Primary neonatal iliopsoas abscess

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A B S T R A C T

We report a case of iliopsoas abscess in a 13-days-old baby girl who presented with a diffuse, rapidly growing left flank, groin and upper thigh mass. Ultrasound scan (USS) and computed tomography (CT) were helpful in diagnosis. She was treated with extra-peritoneal surgical drainage as USS guided radiological intervention was unsuccessful. She was given systemic antibiotics. The clinical presentation, diagnosis and treatment of this rare condition with a brief review of the literature are presented in this report.

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Primary iliopsoas abscess (IPA) is uncommon in children and is exceptionally rare in the neonate [1–14]. Only 12 cases of IPA have been reported in neonates [4]. Our report describes a case of idiopathic IPA in a neonate who had no etiological agent cultured, had no associated risk factors and has had long-term follow-up of 8 years.

1. Case report

A term female neonate, with uneventful pregnancy and normal vaginal delivery was born with a birth weight of 3100 g. She had no neonatal problems and was discharged home the same day on full breast feeds. The mother did not suffer from gestational diabetes during pregnancy. The family were screened for MRSA, which was negative.

On day 13, she developed a swelling over the left lower abdomen extending to left groin and upper thigh. Movements of the left lower limb were decreased and the baby cried with manipulations to the area. There was no history of temperature or local trauma. She received treatment at a district general hospital for possible clinically suspected septic arthritis of the left hip with intra-venous benzyl penicillin, flucloxacillin and gentamicin. She was referred to the orthopedic surgical team for further management.

On examination, she looked unwell and there was a firm 6.5 × 6.5 cm ill-defined tender left flank mass extending to left groin and upper thigh with bluish discoloration of the surrounding area (Fig. 1).

Laboratory investigations revealed a white cell count of 24.05 × 109/l, neutrophils 12 × 109/l, platelets 768 × 109/l, C-reactive protein 107 mg/l and hemoglobin of 10.9 g/dl. Blood culture was negative after 5 days of incubation.

Ultrasound scan showed left sided psoas abscess extending from the iliac crest down to the groin. CT scan showed left IPA from the level of the iliac crest extending down to the left thigh along with multiple enlarged left inguinal lymph nodes and marked soft tissue edema of the upper thigh and buttock (Fig. 2).

Percutaneous drainage by the interventional radiology team under USS guidance was unsuccessful due to technical reasons and catheter size non-availability. The pediatric surgical team was consulted with a view to performing open extra peritoneal drainage. This was carried out yielding thick greenish yellow pus and a thick peel of pyogenic membrane.

Microscopy of the purulent material revealed numerous leucocytes and scanty Gram-positive cocci. Pus culture showed no growth. Systemic antibiotic therapy continued for 2 weeks. She was discharged home after 14 days in good condition and on full feeds.

At follow up in clinic 6 weeks later she had a full range of movement within the left lower extremity and a repeat ultrasound was normal. At 8-year follow-up, she is symptom free and thriving.
2. Discussion

Neonatal IPA is an extremely uncommon and potentially serious condition. The etiology of IPA in many cases remain unknown, with the most common infectious agent reported as *Staphylococcus aureus* [5]. IPA caused by methicillin-resistant *S. aureus* (MRSA) is an extremely rare and potentially dangerous condition in neonates [6].

Clinically babies are quite ill and septic. The major presenting symptoms of neonatal IPA are leg or groin swelling, limitation of leg motion, and pain. Clinically it may mimic septic arthritis of hip [2,3,12], cellulitis of the thigh and abdominal wall [8]. In most cases it is unilateral pathology but very rarely bilateral presentation has been reported [13]. Presentation with abdominal mass has been described [14]. A high index of suspicion is required for IPA when a neonate presents with femoral swelling, limb disuse and/or fever of unknown origin [6].

Laboratory investigations show a picture of sepsis and blood and/or pus cultures may or may not be positive for the causative organism. *S. aureus* is the most common pathogen and is responsible for 10 out of 12 neonatal IPA cases reported [7].

Ultrasound should be the investigation of first choice when a diagnosis of IPA is suspected. USS usually shows a retroperitoneal collection over the iliopsoas area. Cross sectional imaging in the form of MRI or CT gives a better delineation of the anatomy and extent of the lesion that helps in planning drainage [8]. MRI would be the better option, given the risk of ionizing radiation to the pelvic area particularly in a female neonate. However, our patient was evaluated and investigated by the orthopedic team and a CT requested rather than MRI.

Antibiotic therapy alone is not adequate treatment for IPA and appropriate drainage is required. USS guided percutaneous drainage has been reported to be effective [7]. In our case it did not work due to technical reasons and unavailability of the proper

![Fig. 1. Picture showing a bulging left lower abdominal mass extending to left groin, upper thigh and buttock.](image)

![Fig. 2. CT scan shows a large mass tracking into the left psoas muscle and extending to thigh.](image)
catheter size. Laparoscopic drainage has been reported in adults and bigger children but has not been reported in neonates. Open surgical extra peritoneal drainage is quick and very effective. Postoperatively the need for antibiotic therapy is emphasized for a minimum period of 2 weeks.

The prognosis is good in the majority of cases except in immunocompromised patients, IPA caused by virulent organisms like MRSA, etc or in very late diagnosed advanced disease.

3. Conclusion

Primary neonatal IPA can present as an emergency to the pediatric orthopedic team simulating septic arthritis with septicemia. Pus and pyogenic membrane can be quite thick and surrounding cellulitis very diffuse. Interventional radiology may not be successful in providing adequate percutaneous drainage and an open surgical approach in this situation allows rapid resolution of the pus collection, pyogenic membrane and associated cellulitis.

References