



# Acute neonatal parotid abscess: A rare case report

Shreesh Kolekar, Tejas S. Chincholi, Ashok Kshirsagar, Narendra Porwal

## ABSTRACT

Acute suppurative parotitis is uncommon in children and is very rare in neonates. Most common organism isolated is *Staphylococcus aureus*. We present a 15-day-old full-term breast-fed female neonate with left-sided acute parotid abscess. The baby presented with a left preauricular swelling, pain and redness. Pus was exuded from left Stensen's duct on compression of the gland externally. Early diagnosis and proper intravenous antibiotics are the keys to the treatment.

**Key words:** Acute, bacterial, neonate, parotid gland, suppurative

## INTRODUCTION

Salivary gland infections are uncommon in neonates; however, when they occur, they most commonly involve the parotid glands. Only 44 cases have been reported till now in the English literature in the past four decades.<sup>[1]</sup> Seventy-seven percent of the neonates affected with neonatal suppurative parotitis (NSP) are male, and only 23% of the neonates require surgical drainage. The most common organism isolated is *Staphylococcus aureus*. The organisms reach the parotid gland via the Stensen's duct and less commonly through the blood. Intravenous antibiotic therapy is recommended for treatment, and surgical drainage is needed in only a few cases.<sup>[2]</sup> We report a full-term breast-fed female neonate who developed an acute neonatal parotid abscess.

## CASE REPORT

A 15-day-old full-term, breast-fed, female neonate presented with a 3 days' history of irritability, fever, poor

sucking and left preauricular swelling [Figure 1]. She was born at full-term by normal vaginal delivery in an uneventful pregnancy, and her birth weight was 2950 g. On admission, the baby was irritable and dehydrated, and her weight was 2800 g and axillary temperature was 38.5°C. Examination revealed a toxic neonate with erythema and a hot and fluctuant swelling of the left parotid gland of size 5 cm × 5 cm. Pus exuded from the left Stensen's duct on applying pressure on the external surface. Systemic examination was otherwise unremarkable. Aspiration of the swelling revealed thick pus.

Laboratory tests revealed haemoglobin 13 g/dl, white blood cells  $17.6 \times 10^9/L$ , urea 4.5 mg/dl, sodium 142 mmol/dl, potassium 5.2 mmol/dl and chloride 109 mmol/dl. Ultrasound of the parotid glands demonstrated an enlarged left parotid gland with hypoechoic areas with a few pockets of thick pus which is suggestive of acute suppurative parotitis [Figure 2].

Rehydration of the baby was done with intravenous fluid and was started on intravenous cefotaxime (100 mg/kg/day) at the time of admission. The parotid abscess was surgically drained [Figure 3], and the patient showed gradual improvement. The pus culture showed methicillin-resistant *S. aureus*. In spite of gradual improvement, the antibiotic treatment was switched to intravenous vancomycin (40 mg/kg/day) according to the pus culture. The treatment was continued for 10 days with complete recovery. On follow-up examination, there was no residue or

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Department of Surgery, Krishna Institute of Medical Sciences, Karad, Satara, Maharashtra, India

**Address for correspondence:**

Dr. Shreesh Kolekar, Department of Surgery, Krishna Institute of Medical Sciences, Karad, Satara - 415 110, Maharashtra, India.  
E-mail: drshreesh@hotmail.com



Figure 1: Pre-operative



Figure 2: Parotid ultrasonography showing abscess



Figure 3: Post-operative

abnormality of the gland, and she did not show chronic recurrent parotitis.

## DISCUSSION

NSP is a rare disease. In infants, infection of the parotid glands is more common than infection of the sub-mandibular glands.<sup>[3,4]</sup>

Spiegel *et al.* and Ismail *et al.* reviewed the cases of patients with NSP during the past five decades, mostly from case reports.<sup>[1]</sup> All neonates showed parotid gland swelling with varying degrees of erythema, warmth and tenderness. One of the risk factors for NSP is considered to be insufficient breast-feeding. Other risk factors such as pre-maturity, environmental hot weather, excessive oral suctioning nasogastric tube feeding, maternal breast abscess in a breast-fed infant,<sup>[6]</sup> cytomegalovirus parotitis and maternal treatment with methyldopa have been linked to NSP in the recent case reports. Seventy-seven per cent of the NSP are unilateral and common in male.<sup>[5]</sup> Pus exudes from the Stensen's duct on application of pressure externally to the affected gland in most of the cases.<sup>[7,8]</sup> The most common organism causing NSP is *S. aureus* followed by Gram-positive, Gram-negative and rarely anaerobic organisms.<sup>[5]</sup> In NSP, infection of parotid glands most commonly occurs by retrograde spread of the organisms from the oral cavity through the Stensen's duct and rarely by haematogenous spread.<sup>[3]</sup> Infection of the parotid gland may be initiated by dehydration leading to precipitation of the mucous or stone formation in the Stensen's duct.<sup>[1]</sup>

NSP commonly presents with fever, erythema and swelling in the preauricular region. The infection may be bilateral. Purulent drainage from Stensen's duct is pathognomonic of this condition. Leucocytosis above  $15 \times 10^9/L$  with neutrophil predominance was found in 71% of the cases, and the erythrocyte sedimentation rate was elevated in only 20% of the patients.<sup>[1]</sup> In our patient, leucocyte counts are elevated with neutrophil predominance. Laboratory findings have been non-specific and not very helpful in the diagnosis of NSP. Ultrasonography of the parotid gland usually demonstrates enlarged parotid gland with oedema, increased vascularity and hypoechoic areas.<sup>[3]</sup>

Neonatal suppurative parotitis resolves with antibiotic treatment in majority of cases. The empirical antibiotics used in NSP are a combination of anti-staphylococcal agent and an aminoglycoside, or a third-generation cephalosporin along with clindamycin or a similar medication to cover possible anaerobic infection, are good initial choices until the pus culture reports are available. After starting antibiotics, fever usually settles down within 24 h and the swelling decreases within 3–5 days. Surgical drainage is needed in only a few cases (23%),<sup>[1]</sup> where there is a delay in seeking medical attention, or the organism is resistant to the empirical antibiotic therapy. Facial palsy, salivary

fistula, mediastinitis resulting from pus tracking down the carotid sheath and rupture into the external auditory meatus are the complications of NSP, but these are uncommon due to the prompt initiation of antibiotic therapy.<sup>[3,9]</sup>

## CONCLUSION

Although acute NSP is a rare disease, it should be suspected in all the patients presenting with unilateral or bilateral preauricular swelling with redness and fever. Medical treatment with antibiotics may usually suffice in most of the cases to resolve the infection, but in a few cases, surgical drainage may be needed.

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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### Conflicts of interest

There are no conflicts of interest.

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