

# Septic Arthritis of The Hip Joint presenting as Acute Abdomen – a Report of Two Cases.

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## Summary

**Alonge TO, Ogunlade SO, Omololu AB, Obajimi M. Septic Arthritis of The Hip Joint presenting as Acute Abdomen - a Report of Two Cases. Nigerian Journal of Paediatrics 2003; 30: 67.** Septic arthritis of the hip joint in two children, originally thought to be cases of acute abdomen is presented. In one case, the discovery of extra-peritoneal purulent fluid at surgery, obviated the need for laparotomy and in the other, the true nature of the disease became apparent one week after laparotomy. These cases illustrate the maxim that any painful movement of the hip joint with associated unexplained fever should raise suspicion of septic arthritis. The close relationship of the hip joint to the pelvis sometimes confuses hip diseases with pelvic pathologies.

**Key Words:** Septic arthritis, acute abdomen, pathological dislocation

## Introduction

PYOGENIC arthritis of the hip joint is fairly common in children below two years and the organism commonly isolated in this infection is *Staphylococcus aureus*.<sup>1</sup> The organism reaches the joint either by the haematogenous route or following a contiguous spread from a metaphyseal osteomyelitic focus in the proximal femur. The femoral head, which at this age is cartilaginous, is prone to enzymatic digestion by proteolytic enzymes released from the bacteria and pus.<sup>1</sup> Therefore, there is the need for urgent drainage of the joint, preferably by open arthrotomy. Inadequate and delay in the treatment of this emergency often leads to complications which include chronic pain, joint stiffness, destruction of the femoral head and its sequelae, pathological dislocation and pelvic abscess.<sup>2</sup>

Septic arthritis of the hip joint usually presents with fever, irritability, and flexion deformity of the affected hip joint with pain on attempt to extend the affected joint. Telltale signs of the probable cause of the

septicaemia such as septic skin eruptions, may accompany these clinical features particularly in neonates. However, a few cases of unusual modes of presentation of this lesion have been reported in the English literature.<sup>3</sup> The aim of this report is to highlight an unusual presentation of septic arthritis of the hip joint in two children which illustrates the close proximity of this joint to the retroperitoneal space.

## Case 1

AO was an eight-year old boy, haemoglobin AA, social class III (low socio-economic class) and a pupil of a public primary school. He was first seen at a State General Hospital in 1996 in septicemic shock. He was resuscitated and whilst the results of the full blood count, blood films and blood cultures were being awaited, he was commenced on parenteral antibiotics (*Ampiclox* and metronidazole). However, after 48 hours of admission, he developed generalised abdominal guarding, and rebound tenderness, but the bowel sounds were present. A clinical impression of an acute abdomen probably secondary to typhoid perforation was made, and arrangements were made for laparotomy. However, at surgery, laparotomy was abandoned when copious amount of pus was encountered when the skin incision had only gone through the fascia and the peritoneum had not been breached. A drain was inserted into the extra-peritoneal space in the anterior abdominal wall to evacuate the pus. He made an uneventful post-operative recovery in the first 48 hours and oral antibiotics were commenced on the third post-

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operative day. An attempt to prop the patient up in bed on the third post-operative day was resisted because of severe left hip pain which was associated with external rotation of the limb. A plain radiograph of the pelvis at this stage revealed an ill-defined femoral head, and joint effusion as evidenced by the lateral displacement of the fat lines and mottling of the left acetabulum. He was commenced on skin traction and appropriate oral antibiotics for six weeks. Thereafter, a repeat radiograph of the hip revealed marked destruction of the left femoral head, replacement of the tri-radiate cartilage by a bony bar and a defect in the floor of the left acetabulum (Figs 1a & 1b). He was commenced on non-weight bearing crutches and subsequently referred to the University College Hospital (UCH), Ibadan in 1997. Clinical evaluation at the UCH revealed a limb-length discrepancy of five centimetres with a good range of painless movement in the left hip joint. He was mobilised with the aid of an adequate shoe raise and partial weight bearing with crutches. He is still being followed up at the surgical outpatient clinic.

