Hip arthroplasty complicated by coloarticular sinus formation—a case report

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A 78-year-old man was admitted with severe left hip pain 3 weeks following primary total hip arthroplasty using a cementless Duraloc socket and a cemented X-press custom stem (DePuy Ltd, Leeds, UK). A 2-week history of colicky abdominal pain was also noted. 9 years previously, the patient had undergone a low anterior resection followed by adjuvant chemoradiation for a well differentiated rectal adenocarcinoma.

At presentation, a tender, fluctuant swelling was evident in the soft tissues overlying the left hip. All hip movements were restricted due to severe pain. Abdominal examination was normal and he had no fever. Radiographs revealed free gas around the hip prosthesis (Figure 1). Feculent, blood-stained material was obtained on needle aspiration. Coliforms, proteus spp, Streptococcus viridans and mixed anaerobes were isolated on culture of the aspirate. CT after peranal instillation of contrast showed a free flow of contrast medium through the greater sciatic foramen into a gas and fluid-filled cavity around the hip prosthesis (Figure 2).

Rectal examination under anesthesia revealed a fibrotic anus with a large cavity behind the neorectum anterior to the sacrum. At laparotomy, the colon was grossly distended down to the level of the neorectum. A defunctioning loop colostomy was performed.

The hip wound was reopened to expose the components. Gross fecal contamination was present. Debridement and copious lavage with saline and gentamicin were performed. The wound was then packed with gentamicin beads and betadine swabs and the skin edges loosely approximated. The components were left in situ. Intravenous cefuroxime 1.5 g and metronidazole 500 mg were given 8 hourly. Further drainage and debridement of the left hip wound were performed 2 and 4 days later. A contrast enema 1 week following laparotomy, showed a fistulous tract extending towards the left acetabulum (Figure 3).

After defunctioning of the colon, no further fecal discharge was noted. 1 week following surgery, oral antibiotic therapy was started and continued for 6 weeks. The hip wound was allowed to granulate by secondary intention.

2 years later, the patient is well and mobile with the aid of a stick. The hip wound has healed. Radiographs show a satisfactory position of the implant with no evidence of infection or loosening. C-reactive protein (CRP) remains slightly elevated at 32 mg/L (normal < 10 mg/L).

Discussion

Levin et al. (1997) reported a case of a fistula between the hip and the sigmoid colon after uncemented total hip arthroplasty. The patient had previously undergone low anterior resection followed by radiotherapy and chemotherapy for a rectosigmoid carcinoma. Johnson and Doig (2000) had a patient who developed a fistula between the hip and a diverticular abscess after uncemented revision total hip replacement. In the case reported by Levin et al. (1997), although the fistula extended in the direction of both hips, there was only a communication with the hip joint on the side with the prosthesis.

The development of the sinus in our case probably resulted from local perforation of the neorectum and the formation of a presacral cavity secondary to stenosis of a prior coloanal anastomosis. Thermal damage is unlikely as the acetabular component was inserted without cement. Furthermore, no breach of the medial acetabular wall was noted at the time of the original operation and there was

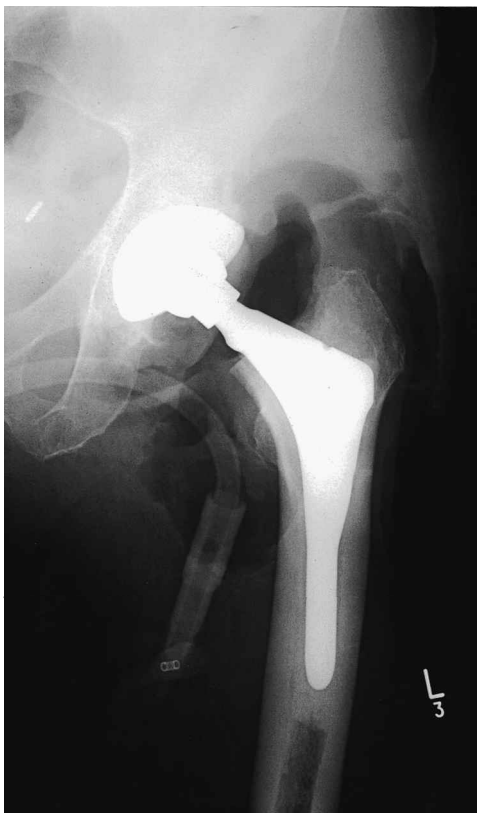

Figure 1. Free gas around the prosthesis.

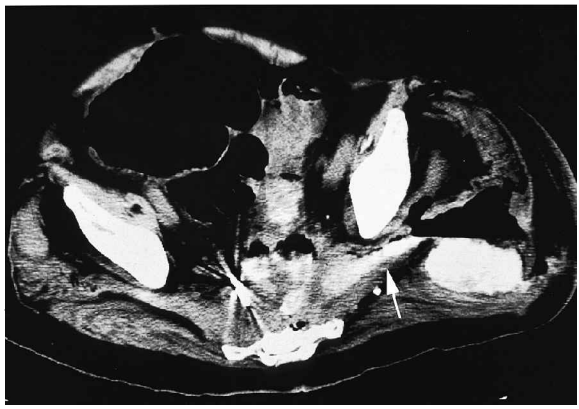

Figure 2. Contrast CT demonstrating fluid filled cavity around the hip prosthesis.

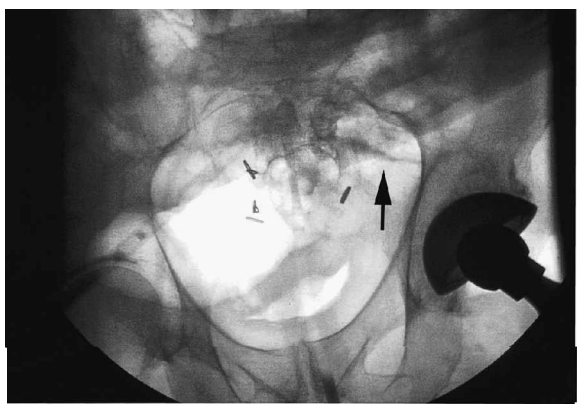

Figure 3. Contrast enema demonstrating fistulous tract extending to the acetabulum (arrow).

no evidence radiographically of component migration. In essence, the origin lay on the colonic side of the fistula.

Despite gross contamination of the prosthesis, we opted to leave the components in situ for several reasons. First, the components were clinically stable. Secondly, an intact interface between the prosthesis and bone was present. Moreover, the gentamicin-impregnated cement used to fix the femoral stem would present a further barrier to deep infection. And thirdly, the initiation of prompt and early surgical intervention would also be of value.

Fistulae between bowel and a prosthetic hip joint are often associated with a high morbidity and mortality. Arnold and Shives (1992) reported a sigmoid colocutaneous fistula following revision hip arthroplasty. The patient eventually required hip disarticulation. Ridley et al. (1985) and Levin et al. (1997) both had cases of a colocutaneous fistula complicating total hip arthroplasty. These patients died 1 month and 12 days, respectively, after surgical intervention. We feel that the outcome in our case has been favorable because of early and aggressive surgical intervention and, as a result, we have avoided long-term antibiotic treatment. However, we do appreciate the high risk of late infection due to the degree of prosthetic contamination.

After any radiation applied to the pelvic area, caution with total hip replacement surgery is important.

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