Atopic Dermatitis as a Side Effect of Anti-Tumor Necrosis Factor-α Therapy

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We describe a new side effect of anti-tumor necrosis factor (TNF-α) therapy (etanercept) in a patient with juvenile idiopathic arthritis (JIA). A 10-year-old girl had a 5 year history of rheumatoid factor-negative polyarticular JIA with concomitant mild myositis and discrete atopic dermatitis. Concentrations of IgE, creatinine phosphokinase (CPK), and C-reactive protein (CRP) and erythrocyte sedimentation rate (ESR) were elevated; antinuclear antibodies and HLA-B27 were negative. The clinical symptoms were dominated by polyarthritis. Treatment with low dose corticosteroids, methotrexate (MTX; 5–15 mg/m^2), and cyclosporine (3–5 mg/kg/day) was ineffective. Etanercept (0.4 mg/kg twice weekly) was started at the age of 9 years. MTX and cyclosporine were discontinued, and low dose prednisolone was continued. After the first etanercept injections arthritis improved rapidly and the ESR returned to normal (Figure 1). However, the atopic dermatitis showed a dramatic worsening, spreading all over the body (Figure 2A), paralleled by an increase of serum IgE (154 IU/ml to 358 IU/ml). After 6 months, etanercept had to be stopped because of this complication. After withdrawal of the drug the skin lesions cleared immediately (Figure 2B), whereas the polyarthritis flared again (Figure 1).

TNF-α blockade supposedly shifts the Th1/Th2 balance towards Th2 cytokines (e.g., interleukin 4), which may be beneficial for Th1-weighted rheumatoid arthritis (RA)[1-3], but not for Th2-driven type I skin reactions. An explanation for the lack of this complication to date may be that atopic dermatitis rarely occurs in RA[4]. As patients with JIA do not show a lower incidence of atopy[5], complications similar to our patient can be expected in other juvenile patients treated with etanercept.

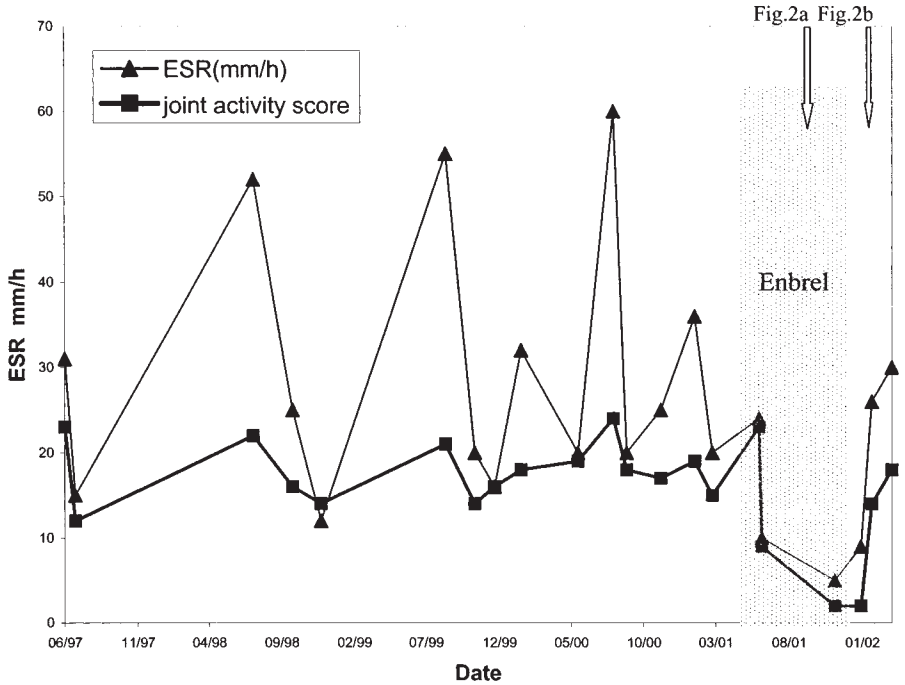

Figure 1. Course of joint activity score and ESR from the beginning of disease in June 1997. Arrows indicate dates of skin lesion photographs shown in Figure 2.

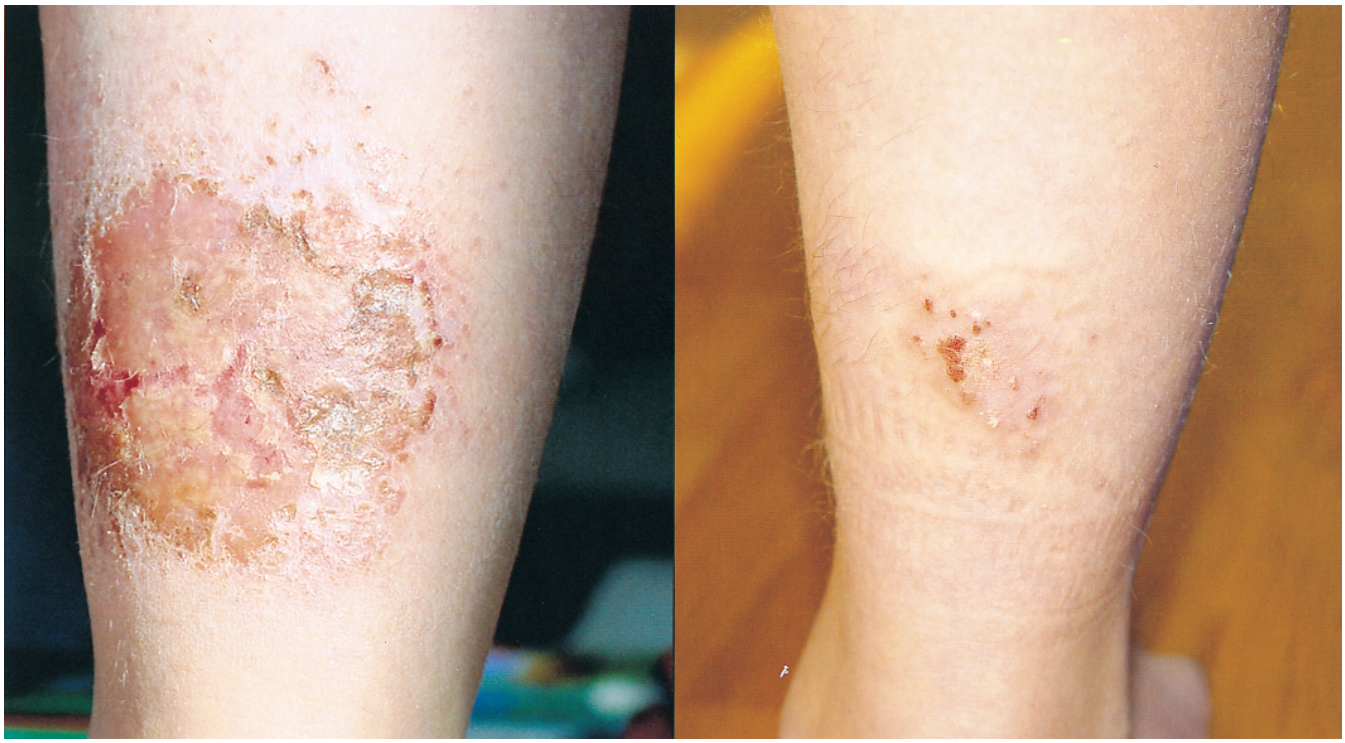

Figure 2. A. Right lower leg: Etanercept-induced skin lesion 12 weeks after initiation of therapy (0.4 mg/kg twice weekly subcutaneously). B. Clearance of the same lesion one week after withdrawal of etanercept.

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