Unusual association of diseases/symptoms

Fungal myocarditis in a preterm neonate

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Summary

A male infant born at 25 weeks gestation presented with abdominal distension, was transferred to our institution for surgical management following suspected bowel perforation with severe sepsis. Umbilical catheter cultures grew *Candida parapsilosis*. At laparotomy, there was a large ileal perforation with peritonitis, he was treated with amphotericin, antibiotics and had an ileostomy. He had persistent pulmonary hypertension, requiring nitric oxide and high-frequency oscillatory ventilation. Serial echocardiograms revealed a patent ductus arteriosus (PDA), but also demonstrated increasing left ventricular hypertrophy and the development of bright areas within the septal myocardium. Further bright areas developed over a course of 2 weeks in his right ventricular outflow tract. After treatment for candidal infection, there was improvement in left ventricular thickness and brightness of the echogenic lesions was reduced. Biopsy of the lesions was discounted due to the risk of the procedure, the size of the infant and his improving clinical status.

BACKGROUND

Infants born at the extremes of prematurity have high rates of mortality, commonly due to a compromised immune system, and nosocomial infection from indwelling vascular access catheters. We report an unusual cardiac manifestation of fungal infection in a premature infant.

CASE PRESENTATION

A male infant was born at 25 weeks gestation weighing 590g following prolonged rupture of membranes and spontaneous onset of labour. He had an antenatal diagnosis of cleft lip and palate but normal karyotype on amniocentesis. At one week of age, he deteriorated clinically, with abdominal distension and was transferred to our institution for surgical management following suspected bowel perforation and severe sepsis. Umbilical catheter cultures at that time grew *Candida parapsilosis*.

At laparotomy, there was a large ileal perforation with peritonitis, but without necrotising enterocolitis. He was treated with amphotericin and antibiotics, and had an ileostomy and mucous fistula formed. He had persistent pulmonary hypertension, requiring nitric oxide and high frequency oscillatory ventilation.

INVESTIGATIONS

Blood cultures grew *C. parapsilosis* and transthoracic echocardiograms demonstrated echogenic masses.

DIFFERENTIAL DIAGNOSIS

A differential diagnosis would be rhabdomyomata, but these look different from the masses seen on our echocardiogram, and have a different clinical course (figure 1).

TREATMENT

Intravenous amphotericin and intravenous antibiotics were started.

OUTCOME AND FOLLOW-UP

These lesions regressed quickly over time once treatment was started.

DISCUSSION

There are no other published case reports of myocardial *Candida* infection. *C. parapsilosis* is a common human pathogen responsible for invasive candidal disease. The individuals at highest risk of severe infections are neonates, and infection is associated with indwelling devices. *C. parapsilosis* is a skin commensal and is responsible for more than 25% of all invasive fungal infections in low birth weight infants in the UK.¹ *C. parapsilosis* can grow in total parental nutrition and forms a biofilm on catheter and other indwelling devices. The average mortality from *C. parapsilosis* fungaemia is 28.5% while for *Candida albicans* is 44.5%.² Fungal endocarditis accounts for 1.3–6% of cases of infective endocarditis³ with *C. parapsilosis* associated with 17% of identified cases. Infective endocarditis arises in the setting of fungaemia, and damaged tissues are particularly prone to infection. At the time of his fungaemia, our patient was exceptionally unwell and we hypothesise that during this period, he developed candidal myocardial infection.

In summary, we present a very unusual case in a premature neonate of echogenic masses within the myocardium, associated with left ventricular hypertrophy. In the presence of a known fungal pathogen cultured from an invasive, indwelling vascular catheter, the possibility of these lesions representing candidal sepsis must be considered.

Figure 1 Transthoracic echocardiogram. Parasternal long-axis view (upper panel). Left ventricle appearance on admission (middle panel). Left ventricle appearance 3 weeks postadmission (bottom panel). Left ventricle appearance 8 weeks postadmission.

Learning points

- ▶ Preterm infants are at risk of *Candida parapsilosis* infection, as they are immunocompromised.
- ▶ *C parapsilosis* can be an invasive infection, so those with indwelling catheters are at risk.
- ▶ *C parapsilosis* septic patients may have myocardial involvement.

Competing interests None.

Patient consent Obtained.

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