

# Acute Suppurative Parotitis and Parotid Abscess in Young Children

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## Summary

Fawehinmi Y. Acute Suppurative Parotitis and Parotid Abscess in Young Children. *Nigerian Journal of Paediatrics* 2002; 29:17. Acute suppurative parotitis in three children, aged between eight months and two years who presented within a period of one month is described. Despite prompt treatment with intravenous antibiotics, the swellings in two of the three progressed to abscesses whose identification was facilitated by ultrasonic examination. The organism isolated from purulent specimens from the drained abscesses consisted of *Staphylococcus aureus*, while one of the two that progressed to an abscess had in addition, an anaerobic organism, *Fusobacterium nucleatum*. All the three recovered completely. Based on our experience, it is advocated that the management of infants with suppurative parotitis should include adequate antibiotic cover for streptococcus, staphylococcus and bacteroides, while drainage, using Blair's modified incision should be undertaken where an abscess is present. The efficacy of ultrasound examination in the diagnosis of parotid gland abscess is highlighted

## Introduction

ACUTE non-obstructive suppurative parotitis in the past was almost confined to debilitated, post operative, dehydrated and immunosuppressed elderly patients.<sup>1</sup> The most common form of parotid swelling in children and young adults is mumps.<sup>2</sup> 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<sup>3</sup> which can occur at any age. Pus can be expressed from the duct and pneumococci have been reported as the predominant causative organism on culture.<sup>3</sup> The condition which may involve both glands simultaneously, can also be allergic in nature and is often recurrent. There is usually no pain, and the swelling is limited to the gland and lasts 14-20 days before subsiding spontaneously.<sup>3</sup> The third type of acute suppurative parotitis is the least common and occurs mainly in infants. It is usually due to *Staphylococcus aureus* bacteriophage 80-81.<sup>3</sup> It may be primary or complicate parotitis due to other causes.<sup>4</sup> The gland is swollen, red, tender and painful. Because of the urgency of the situation, immediate treatment with intravenous antibiotics is necessary. Suppurative parotitis may be confused with recurrent parotitis. While suppurative parotitis responds to appropriate antibiotics based on culture of the pus obtained from Stensen's duct or by surgical drainage, recurrent parotitis subsides spontaneously. This

paper presents three cases of suppurative parotitis seen in the Ear, Nose and Throat clinic within a period of one month.

### Case 1

An 18-month old Saudi girl presented to the emergency department of Assir Central Hospital with fluctuating tender, non-pulsatile, left preauricular mass. Prior to presentation she had received oral antibiotics for one week without improvement. Clinical examination showed an ill looking but well nourished child with a left preauricular fluctuant swelling measuring 2x3cm with slight pitting on pressure. There was also a wide zone of preauricular erythema. Examination of the ear, nose and throat was unremarkable. There was leukocytosis of  $12.8 \times 10^9/l$ , and an ESR of 80mm/hr. Pus was obtained from the Stensen's duct and sent for culture. The patient was immediately commenced on intravenous clindamycin. Ultrasound scanning showed some sizable hypodense area. The abscess was drained using modified Blair incision. Meanwhile, culture of the pus obtained earlier from Stensen's duct and the one drained at operation was reported to have grown *Staphylococcus aureus* bacteriophage 80. The patient later made a complete recovery.

### Case 2

An eight-month old Saudi girl presented to the ENT outpatients clinic with three days' history of right ear tenderness and gradual swelling of the right preauricular area. There was no history of trauma or upper respiratory tract infection. On admission, she was febrile (38.8°C) and ill looking. Further examination revealed a well-nourished baby with a diffuse and tender right preauricular swelling measuring 2x2 cm. The mass which was not mobile and

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non-pulsatile had a wide zone of erythema and induration. Stensen's duct opening was slightly oedematous with thick mucoid discharge. Ear, nose and throat examination was normal. The white blood cell count was  $10.5 \times 10^9/l$  and ESR 60mm/hr. Ultrasound of the right parotid gland revealed an ill defined vague mass of mixed echotexture of the parotid which was unilocular in character (Fig 1). A swab was obtained from the opening of the Stensen's duct and the patient was commenced on parenteral clindamycin.

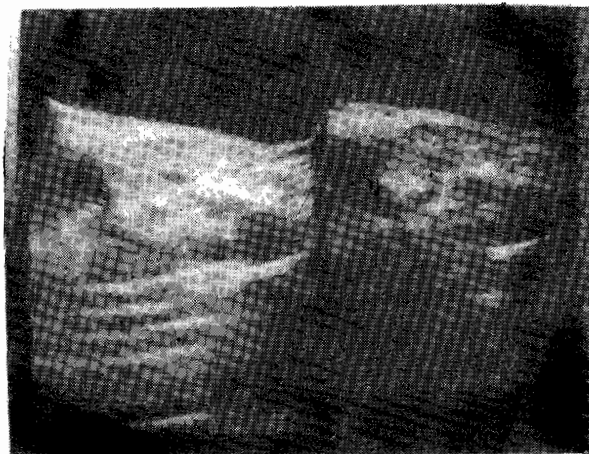


Fig. 1. Ultrasound picture of parotid gland showing diffuse swelling without abscess.

