

# Parotid Abscess In A Late Premature Infant: A Case Report

Z Zurina\*, H L Wong\*\*, K Jasminder\*\*, S H Neoh\*\*, I G S Cheah\*\*

\*Department of Paediatrics, Faculty of Medicine and Health Sciences, University Putra Malaysia, \*\*Neonatal Intensive Care Unit, Department of Paediatrics, Hospital Kuala Lumpur

## SUMMARY

Parotid abscess is uncommon in neonates. It is frequently related to prematurity, prolonged gavage feeding and dehydration. We report a case of a late preterm infant who developed the classical manifestation of unilateral acute *Staphylococcus aureus* suppurative parotitis progressing to formation of abscess which responded to surgical drainage and antibiotic therapy.

## KEY WORDS:

*Parotid abscess, Neonatal suppurative parotitis, Late preterm*

## INTRODUCTION

Parotid abscess is an uncommon clinical entity observed in the neonatal age group. We describe a case of unilateral parotid abscess in a late preterm infant. The clinical characteristics and treatment option of this rare infection are also reviewed.

## CASE REPORT

A male infant was born at 36 weeks' gestation via an emergency lower segment Caesarean section for spontaneous premature labour precipitated by preterm pre-labour rupture of membrane. He weighed 2200 g, and was admitted to our Neonatal Intensive Care Unit for evaluation of bilateral ventriculomegaly diagnosed antenatally by serial ultrasound examinations. Postnatal cranial ultrasound examination showed multiple cysts over the caudothalamic groove with a grade II intraventricular haemorrhage and obstructive hydrocephalus. These findings were later confirmed to have resulted from intraventricular haemorrhage which had happened in-utero due to neonatal alloimmune thrombocytopenia. After delivery there was presence of persistent thrombocytopenia (with platelet count ranging between 24,000 to 126,000/mm<sup>3</sup>). The infant was found to have anti-platelet antibody directed to Human leukocyte antigen (HLA) class 1.

At day seven of life, he presented with a low grade fever associated with irritability. There was a preceding history of right eye conjunctivitis but mother reported no history suggestive of mastitis or recent skin infection. Despite the symptoms, patient tolerated gavage feeding well with expressed breast milk. Examination revealed an irritable, non-toxic looking infant who was febrile with axillary temperature of 38° C. He was normal hydration and perfusion. A diffuse, tender, unilateral swelling extending from the right mandibular to the right preauricular region



Fig. 1: Swelling over the preauricular region extending to the area underneath the right earlobe over the angle of the mandible displacing the earlobe outward with inflamed overlying skin.

was observed. It was warm to touch. The overlying skin was inflamed. The anterior fontanelle was normotensive and occipito-frontal circumference was 33.5cm plotted on the 50th centile on the growth chart corresponding to his length. There was no lymphadenopathy or hepatosplenomegaly. Findings on the remainder of the physical examination were unremarkable.

Initial laboratory test showed a haemoglobin level of 10.1gm/dL and total white cell count of 10,800/mm<sup>3</sup> with 38.7% neutrophils, 41.7% lymphocytes and 17.3% monocytes. Blood culture was negative for bacterial growth. Culture of the swab taken from the right eye yielded a heavy growth of *Staphylococcus aureus* and *Trichosporon* species. Both the cytomegalovirus IgM and cytomegalovirus polymerase chain reaction were also tested positive in this patient. An ophthalmology assessment revealed no evidence of chorioretinitis suggestive of intrauterine infection.

Based on the clinical presentations, a diagnosis of acute neonatal suppurative parotitis was entertained and he was treated with parenteral cloxacillin at 50mg/kg/dose every 8 hours and amikacin at 17.5mg/kg/day. After six days of therapy, the swelling regressed and a more localized mass was noted over the preauricular region extending to the area underneath the right earlobe over the angle of the mandible displacing the earlobe outward (Fig. 1). The mass measured about 2 cm by 3 cm in size and was fluctuant. The overlying skin was inflamed and warm. Ultrasound examination of the

This article was accepted: 24 July 2012

Corresponding Author: Zurina Zainudin, Department of Paediatrics, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor Email: zurina@medic.upm.edu.my / zue.zurina@gmail.com

mass demonstrated an enlarged right parotid gland with heterogeneous echogenicity. Bedside needle aspiration drained pus which isolated *Staphylococcus aureus* on culture. A two weeks course of antibiotics resulted in complete recovery.

