PRIMARY TOTAL KNEE ARTHROPLASTY
IN PATIENTS WITH PSORIASIS

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Between 1976 and 1988, 50 primary total knee arthroplasties were performed on 34 patients with psoriasis vulgaris. The skin lesions were graded for severity in all patients and the extent of affected body surface was mapped. All patients received peri-operative antibiotics. Only one deep infection, with Staphylococcus aureus, occurred 25 months after operation. The average length of follow-up was nearly four and a half years, being to a minimum of two years or until failure of the arthroplasty.

There appears to be no increased risk of deep infection in patients with psoriasis vulgaris undergoing primary total knee arthroplasty.

Psoriasis is a relatively common dermatological disorder affecting about 1% to 2% of the general population. Patients with psoriasis harbour pathogenic organisms on their plaques (Marple, Heaton and Kligman 1973; Aly, Maibach and Mandel 1976), and may have immunological defects (Guilhou et al 1976; Glinski et al 1978; Krueger, Hill and Jederberg 1978; Gladman, Keystone and Schacter 1983). These two factors would suggest that patients with psoriasis are at greater risk from postoperative infection. One study of various surgical procedures, including orthopaedic operations, found no increased rate of infection (Lambert and Wright 1979). However, studies of total hip and total knee arthroplasty have reported increased infection rates of 5.5% and 17% respectively (Menon and Wroblewski 1983; Stern et al 1989).

The purpose of our study was to determine the incidence of postoperative infection in patients with psoriasis vulgaris undergoing primary total knee arthroplasty.

PATIENTS AND METHODS
All patients with psoriasis who had undergone primary total knee arthroplasty between 1976 and 1988 were identified. Unicompartmental and revision knee arthroplasty were not included. Psoriasis was diagnosed by an experienced staff dermatologist; patients with a positive rheumatoid factor were excluded. The skin lesions were graded for severity and extent of body surface involvement. Our assessment of the severity of the disease included the treatment required and the percentage of body surface affected.

Mild psoriasis showed minimal scaling and erythema, needing local steroids, tars, and medicated shampoos but no hospital admissions. Moderate psoriasis showed moderately severe scaling with plaque elevation, requiring topical steroids or ultraviolet light therapy, occasionally in hospital. Severe disease had marked scaling with extensive plaques involving many areas of the body. Treatment frequently required oral retinoids and ultraviolet light, or oral methotrexate and often required admission to hospital.

Thirty-five patients with psoriasis underwent a total of 52 primary total knee arthroplasties. There were 18 males and 17 females. The average age at the time of arthroplasty was 62 years (29 to 81). Follow-up averaged four years (1 to 14). Both knees were replaced in 17 patients; the remaining 18 had unilateral operations, evenly divided between the right and left sides. A wide variety of types of prosthesis were used, no less than 14 different designs; 46 were cemented and six were uncemented. The patients were followed up for a minimum of two years or until failure.

Eight patients were on third-line immunosuppressive therapy (prednisone, methotrexate, azathioprine) and all patients received peri-operative antibiotics. Four patients suffered from diabetes mellitus and one patient from alcoholic cirrhosis. In 24 patients the skin condition was graded mild, in four moderate, and in seven severe. The diagnosis of infection depended upon a positive culture.
RESULTS

Thirty-four of the 35 patients were available for follow-up (50 of the 52 knees). One patient died from an unrelated cause one year after surgery, and one patient with bilateral replacements had only a one-year follow-up of one knee. Neither patient was having any problems at the latest follow-up.

Immediate postoperative complications included deep venous thrombosis in one patient, pulmonary embolism in one, paralytic ileus in one and exacerbation of psoriasis vulgaris in two. There was no immediate postoperative wound infections either superficial or deep. Three patients had their skin incision through or very close to a psoriatic lesion. No patient had impaired wound healing.

Five patients required revision operations; four for aseptic loosening and one for instability; three of these had skin lesions described as 'mild' and the other two as 'severe'. One deep infection with *Staphylococcus aureus* occurred two years one month after operation. This patient’s psoriasis was graded mild with less than 5% body surface involved. The patient died three weeks after infection of the knee was diagnosed, but the cause of death was related to alcoholic cirrhosis.

DISCUSSION

Infection is one of the most devastating complications that can occur in patients undergoing total joint arthroplasty. Lambert and Wright (1979) found low rates of infection in patients with psoriasis undergoing a variety of surgical procedures, the orthopaedic operations including two cup arthroplasties. Menon and Wroblewski (1983) found a 9.1% superficial and 5.5% deep infection rate in patients with psoriasis undergoing Charnley total hip arthroplasty without the use of peri-operative antibiotics. Stern et al (1989) reported a deep infection rate of 17% in patients with psoriasis vulgaris; their patients did receive peri-operative antibiotics but they included patients with rheumatoid arthritis and those undergoing revision surgery. Both factors in themselves may result in an increased infection rate (Rand and Fitzgerald 1989).

To our knowledge there is no study of infection rates in patients with psoriatic arthritis undergoing total knee arthroplasty, with the associated use of peri-operative antibiotics. We found that only one in 50 (2.0%) had a deep infection, and that after an interval of 25 months. This does not differ statistically from a similar group of patients in our institution without inflammatory joint disease, undergoing primary total knee arthroplasty over the same period (Rand and Fitzgerald 1989).

From a detailed review of this series of patients, their ages, the severity and distribution of skin disease, the various treatments they were on and the variety of prosthetic devices employed, no distinct pattern emerges. No superficial wound infections or healing delay occurred, even in patients where the skin incision was through a psoriatic plaque. Others have found no impairment of wound healing in patients with psoriasis, and adequate sterilisation can be achieved using routine techniques (Lynfield, Ostroff and Abraham 1972).

Routine pre-operative skin preparation and the usual peri-operative antibiotics appear to be adequate for the prevention of infection in the psoriatic patient. However, it would seem reasonable that an attempt be made to achieve the best possible control of psoriatic lesions in the vicinity of an elective incision, and this has been our practice.

Conclusion. There appears to be no increased risk of infection in patients with psoriasis vulgaris undergoing primary total knee arthroplasty.

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REFERENCES


