, causing chronic sinusitis. As a result of obstruction of the Eustachian tube, recurrent acute otitis media, chronic otitis media, and chronic suppurative otitis media can occur. As a result of adenoid hypertrophy, it will also cause sleep disorders, snoring, mental retardation, and reduced physical growth. The diagnosis is made based on clinical signs and symptoms, anterior rhinoscopy examination by looking at the restrained movement of the soft palate during phonation, posterior rhinoscopy examination (usually complex in children), digital examination to feel the presence of adenoids and radiological examination by making a lateral photo of the head (this examination is more common performed on children) In this patient, coughs and colds often occur repeatedly since approximately six months. Complaints of snoring at night since approximately two months ago disturbed the patient's sleep. Patients also complain that sometimes their nose feels full (Buik, 2019).

Adenoid hypertrophy can occur due to infectious and non-infectious etiologies. Infectious causes of adenoid hypertrophy include viral and bacterial pathogens (Ratunanda et al., 2016). Viral

pathogens associated with adenoid hypertrophy include adenovirus, coronavirus, coxsackievirus, cytomegalovirus (CMV), Epstein-Barr virus (EBV), herpes simplex virus, parainfluenza virus, and rhinovirus. Bacterial pathogens associated with alpha-, beta-, and gamma-hemolytic *Streptococcus* species, *Haemophilus influenzae*, *Moraxella catarrhalis*, *Staphylococcus aureus*, *Neisseria gonorrhoeae*, *Corynebacterium diphtheriae*, *Chlamydia pneumoniae*, and *Mycoplasma pneumoniae*. Non-infectious causes of adenoid hypertrophy include gastroesophageal reflux and allergies. In patients who often experience recurrent infections and leukocytosis is found in patients, the possible cause is a bacterial infection (Novialdi, 2019).

Lateral head and neck radiographs have been used to assess adenoids, especially in young children who are fussy or uncooperative. Videofluoroscopy has also been described as determining the degree of adenoid hypertrophy. Both radiographic methods have demonstrated reliability in diagnosing adenoid hypertrophy. In this patient, a radiographic examination of the lateral nasopharynx was carried out, and it was found that the adenoids appeared enlarged with the impression of acute exacerbation of chronic tonsillitis and adenoid hypertrophy (Udin, 2019).

In managing adenoid hypertrophy, antibiotics can be given as the first line of treatment. Amoxicillin can be used for acute uncomplicated adenoiditis. However, for chronic or recurrent infections, beta-lactamase inhibitors such as clavulanic acid should be included. Clindamycin or azithromycin are considered alternatives in patients with penicillin allergy. Steroids can be given as additional therapy with the benefit of reducing the size of the adenoids. In adenoiditis that has experienced adenoid hypertrophy, surgical treatment of adenoidectomy is performed using curettage using an adenectomy.

Complications of adenoid hypertrophy are often seen as complications of persistent middle ear effusion and sleep-disordered breathing that can occur due to untreated adenoid hypertrophy. Children with adenoid hypertrophy are at risk for speech, language, and learning difficulties as a result of conductive hearing loss that can occur with persistent secondary middle ear effusion. Adenoid hypertrophy also places patients at risk for sleep-disordered breathing and sleep apnea. The prognosis is that adenoid hypertrophy is generally a self-limiting condition that disappears with adenoid atrophy and deterioration in adolescence.

CONCLUSION

Acute bacterial tonsillitis is an acute inflammation of the palatine tonsils caused by viral and bacterial infections. The main causative viruses are Epstein bar virus, H. influenzae virus, and Coxsackie virus. The main causative bacteria is group A *Streptococcus beta hemolyticus*. Other causes are staphylococcus, pneumococcus, or H.influenzae. Meanwhile, adenoid hypertrophy is an obstructive condition associated with an increase in the size of the adenoids. This condition can occur with or without acute or chronic adenoid infection. A 6-year-old girl was examined who was diagnosed with Acute Exacerbation of Chronic Tonsillitis with Adenoid Hypertrophy. The patient was then given ceftriaxon inj 1g IV 2x600mg, cetirizin syr 2x1ct, methylprednisolone inj IV 3x25mg. In this patient, the prognosis was quite good; at the follow-up, a week later, the patient's condition showed significant changes, and complaints had reduced considerably.

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