

## Perilymphatic Linear Depigmentation in a Child Following intralesional Steroid for Ganglion

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### INTRODUCTION

Intralesional steroid is a very widely used therapy for numerous skin conditions with few side effects. We report this child who developed intralesional triamcinolone acetonide induced depigmentation along the line of lymphatics in the left forearm.

### CASE REPORT

A 13 year old girl received a single injection of triamcinolone acetonide for ganglion of the front of left wrist in a dose of 40 mg/ml at a single site. She developed linear depigmentation 5-6 weeks post therapy. (figure 1a, 1b) The patient did not go for a second session for the treatment of ganglion. The patient's parents denied a biopsy of the depigmented area. The patient's parents were also reassured of the benign nature of the condition and advised treatment with topical tacrolimus 0.1% and 8-methoxy Psoralen.



**Figure 1(a).** Linear depigmentation along the anterior aspect of the left forearm adjacent to the ganglion where the intralesional steroid injection was given (side view)



**Figure 1(b).** Top view of figure 1 a

### DISCUSSION

Triamcinolone acetonide is a macrocrystalline molecule and is a potent steroid. It has been used effectively intralesionally for the treatment of hypertrophic scars, keloids, alopecia areata, hypertrophic lichen planus and various non-dermatological conditions such as ganglion, tenosynovitis and intra-articularly for arthritis.<sup>1</sup> The main advantage of using an intralesional steroid over a systemic steroid is the high local concentration of the medication achieved and the low propensity to cause systemic side effects. Dermal or subcutaneous atrophy, hypopigmentation, alopecia, infection, ulceration and localized dystrophic calcification have been variably reported in numerous studies.<sup>2,3</sup> Linear depigmentation is a peculiar, rare and an interesting adverse effect that has been reported infrequently and all the more, the photographs depicting the same in reports have been more of diffuse and patchy<sup>4</sup> than precisely linear except one case report<sup>5</sup> that has actually demonstrated linear streaks but the differentiating point was that multiple

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injections were given at multiple locations along the linearity and over a period of many months.

The interstitial fluid compartment of the body receives fluid from the arterial capillaries and drains into the venous capillary system and also the lymphatics. Micromolecules exit by the venous circulation whereas macromolecules do so through the lymphatic system.<sup>5,6</sup> Since triamcinolone is a macromolecule and also has a lipophilic property due to the presence of acetone group between Carbon 16 and 17 it finds its way out via the lymphatic system. The free and unbound form of triamcinolone is responsible for its therapeutic effects which occurs only at high concentrations of the drug after saturation of both the binding proteins i.e. albumin and transcortin (corticosteroid binding globulin). Thus the linear streaky depigmentation that emanates from the injection sites and progresses upwards along the direction of lymphatics may be postulated to be due to retention of the triamcinolone macromolecule in the lymphatic system. It has been demonstrated previously that the actual melanocyte number is intact in the steroid induced depigmentation that also explains the delay in onset of this adverse effect and also that the steroids may actually impair melanocyte function.<sup>7</sup>

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