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Case Report

Late-Onset Neonatal Group B Streptococcus Bacteremia Presenting with Acute Parotitis

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Abstract

Acute bacterial parotitis is a rare disease in children, especially in children < 3 months of age. Typically it is characterized by parotid gland swelling and pus drainage from Stenson's duct. The most common pathogen is Staphylococcus aureus, but other microorganisms can be implicated; some less frequent agents are other gram-positive cocci, including group B Streptococcus. We present an isolated case of late-onset Group B Streptococcus bacteremia presenting with acute parotitis in a 50-day-old baby boy. The baby was brought to our hospital with a few hour history of irritability, poor sucking and one febrile temperature spike of 39° C, later the baby developed hyperemia with sharp margins and swelling over the left preauricular and submandibular region and jaw line, and drainage of pus into the oral cavity was observed. The laboratory results were nonspecific, but suggested acute bacterial infection; the ultrasonography of the left parotid and preauricular region showed changes, which were consistent with acute parotitis. Later Group B Streptococcus agalactiae was detected in the blood culture. The patient's status improved after he was started on antibiotics, and he was discharged completely well on the 9th day of hospitalization.

Keywords: parotitis; Group B Streptococcus; GBS

Introduction

Acute bacterial parotitis characterized by parotid swelling and other inflammatory signs is a rare disease in children below 3 months of age. The most common pathogen is Staphylococcus aureus, but other microorganisms can be implicated. We describe previously healthy 50-day-old infant with late onset group B Streptococcus (GBS) bacteremia with acute parotitis, who presented with fever, irritability, reduced feeding and swelling of the left parotid. Laboratory tests showed increased inflammatory tests with normal serum amylase concentration. Ultrasound findings suggested acute parotitis. Empirical antibiotic therapy was immediately started and clinical improvement was observed within the first 48 hours, with complete symptom resolution within 72 hours. The baby was discharged after 9 days.

Case report

A 50-day-old baby was brought to our hospital with a few hour history of irritability, poor sucking and one febrile temperature spike of 39° C. The boy was born at full term via natural vaginal delivery with a birth weight 3950g. Prenatal and postnatal history was without any complications. He was breast-fed, and there was no history of trauma or mistreatment. On admission, the baby was irritable but nontoxic appearing, heart rate 194/min, body temperature 38.5° C. General examination revealed no remarkable changes.

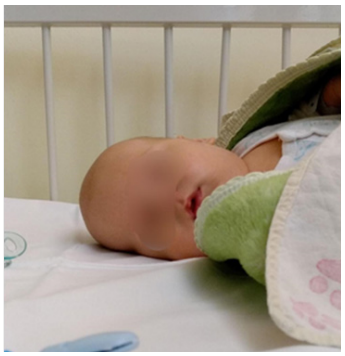

Figure1: Swelling of the left submandibular and preauricular region noted on examination on the 1st day of admission.

Figure 2: Hyperemia of the left submandibular and preauric -ular region.

During the stay in the emergency department the baby developed hyperemia with sharp margins and swelling over the left preauricular and submandibular region and jaw line (Figure 1 and Figure 2), and drainage of pus into the oral cavity was observed. The baby was holding head in coercive position and exerted pain and discomfort when turning head to the left side. At admission laboratory tests revealed white blood count of 12 660/mm3, hemoglobin of 9.5 g/dL, platelet count 421 000/mm3, C-reactive protein of 9.62 mg/L and Il-6 of 4972 pg/mL. In peripheral blood smear, 86.9% polymorphnuclear leukocytes, 8.8% lymphocytes and 4.0% monocytes were observed. Biochemical parameters and serum amylase levels were normal. The next day C-reactive protein increased to 94.12 mg/L. Ultrasonography (USG) of left parotid and preauricular region showed enlarged parotid gland with edematous tissue and increased blood flow, also enlarged intragandular and submandibular lymph nodes were observed, which were consistent with acute parotitis. Blood culture was obtained and intravenous Ceftriaxone and Clindamycine treatment was started. On the second day of antibacterial treatment hyperemia was no longer observed and the child was afebrile, on the fourth day the swelling of the submandibular and preauricular region was completely gone. Group B Streptococcus agalactiae was detected in the blood culture. Therapy with intravenous Ceftriaxone was discontinued after 7 days and intravenous Clindamycine was changed to oral Clindamycine therapy which was given for 9 days total. The boy was discharged on the 9th day of hospitalization with no complaints.

