Recurrence of psoriasis in an arteriovenous fistula

Jeremy B. Levy and Elaine J. Clutterbuck

Renal Section, Division of Medicine, Imperial College School of Medicine, Hammersmith Hospital, London, UK

A 63-year-old Kenyan Asian man began haemodialysis in April 1997. He initially presented in 1988 dialysis dependent with an ANCA-associated systemic vasculitis, and was treated with plasmapheresis, prednisolone and azathioprine. His renal function initially recovered (creatinine 200 μmol/l), but over the next decade he had slowly progressive renal failure. He had suffered from extensive plaque psoriasis for 25 years, and had three hospital admissions during this time for treatment of his psoriasis. Previous treatments included dithranol, crude coal tar, PUVA and acitretin, in addition to standard topical regimens.

Haemodialysis was instituted in April 1997 via an internal jugular permacath. At this time he had extensive plaque psoriasis covering his torso, arms, legs and scalp. Within 1 week of starting dialysis he developed new psoriatic lesions over his permacath exit site, which did not compromise the use of the catheter. Two months later he was admitted to hospital for inpatient treatment of worsening erythrodermic psoriasis, with soft paraffin, aqueous cream, betnovate, diprosalic ointment, trimovate, polytar, emulsifying ointment and occlusion therapy, and was begun on oral cyclosporin at 3 mg/kg/day. His psoriasis improved and subsequently he began dialysing through a forearm arteriovenous fistula. After three dialysis sessions he developed large psoriatic plaques over the needling sites along his fistula (Koebner’s phenomenon, Figure 1), making further use of the fistula impossible. The Koebner reaction subsided after several weeks. He continues to dialyse through a permacath and his psoriasis remains difficult to control.

Both haemodialysis and peritoneal dialysis have been used to treat extensive psoriasis even in patients without renal failure [1]. A number of small controlled studies including sham haemodialysis or sham peritoneal dialysis have been conducted, with mixed results [2–5]. In patients with renal failure, psoriasis can hinder the delivery of effective renal replacement therapy of any modality because of the degree of skin involvement, the risk of secondary infection leading to either line sepsis or peritonitis, and the difficulties in performing surgical procedures through involved skin. Koebner’s phenomenon (the recurrence of skin lesions at sites of trauma or scars) is a common finding in severe plaque psoriasis and has been reported to occur at Tenkoff exit sites, and along Tenkoff insertion scars [4], but not at the needling sites of fistulae. Interestingly acupuncture has been known to initiate plaque formation in psoriasis [6]. The aetiopathology of the Koebner reaction is poorly understood, but recruitment of CD4+ T lymphocytes into sites of injury occurs early in the development of the reaction, and is associated with the upregulation of ICAM-1 on epidermal keratinocytes [7]. The development of psoriatic plaques themselves correlates with the subsequent invasion of CD8+ lymphocytes [8].

Our patient developed Koebner’s reaction at fistula needling sites despite systemic treatment for his psoriasis with cyclosporin, and had not shown an improvement in his psoriasis after starting dialysis.

References

Correspondence and offprint requests to: Renal Section, Division of Medicine, Imperial College School of Medicine, Hammersmith Hospital, Ducane Road, London W12 0NN, UK.
Fig. 1. Psoriatic plaques at the needling sites of a brachial arteriovenous fistula.