### DISCUSSION

Acute bacterial infection of parotid gland is rarely encountered in the neonatal age group<sup>1,2</sup>. It is more commonly associated with premature infants and has been reported in medical literature, however there has been no case report from Malaysia to our knowledge. This case illustrates the typical manifestation of acute suppurative parotitis with spontaneous onset of tender swelling and erythema of the preauricular area associated with low grade fever. However the pathognomonic feature of purulent discharge from Stenson's duct was not demonstrable. Culture of the purulent material is very helpful in the diagnosis as well as in guiding treatment. Radiological study reveals a diffuse enlargement of the parotid gland with coarse echo pattern which may suggest parotitis.

Direct extension from the buccal mucosa is believed to be the main portal of entry of microorganism responsible for salivary gland infection<sup>3</sup>. Risk of parotid gland involvement is increased by local trauma induced by excessive oropharyngeal suction<sup>3</sup>. Other predisposing conditions include prematurity, dehydration and prolonged gavage feeding<sup>3</sup>. Various reports have shown that *Staphylococcus aureus* plays a major role in the infection of parotid gland in neonates<sup>1,2</sup>. It was the commonest pathogen recovered from acute suppurative parotitis in many reported cases<sup>4,5</sup>. This is similar to what we have found in our patient. In addition, isolation of *Staphylococcus aureus* from the right eye swab suggests the primary source of infection. Seeding of bacteria from systemic stream was unlikely as the blood culture was sterile. Our patient was also tested positive for cytomegalovirus infection and its' association with neonatal parotitis has never been reported in any English literature before. Other organisms known to cause suppurative parotitis include *Streptococcus pyogenes*, *Streptococcus viridans*, *E.coli*, *Pseudomonas aeruginosa* and *N. catarrhalis*<sup>1</sup>.

The mainstay of therapy in neonatal suppurative parotitis is early and appropriate choice of antibiotic<sup>5</sup>. Optimal duration of therapy is unknown but some literature suggested 7 to 10 days or up to resolution of the lesion<sup>5</sup>. Most cases demonstrated rapid and complete recovery eliminating the need of surgical drainage<sup>2</sup>. However in our experience, our patient progressed to develop abscess requiring drainage despite adequate dose of antibiotics. Fortunately, he responded well without significant complication. Fistula formation, facial nerve palsies, mediastinitis and extension to the auditory canal following acute suppurative parotitis are rare since the introduction of antimicrobial therapy<sup>5</sup>.

### CONCLUSION

Infection of the salivary gland should be strongly considered in cases of neonatal sepsis associated with facial swelling as septic parotitis could be easily missed without a careful examination.

### ACKNOWLEDGEMENT

We thank all the staffs of Neonatal Intensive Care Unit of Hospital Kuala Lumpur for their assistance in the management of our patient. We also wish to thank the Paediatric Surgical Team of Paediatric Institute Hospital Kuala Lumpur for their contributions in the management of our patient.

### REFERENCES

1. Leake D, Leake R. Neonatal Suppurative Parotitis. Pediatrics 1970; 46: 203-7.
2. Spiegel R, Miron D, Sakran W, Horovitz Y. Acute Neonatal Suppurative Parotitis: Case Report and Review. Pediatr Infect Dis J. 2004; 23(1): 76-8.
3. Chevalier J, Jadcherla SR. Parotid Swelling in a Premature Neonate. Am J Perinatol 2002; 19(8): 435-8.
4. Singh K. Bilateral parotid Abscess in a Neonate. Indian Pediatr 2006; 43 (11): 1009-10.
5. Khan SU, O'Sullivan PG, McKiernan J. Acute Suppurative Parotitis: Case Report. Ear Nose Throat J 2010; 89(2): 90-1.