Incisional cellulitis after total hip arthroplasty—a case report

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A 67-year-old white woman with a body mass index (BMI) of 33.9 had primary osteoarthrosis of the right hip. Total hip replacement was performed in February 1998, using a posterolateral approach. During spinal anesthesia, an uncemented hydroxyapatite (HA)-coated acetabular component (Mallory-Head Biomet) and a CPT (Zimmer) stem using Palacos cement containing gentamicin were inserted. Before surgery, she was was given a single dose of 1g dicloxacillin i.v. After insertion of a subfascial drain, the fascia and subcutis were closed with resorbable Vicryl sutures and the skin with staples. Peroperative blood loss was 700 mL. The patient was mobilized with partial weight bearing in the first 6 weeks. The drain was removed 2 days after surgery following drainage of a total of 90 mL.

13 days postoperatively, a red blushing area developed around the incision, which diminished after removal of the staples on the following day. CRP was 205 nmol/L (Figure 1).

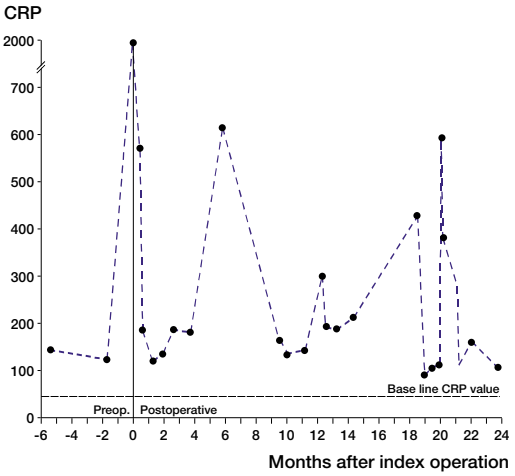

Figure 1. C-reactive protein (CRP; nmol/L), base line value < 48 nmol/L.

Mobilization was uneventful, apart from intermittent pain along the anteromedial part of the thigh and increasing edema of both legs, despite treatment with Furix 120 mg a day.

5 weeks after surgery, she was seen by her general practitioner who found that her body temperature was 38.2 °C and again noted blushing around the incision. Oral pivampicillin was prescribed for 2 days. The following day she was hospitalized with erythema measuring 3 hand sizes distal to the incision (Figure 2). The scar had healed well and showed no signs of deep infection. The following days, the erythema increased in size, and extended from the knee to above the hip. Her temperature had normalized. Penicillin V 800 mg 4 times a day and dicloxacillin 500 mg 4 times a day were given for 3 weeks.

1 week later the blushing of the skin had diminished in size. However, her symptoms recurred 7, 11 and 14 months after surgery and she required hospitalization and antibiotic therapy with penicillin V 800 mg 3 times a day for 14 days.

Although ambulant consultation 21 months after surgery showed no visible sign of infection, 4 days later, she was hospitalized with increasing erysipelas-like erythema of the right hip and gluteal area

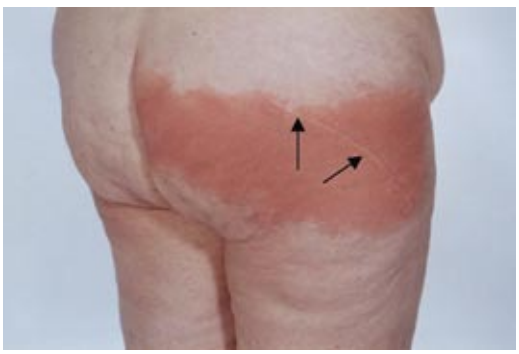

Figure 2. Acute phase of incisional cellulitis.

accompanied by pain and edema and treated with with 2 MIE penicillin i.v. for 4 days. Oral clindamycin (300 mg × 3/d) was given for 3 weeks. Blood and urine cultures were negative. A lymphocyte scintigram combined with bone scintigraphy performed 24 months after surgery showed no signs of a deep or superficial infection.

Discussion

Mainetti et al. (1992) reported 6 patients with erysipelas/cellulitis in the buttock and hip area, 5 of them after internal fixation, using a dynamic hip-screw. They ascribed the finding to trauma of the venous and lymphatic circulation around the skin flaps were responsible, because the sites involved could not be due to a particular bacteria or distinct portal of entry. The superficial lymph vessels of the gluteal region circle anteriorly and drain into the superficial inguinal nodes and are interrupted by a posterolateral skin incision. Deshmukh (1999) suggested that incisional cellulitis may be affected by lymphatic drainage of the anus and perianal skin into the medial inguinal lymph nodes of the upper thigh.

Stierstorfer and Clendenning (1991) described a patient in whom skin biopsy showed eosinophilic cellulitis and local irritation, a kind of dermatitis in the incision area after hip surgery. Staren et al. (1996) reported delayed cellulitis after breast lumpectomy, and node dissection in 10 patients. 5 patients were cured by antibiotic therapy, the other 5 were treated with anti-inflammatory agents or observation with gradual resolution, suggesting that this was a chronic inflammatory condition without an infection.

Brook and Frazier (1995) described 259 patients with culture-positive cellulitis. Because of differences in the infecting flora, they recommended that initial treatment with broad-spectrum antibiotics should be given so as to include not only Gram-positive, but also Gram-negative and anaerobic organisms. Among their 15 patients with an infection in the buttocks, Staphylococci, Streptococci, Bacteroides and Peptostreptococci were isolated.

Rodriguez et al. (1998) concluded that incisional cellulitis after THR is a clinical entity with acute onset and rapid progression. In their opinion, treatment with antibiotics leads to rapid resolution of the symptoms and they recommended antibiotics for a minimum of 2 weeks. Recurrences could occur, but they responded rapidly to antibiotic treatment. None of their 14 patients developed deep prosthetic infections or sequelae. They also suggested that metallic fragments, which remain in the subcutaneous tissues after irrigation, may serve as a nidus. In none of the reports mentioned above was surgical treatment necessary and all patients were cured by intensive antibiotic therapy.

In our case, the incisional cellulitis did not seem to be due to an underlying prosthetic infection, there were no sequelae and the patient had no pain with normal walking. On the basis of the literature, we believe that in most patients who have incisional cellulitis nonoperative treatment with antibiotics should be given—i.e., dicloxacillin 2 g × 3 or clindamycin 600 mg × 3 daily because empirically the cellulitis is usually caused by *Streptococcus hemolyticus* or *Staphylococcus aureus*.

No competing interests declared.

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