

Iliopsoas abscess due to methicillin resistant staphylococcus aureus in a 26 day old neonate

*H K K T Duminda¹, A K Lamahewage², A Liyange³, D M H Fernando⁴

Sri Lanka Journal of Child Health, 2015; 44(3): 167-168

(Key words: Iliopsoas abscess, MRSA, neonate)

Case report

A 26 day old baby girl, delivered by normal vaginal delivery at term, with a birth weight of 3.4 kg, presented with swollen left thigh, reduced movements of the left leg and fever for 3 days. She had normal feeding. There was no maternal fever or contact history of tuberculosis (TB). She had uneventful prenatal and immediate postnatal periods.



Figure 1: Coronal MRI of abdomen showing left psoas abscess with extension to thigh

¹Registrar, ²Consultant Paediatric Surgeon, ³Senior Registrar, Lady Ridgeway Children's Hospital, Colombo

*Correspondence: thilakduminda@yahoo.com

(Received on 23 March 2014; Accepted after revision on 30 May 2014)

On examination, child was febrile (101⁰ F) with no skin sepsis and stable vital parameters. There was a palpable non mobile lump in left iliac fossa. Left thigh was swollen diffusely up to mid-thigh with no definite mass. Ultrasound scan (USS) revealed left iliopsoas abscess (IPA) with inconclusive extent. Magnetic resonance imaging (MRI) and computed tomography (CT) scans revealed a multiloculated abscess extending into upper thigh (Figure 1).

White blood cell (WBC) count was 19,300/cu mm with 54% neutrophils and 40% lymphocytes. C-reactive protein (CRP) was 144.2 mg/L and blood cultures were negative. Surgical exploration was done through a left Rutherford Morrison incision approached extraperitoneally. Large abscess drained 50 ml of thick pus and specimens were taken for bacterial culture. Abscess cavity extended to the thigh under the inguinal ligament. Corrugated rubber drain was kept for five days. Culture revealed methicillin resistant staphylococcus aureus (MRSA) but other cultures and PCR for TB were negative. Patient was given intravenous amikacin and vancomycin for two weeks with good response.

Discussion

IPA is extremely rare in neonates¹. It is primary or secondary and can be overlooked easily¹. If not treated in time it is invariably fatal but is otherwise potentially curable¹. The management is aided by isolated cases reports of which there are only 18 up to date in the English literature¹. Unlike in adults, secondary IPA is rare children². IPA develops towards the second half of the neonatal period rather than the immediate postnatal period¹. Most reported cases of IPA presented with a triad of symptoms: femoral triangle swelling, reduced mobility of lower limb, and mild fever¹. Some had a palpable abdominal mass or a mass in the femoral triangle but this was not commonly encountered¹. WBC counts were in the range of 20,000– 30,000/cu mm¹. Only a few cases presented with high fever (>38°C)¹.

The common differential diagnosis is septic arthritis of the hip joint. This neonate developed swelling of the groin and femoral region with reduced movements of the left leg. X-ray of left hip joint and thigh was normal except for significant soft tissue swelling of the proximal half of the thigh. Ultrasonography is the first line modality used for diagnosis¹. USS done without sedation or anaesthesia usually suggests the diagnosis¹. Drawbacks of USS are not demarcating the extent of the abscess and operator dependency¹. CT scan and MRI are useful to obtain more detailed information of the anatomical extent of the abscess and status of the hip joint and lumbar vertebrae³.

In this neonate, CT and MRI scans showed extension of the abscess into the thigh and the presence of multiloculi precluded USS guided drainage. Therefore when a newborn presents with poor mobility of a lower limb, USS and CT or MRI are warranted to check the retroperitoneum and even in the absence of high fever there is a need for a high degree of suspicion for timely diagnosis. Most neonatal causes of IPA are not detected. Identified sources are: bacteraemia, discitis (T12-L1 vertebrae)⁴, septic arthritis of hip joint and skin pustules. One neonate had leukocyte adhesion defect². IPA probably occurs as a result of haematogenous spread from an occult source in the body because of weak immunity. That is supported by the fact that *Staphylococcus aureus* as commensal flora of the skin is the most frequently isolated organism from IPA³. A few cases involved MRSA, *Klebsiella pneumoniae* and *Streptococcus pneumoniae*¹. It is possible that the short delay between birth and onset is attributable to these causative organisms, especially MRSA.

With respect to treatment, most were given intravenous antibiotic therapy empirically because of high WBC count and CRP and delay in diagnosis¹. Antibiotic alone was often insufficient¹. Most abscesses were multiloculated and therefore managed by open surgical drainage. Extra-peritoneal approach was preferred⁴. In a few neonates, the abscesses were diminished with antibiotic therapy alone⁵. USS-guided drainage has recently been reported as a minimally invasive method of drainage but precluded in the index patient as the abscess was multiloculated⁶. Superiority of percutaneous USS guided drainage over open drainage is controversial in neonates but it is not the sole therapy in reported

adult case series and most required open drainage subsequently because of inadequate drainage due to high viscosity of the pus⁵. Duration of antibiotics depend on clinical progression which is usually 2 weeks in most reports¹. In one neonate the abscess drained through an inguinal incision alone¹. In follow-up CRP and serial USS are used. Despite significantly high inflammatory markers (WBC and CRP) recurrence after drainage and septicaemia were quite low¹. The prognosis was good in most of reported cases without residual effects¹.

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