ACR Case Report

Acute Suppurative Parotitis in Infancy: A Case Report in a Nigerian Tertiary Hospital

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Abstract

Acute suppurative parotitis (ASP) is a rare entity in early infancy. The clinical presentation may be non-specific. We present the case of a 90-day-old breastfed male infant with massive purulent drainage from the Stensen duct into the oral cavity. Ultrasonography of the right parotid gland revealed an enlarged parotid gland with heterogeneous echogenicity compatible with Acute Suppurative Parotitis (ASP), without any sialolithiasis. Culture of the exudate yielded growth of Staphylococcus aureus.

Based on the clinical presentations and ultrasound findings, a diagnosis of right ASP was made. The patient responded well to a 14-day antibiotic therapy and supportive measures. ASP should be considered as a differential diagnosis of a neonatal parotid swelling with purulent drainage from the Stensen duct into the mouth, since early and prompt diagnosis prevents morbidity and complications.

Keywords*: Parotitis, Infant, Infection*

Introduction

Acute non-obstructive suppurative parotitis in the past was almost confined to debilitated, post operative, dehydrated and immunosuppressed elderly patients[1].

The most common form of parotid swelling in children and young adults is mumps[2]. Without the history of epidemics and exposure, the diagnosis of mumps may be difficult.

Another form of acute parotid swelling which occurs in children is recurrent Sialadenitis, which can occur at any age[3]. Pus can be expressed from the duct and pneumococci have been reported as the predominant causative organism on culture[3]. There is usually no pain, the swelling is limited to the gland and lasts 14-20 days before subsiding spontaneously, and is often recurrent[3].

The third type of parotid swelling is acute suppurative parotitis; it is the least common and usually due to Staphylococcus aureus bacteriophage 80-81[3]. The gland is swollen, red, tender, and painful. Suppurative parotitis may be confused with Recurrent parotitis[4]. While suppurative parotitis responds to appropriate antibiotics based on culture of the pus obtained from Stensen's duct or surgical drainage, recurrent parotitis subsides spontaneously[4].

Acute suppurative parotitis (ASP) is rarely encountered in the neonatal age group and in early infancy[5-8]. The peak incidence of this disease is between the ages of 2 and 14[9]. Due to the rarity of acute suppurative parotitis, it is important to gain exact and extensive insight into the general and specific aspects of the pathological changes in the salivary glands of these age groups, for prompt diagnosis and to prevent complications, as ASP responds well to antibiotic therapy.

Case Report

A 90-day-old breastfed male infant presented with a 5-day history of cough and catarrh, 3-day history of fever and irritability, and a 1-day history of poor sucking and right facial swelling. He was delivered via caesarean section at 35 weeks of gestation on account of abruptio placentae with a birth weight of 2000g. He had poor Apgar scores and was managed for perinatal asphyxia but however had good recovery. His postnatal life was further complicated with the development of

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progressive increase in head size with craniofacial disproportion in favour of the cranium, noticed about the 60th day of life while he was being followed up post discharge. Cranial CT scan revealed congenital hydrocephalus with aqueductal stenosis for which he was commenced on Acetazolamide by the neurosurgical team, as surgery was being awaited.

On the day of re-admission, his weight was 5800 g and axillary temperature was 37.8 degree centigrade. The parents reported no history of trauma to the infant's face or head, and the mother has no history suggestive of mastitis or recent skin infection. General examination revealed an irritable, non-toxic looking, febrile infant, with normal hydration and perfusion. The anterior fontanelle was bulging but normotensive measuring 8.0x8.0 centimeters and the occipito-frontal circumference was 45 centimeters (above the 97th percentile)

Examination of the head and neck revealed craniofacial disproportion with sun-setting eyes, a 6.0×6.0-centimeter firm, diffuse, tender swelling over the right parotid region. (Fig.1). The overlying skin was erythematous and warm. Pus exuded from the right inflamed right Stensen duct especially when pressure was applied to the gland.

Complete blood count revealed a haemoglobin level of 9.4 g/dl and total white blood cell count of 23,800cells /mm3 (66.1% neutrophils, 28.9% lymphocytes).