After three days of treatment, the white blood count came down to  $8.0 \times 10^9/l$  and the ESR to 20 mm/hr. The result of the culture showed a growth of *Staphylococcus aureus* bacteriophage 81 sensitive to clindamycin. The patient was discharged after five days in the hospital. She was placed on clindamycin syrup for another five days and when reviewed in the clinic two weeks after discharge; the swelling had disappeared and the parotid duct secretion was normal.

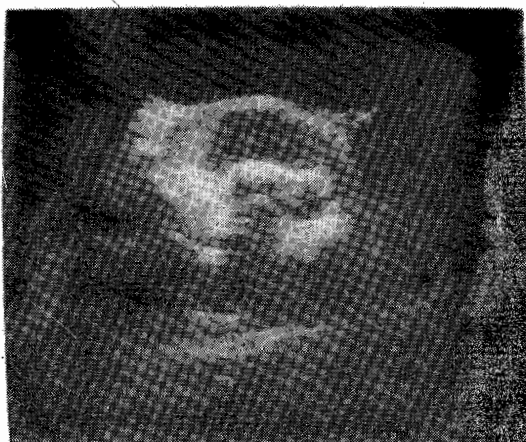


Fig. 2. Ultrasound picture of parotid gland showing multiple small abscesses.

### Case 3

A two-year old Pakistani boy presented to the clinic with a tender swelling of the left parotid area. He had previously been treated at home for four days with Pakistani traditional ointment before presentation. On examination, he was well-nourished and febrile ( $T = 38^{\circ}C$ ). Ear, nose, throat and neck examination was normal. There was a diffuse and tender left preauricular swelling of 1x2 cm, with a wide zone of erythema. The swelling was not mobile, non-pulsatile and not fluctuant. A swab taken from the opening of Stensen's duct was sent for culture. A complete blood count showed leucocytosis while the ESR was elevated. An ultrasound examination of the left parotid gland revealed a parotid swelling with small multiple abscesses (Fig 2). The patient was commenced on intravenous clindamycin while awaiting the result of the culture which later gave a growth of *Staphylococcus aureus* bacteriophage 80, sensitive to clindamycin. After 48 hours of parenteral antibiotics, the patient was still febrile and lethargic while the swelling remained of the same size. This time however, there was in addition, pitting of the swelling on pressure. The mass was drained using a modified Blair incision and three millilitres of pus was evacuated. Culture of the pus gave a growth of *Staphylococcus aureus* and *Fusobacterium nucleatum*. In view of this, metronidazole was added to the drug regime.

### Discussion

The three cases of acute suppurative parotitis were characterised by sudden onset of tenderness, redness and swelling of the parotid region, but unlike the situation in adults, the three infants were well-nourished and were well hydrated.<sup>3</sup> Furthermore, they were from different backgrounds. The organism cultured in the three cases was *Staphylococcus aureus* bacteriophage type 80-81, the nosocomial variety seen in adults and the elderly. One of the three cases responded adequately to intravenous clindamycin, and was discharged after five days. The remaining two cases progressed to abscess formation despite aggressive medical management. These two cases required surgical drainage like in adults, using modified Blair incision to expose the surface of the gland,<sup>4</sup> and prevent damage to the facial nerve.<sup>5</sup>

Ultrasound was the investigation of choice in the three cases because it is an excellent diagnostic tool for detecting abscess cavities before the development of fine fluctuation.<sup>5</sup> Some workers have advocated the use of radiation therapy in the range of 200 rads per day to diminish the parotid secretions and thereby reduce the inflammation.<sup>3</sup> This was not found necessary in our cases and in any case, irradiation of young children might have grave consequences. It was also to avoid irradiation that CT scan was avoided. Ultrasound examination which is non-invasive, rapid and not requiring much cooperation from the subjects, was sufficient enough to make the diagnosis.

Although it is generally assumed that microorganisms responsible for acute suppurative parotitis are usually

facultative anaerobes (mainly *Staphylococcus aureus* and *Streptococcus viridans*), there are cases where the microorganisms are anaerobes (*Fusobacterium nucleatum* and *Peptostreptococcus anaerobes*) which are sensitive to metronidazole but resistant to penicillin.<sup>6,7</sup> It is therefore important that microbiological methods capable of isolating strict anaerobes be included in the identification of aetiological agents.

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