It should also be reminded that a written informed consent was obtained from the patient's parents prior to gathering and publishing the data

Discussion

Infants ≤60 days old are at increased risk of bacterial infections, because of exposure to bacterial pathogens in the perinatal period and lack of vaccine induced immunity [1, 2]. Viral infections cause most episodes of acute fever in infants ≤60 days of age, but 2%-5% of these infants have bacteremia and/or invasive bacterial infection [3, 4]. Acute bacterial parotitis is a rare infectious disease in children. It is characterized by parotid gland swelling and pus drainage from Stenson's duct. The predisposing factors are prematurity, low birth weight, dehydration, oral trauma, orogastric tube, immunosuppression, male gender and congestion in the parotid gland. However, it was reported in healthy ones who had any risk factors before [5, 6], and it was reported to be three times more in boys than girls [7].

Infection seems to occur mainly by 2 mechanisms: retrograde flow through Stensen's duct into the parotid gland, which is facilitated by syalostasis, or by hematogenous spread from a distant focus. The parotid gland is more frequently infected than are the other salivary glands because of its exclusive serous secretions without the bacteriostatic properties of the mucoid component [8]. The documented GBS bacteraemia and the absence of purulent discharge give better support to the hypothesis of haematogenous dissemination of an unknown primary focus of infection, with secondary parotid bacterial focalization [9].

The diagnosis is based on clinical findings, such as parotid gland swelling, tenderness, erythema and heatness [8, 9]. Fever is found in less than half of the cases [7]. Purulent discharge from Stenson's duct is observed in case of suppurative parotitis. The laboratory findings include elevated inflammatory indicators such as leukocytosis with neutrophilia and elevated acute phase reactants [7, 10]. Cultures obtained from blood and purulent material from Stensen's duct are essential for accurate diagnosis and therapy guidance.

Staphylococcus aureus is the most common bacterial agent causing acute parotitis [11, 12]. Other less frequent agents are other gram-positive cocci (Streptococcus pyogenes, Streptococcus agalactiae, Streptococcus viridans), gram-negative bacilli (Escherichia coli, Klebsiella pneumoniae, Pseudomonas aeruginosa), and, rarely, anaerobic agents (Peptostreptococcus spp., Bacteroides melaninogenicus, Fusobacterium nucleatum, Prevotella spp.)[7, 8, 12].

Ultrasonography is a noninvasive and technique used to confirm the diagnosis of acute bacterial parotitis; it may reveal generalized edematous and heterogeneous gland, or evidence of abscess formation as well as ultrasonography is helpful in different diagnosis[8, 11, 13].

Intravenous antibiotic therapy is the main treatment, and antistaphylococcal antibiotics are suggested as the initial empirical ones. Based on blood culture results or culture of the Stenson's duct drainage material, antibiotic switch may be necessary; usually, 7 - 10 days of antibiotic therapy is needed [13].

Due to the prompt antibiotic treatment, complications are rare. In most cases, antibiotic therapy leads to clinical improvement within the first 24–48h, with reduction in the parotid swelling. Correct hydration and analgesia must also be carried out. Surgical treatment is rarely necessary it is reserved for cases with inadequate response to medical treatment or for patients who develop abscesses [8, 11, 12].

Conclusion

Acute suppurative parotitis is a rare condition in early infancy but it must be remembered in patients who develop with swelling in the preauricular region. The classic triad of symptoms consists of parotid swelling, pus drainage from Stenson's duct and growth of pathogenic microorganism in a blood or pus culture. Complete recovery can be achieved with hydration and appropriate antibiotic therapy.

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