### Case 2

BO was a four-year old boy, social class III and haemoglobin AA, who presented to the paediatric surgeons at the University College Hospital, Ibadan in 1999 with pyrexia and clinical features of an acute abdomen, namely: generalised abdominal tenderness,



*Figure 1b – A frog lateral view of the same hip as in 1a showing a large osteo-chondral defect in the floor of the acetabulum.*



*Figure 1a – A photograph (antero-posterior view) of the pelvis of case 1 showing the replacement of the tri-radiate cartilage by a bony bar.*



*Figure 2 – A photograph (antero-posterior view) of the pelvis of case 2 showing calcification of the left hip joint capsule following adequate reduction of the hip dislocation.*

guarding, fever and sluggish bowel sound, mimicking typhoid enteritis with intestinal perforation. At laparotomy, normal abdominal organs were visualized and no bowel perforation was seen. However, about 100ml of straw-coloured, free flowing fluid was found in the peritoneal cavity. One week after laparotomy, and before the patient could mobilise, he complained of pain in the left hip; a plain radiograph of the hip revealed a posterior dislocation of the hip joint. He was managed on skin traction and oral antibiotics for four weeks. Plain radiographs of the pelvis taken a week after the commencement of the skin traction revealed a congruous hip joint. However, at four weeks, a repeat radiograph of the pelvis showed that the reduction of the hip joint was maintained with congruous articulating surfaces, intact tri-radiate cartilage in the floor of the acetabulum and calcification of the joint capsule from localised collection of pus (Fig. 2). The skin traction was discontinued and he was left free in bed for one week and thereafter, commenced on physiotherapy. He made satisfactory progress and was followed up at the surgical outpatient clinic for six months before he was lost to follow up.

### Discussion

The hip joint is a synovial joint of the ball and socket variety. The spherical femoral head articulates with the acetabulum, which forms the medial wall of the hip joint as well as the lateral wall of the pelvis. The parietal peritoneum lines the wall of the abdominal cavity including the pelvis and there is a potential space (extraperitoneal or retroperitoneal space) of loose areolar tissue interposed between the pelvis and the acetabulum.<sup>4</sup>

Septic arthritis of the hip joint is uncommon and it is a more serious disease with more complications in children than in adults.<sup>2</sup> The usual trigger is a haematogenous infection which settles in the synovial membrane<sup>1</sup> initiating an acute inflammatory reaction with a serous or seropurulent exudate into the synovial cavity. Pelvic abscess is sometimes found in association with septic arthritis of the hip joint and it is attributed to suppurative infection in the iliac lymph nodes. The resultant abscess, which is located in the retroperitoneal space, tends to gravitate along the ilio-psoas muscle and may point along the course of this muscle thereby creating confusion between primary psoas abscess and pyogenic arthritis of the hip joint.<sup>2,3,5,6</sup> The reclusion of the pelvic abscess in the retroperitoneal space gives rise to symptoms mimicking acute or surgical abdomen. In the first case presented, the defect in the acetabular floor might have been the route through which the pus from the hip joint tracked into the retroperitoneal space. The defect in the acetabular floor could have

been caused by the destruction of the vulnerable tri-radiate cartilage by the offending micro-organism responsible for the joint infection. The low socio-economic class of the patient could have been associated with a low immune status thereby increasing the patient's susceptibility to infection. Failure of the hip joint to dislocate may have resulted in the containment of the offending micro-organism within the narrow hip joint leading to a prolonged contact between the micro-organism and the acetabular floor. This was probably responsible for the destruction of the acetabular floor thereby creating a substantial bony defect. On the contrary, the pathological dislocation of the hip joint in the second case might have reduced the pressure within the joint and therefore, spared the femoral head from destruction. The dislocation might also have dispersed the pus and the offending micro-organism into the surrounding tissue of the joint capsule, thereby preventing destruction of the tri-radiate cartilage in the acetabular floor.

Septic arthritis of the hip joint is not uncommon worldwide, although the diagnosis and subsequent surgical drainage may be more prompt in developed countries due to better health care facilities and expertise. Although the possibility exists that the diagnosis in these two cases might have been missed during the initial evaluation by the resident doctors who saw them, this does not obviate the fact that the cases were unusual presentations of pyogenic arthritis of the hip joint.

The clinical presentations of these cases clearly differ from ilio-psoas spasm and in developing countries where typhoid fever complicated by enteritis and intestinal perforation is fairly common, the suspicions raised by the attending physicians in these cases were probably not unexpected. All the same, children with unexplained fever and lower abdominal pain in the presence of inability to bear weight on the lower limb, should raise a high index of suspicion of a hip pathology, especially in patients from poor socio-economic background. The fact that these two patients belonged to the low socio-economic class suggests that some degree of impoverishment or poor immunity may predispose patients to pyogenic arthritis of the hip joint and its attendant complications.

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