CASE REPORT

Orbital cellulitis with periorbital abscess secondary to methicillin-resistant *Staphylococcus aureus* (MRSA) sepsis in an immunocompetent neonate

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SUMMARY

This article advocates the need for early incision and drainage of periorbital abscesses. We report a case of a 1.5-month-old neonate with orbital cellulitis and periorbital abscess, which had rapidly developed over a period of 3 days. Treatment history revealed methicillin-resistant *Staphylococcus aureus* sepsis treated with intravenous vancomycin, and incision and drainage of abscesses at multiple sites (left parotid region, upper and lower limbs). A small swelling noted on the left temporal region on discharge from the hospital was treated with oral cotrimoxazole. However, it spread rapidly to involve the periorbital tissue and the bones of the orbital walls to form a periorbital abscess and orbital cellulitis.

BACKGROUND

We stress on the importance of early incision and drainage of abscesses, especially those due to methicillin resistant *Staphylococcus aureus* (MRSA), because of its propensity for rapid spread and bony erosion.

CASE PRESENTATION

A 1.5-month-old baby presented with redness and swelling over the left eye and temporal region, which had progressed rapidly over a period of 3 days.

Examination of the child revealed a fluctuant swelling over the left temporal periorbital region measuring 3×2 cm associated with erythema and oedema of the upper and lower eyelids. It was associated with abaxial proptosis, with the globe being displaced downwards and inwards (figure 1). Ocular movements were restricted. Conjunctiva showed diffuse congestion. Pupillary reactions were normal. Fundus evaluation did not show any abnormality. Diagnosis of orbital cellulitis with periorbital abscess was performed.

Birth history: the patient was a full-term male baby through emergency c-section in view of fetal distress. Birth weight was 2.8 kgs. There was a history of respiratory distress at birth for which the baby was placed in the neonatal intensive care unit. He presented with abscesses in multiple sites: upper and lower limbs, and left parotid region. Blood culture revealed MRSA. The abscesses were drained by paediatric surgeons and the baby was started on vancomycin injections for a period of 14 days. A small swelling in the left temporal region was noted on discharge, which was expected to resolve with oral cotrimoxazole for 7 days.

Figure 1 Preoperative image showing a large periorbital abscess on the left.

However, the swelling progressed rapidly and the baby was readmitted.

INVESTIGATIONS

CT scan showed a well defined peripherally enhancing hypodense soft tissue lesion with multiple enhancing septations in the left periorbital region, measuring 2.3×2.8×3 cm (AP×TR×CC), with irregular destruction of frontal and temporal bones and erosion of the greater and lesser wings of the sphenoid bone (figure 2). Culture and sensitivity of a pus sample showed that it was

Figure 2 CT scan image showing an abscess in the left periorbital area.

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Figure 3 Postoperative image after 1 month shows complete resolution of lesion.

sensitive to amikacin, cotrimoxazole, linezolid, teicoplanin and vancomycin.

TREATMENT

Immediate incision and drainage of the abscess was performed and the drained pus sent for culture and sensitivity, which confirmed the organism to be MRSA. Postoperatively, the baby was treated with intravenous vancomycin and linezolid for 10 days along with topical tobramycin and chloramphenicol.

OUTCOME AND FOLLOW-UP

Rapid resolution of the lesion was seen (figure 3). On follow-up after 1 month, resolution was noted, with repeat CT confirmed it.

DISCUSSION

Orbital cellulitis and periorbital abscess are rare manifestations of infection with MRSA. According to PH Blomquist,¹ ocular manifestations were seen in 1.3% of MRSA cases of whom 19% presented with orbital cellulitis/abscess.

Conjunctivitis was the predominant presentation (40%), followed by sty/chalazion (25%).² Nevertheless, orbital neonatal abscess secondary to MRSA has been increasingly reported after

2005, and it needs to be kept in mind while prescribing antibiotics on presentation.^{3–5} Urgent surgical drainage of the abscess has been suggested, especially in cases where CT scan shows bony erosion.⁶

We opted to carry out an urgent incision and drainage of abscess in our patient as we felt that it would decrease the bacterial load and eliminate the focus, hence accelerating the healing process. Antibiotic options were based on culture and sensitivity of the sample. We chose to supplement the vancomycin injection with linezolid injection because of its property of enhanced skin and soft tissue penetration.⁷

Learning points

- ▶ Methicillin resistant *Staphylococcus aureus* related infections are on the rise in this antibiotic era.
- ▶ Sepsis though a rare entity in immunocompetent neonates should be considered in cases of multiple abscesses at unusual sites.
- ▶ Early diagnosis and drainage with proper antibiotic selection based on culture of the organism can give an optimal outcome and forestall potentially fatal complications.

Competing interests None declared.

Patient consent Obtained.

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