

# Complications in the Intralesional Injection of Triamcinolone Acetonide by Jet Injector (Dermojet)

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Two patients with lichenified eczematous lesions on the dorsal aspect of the hands were treated intralesionally with triamcinolone acetonide injected with an air-powered high-pressure device, Dermojet. The therapy was complicated by tendon rupture in one patient and by the development of a subcutaneous nodule, which was suspected to be a foreign body granulomatous reaction, in the other patient. *Key words: Jet injection; Tendon rupture; Foreign body granuloma; Corticosteroids.* (Received November 29, 1982.)

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The jet injector is a convenient instrument for intralesional treatment with steroids. The steroids are injected rapidly with minimal discomfort by means of a high-velocity microjet that penetrates the skin. Adverse effects have been rather infrequent.

## CASE REPORTS

### *Case 1*

An 88-year-old man with pruritic lichenified eczematous lesions on the dorsum of the left hand was treated with intradermal injections of triamcinolone acetonide (Kenacort®), 40 mg/ml, applied by means of a Dermojet. Five days later the patient sought medical attention for pain at the injection site near the wrist, which was swollen and slightly erythematous. There was no fever, no lymphadenitis, and no lymphangitis. The white blood count (WBC) was 10 200 and the erythrocyte sedimentation rate (ESR) 54-58 mm/h. The antistreptolysin (ASO), antistaphylo toxin (AST) and antideoxyribonuclease B (antiDNase) titres were not elevated. Bacterial cultures yielded growth of a normal skin surface microflora. A roentgenogram was normal.

After a week's treatment with phenoxymethylpenicillin (Diclocila®) the symptoms had diminished, but by this time an extension defect of the second, third and fourth fingers of the left hand had developed, due to rupture of the extensor digitorum communis tendon underlying the injection area. Signs of spontaneous but incomplete recovery was observed for the next 4 months. Operative reconstruction was not undertaken because of the patient's age.

### *Case 2*

A 52-year-old woman with lichenified eczematous lesions on the back of the left hand was treated three times, over a period of 6 weeks, with triamcinolone acetonide (Kenacort®), 5 mg/ml, adminis-

tered with a Dermojet. One day after the third injection she complained of pain in the hand at the injection site over the distal aspect of the 2nd metacarpal bone. Edema and slight erythema developed. There was no fever, no lymphadenitis, no lymphangitis and no elevation of ESR or WBC. Bacterial culture of clear fluid from the wound of the initial incision performed before admission to the hospital was sterile. Treatment with Diclocila® was initiated. The symptoms gradually disappeared, but in about 2 months they were replaced by a subcutaneous, firm, freely movable nodule about one cm in diameter. This nodule resolved in about 4 months.

## DISCUSSION

Intralesional steroid therapy with jet injectors may cause symptoms such as slight pain and bleeding, superficial ulceration (1), transient cutaneous atrophy (1), tendovaginitis (2), secondary infections (3) and hypersensitivity reactions (4, 5). Retinal hemorrhages and deposits of steroid particles in the vitreous after accidental intraocular injections during treatment of psoriasis of the eyelids have been observed (6), as well as perforation of the cheek following treatment of atrophic erythematosus lesions (7).

Tendon rupture, as observed in case 1, is another complication, probably caused by the injection technique. The pathogenetic mechanisms may involve factors such as increase in interstitial pressure and consequent interference with the vascular supply (8). An infectious process cannot be ruled out, in view of the leukocytosis and the elevated ESR, but there was no fever, lymphadenitis, or lymphangitis, and no other signs of a bacterial infection.

The nodular tumour observed in case 2 may have been a foreign-body granuloma, although this was not verified histologically. A foreign-body granulomatous tissue reaction has been observed histologically after local injection of triamcinolone acetonide (9), which may remain at the injection site for a long time—up to several years (10). There were no signs of any infectious process.

To conclude, jet injectors can cause serious and disabling side effects on the back of the hand.

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