The serum electrolytes and urea analysis were normal. Direct smear from Stensen duct showed gram positive *Cocci* and the culture yielded growth of *Staphylococcusaureus*, which was sensitive to vancomycin, meropenem, ceftriaxone, ciprofloxacin, and trimethoprim/sulfamethoxazole.

Ultrasonography of the parotid glands revealed an enlarged right parotid gland with heterogeneous echogenicity compatible with ASP, without any sialolithiasis. Based on the clinical presentations and ultrasound findings, the patient was diagnosed with acute right ASP.

He was treated with a 14-day course of parenteral Ceftriaxone at 100mg/kg/day once daily, Amikacin at 15mg/kg/day given in two divided doses and Metronidazole at 7.5mg/kg/dose every 8hours. Using Hilton's method, 1.5 mls of purulent exudates was also drained from the right parotid gland. After 2 days of parenteral antibiotic therapy, the fever resolved and by the 10th day of treatment the parotid swelling had gradually resolved.

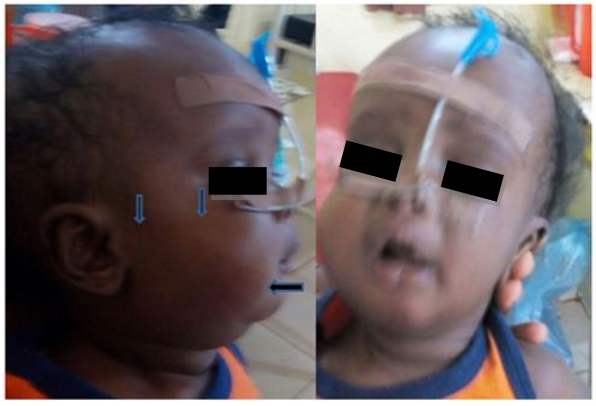

Fig 1.: left: Enlargement of the right parotid region with erythema (arrows). Right: facial asymmetry from the enlarged right parotid gland region.

Discussion

The most common presentation of ASP is fever, swelling and erythema in the pre-auricular area[10]. Purulent drainage from Stensen's duct is pathognomonic of this condition, and culture of the exudate will both confirm the diagnosis and is of great help in the treatment[10]. The diagnostic criteria of suppurative parotitis include: a combination of parotid swelling, purulent exudation from Stensen's duct, and growth of pathogenic bacteria in the pus culture[7,11]. Our patient met all these criteria. Although the diagnosis of ASP is primarily based on the patient's clinical findings, examination with ultrasound as a non-invasive and useful option may help confirm the diagnosis (as was applied in our patient). It also helps to exclude other predisposing factors such as the anatomical abnormalities of Stensen's duct, mechanical salivary duct obstruction secondary to sialolithiasis, and neoplasms[10].

Advanced imaging studies may be considered when the diagnosis is in doubt to rule out other congenital and inflammatory disorders of the parotid gland[10]. Bacterial seeding of the parotid gland can occur haematogenously, but infection is more common from oral flora tracking in a retrograde fashion into the

gland[10]. Several risk factors for the development of ASP have been identified. These include: low birth weight, prematurity, oral trauma, immune suppression, and congenital variations in the ductal structure. Sepsis and malnutrition are also frequently observed in infants with parotitis. Dehydration is another risk factor as it causes salivary stasis leading to bacterial ascent from the oral cavity[10,12]. Breastfeeding or contaminated formula can transmit bacteria and potentially cause sialadenitis[13]. In this case, the infant was breastfed but his mother did not show any signs of mastitis as it is reported by Sekhon *et. al*[14]. He was on Acetazolamide at 8mg/kg/dose 3 times daily (appropriate doses), an osmotic diuretic which can cause dehydration especially when feed volumes are not quantified. However, the history of dehydration could not be ascertained, and he was well hydrated at presentation.

Conclusion

Although ASP is rare, it should be strongly considered in cases of neonatal and infantile sepsis associated with facial swelling with or without any predisposing factors. Prompt diagnosis and treatment with the necessary antibiotics reduces morbidity and mortality in affected children.

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