

Streaky Hypopigmentation Following Lignocaine Injection: An Unusual Side Effect

Sir,

Lignocaine is the most commonly used drug for percutaneous anaesthesia. Its use is rampant in dermatosurgical procedures. We report for the first time an interesting adverse effect with lignocaine ring block given for the treatment of a periungual wart.

A 24-year-old man presented to us with complaints of a periungual wart on the right index finger. He had been treated with topical keratolytics prescribed by private practitioners with a minimal response. The wart involved the lateral paronychia and was extending into the undersurface of the nail plate. We gave a ring block to the right index finger by injecting lignocaine 2% without epinephrine at the base of the right index finger on both the sides. We performed paring of the wart after partial lateral nail plate avulsion, followed by two freeze and thaw cycles of

cryotherapy. Following the procedure, the patient was started on oral antibiotics and analgesics which were continued for the next 5 days. The patient returned for follow-up after 4 weeks with complaints of partial recurrence of wart along with the development of circumscribed areas of hypopigmentation at the site of lignocaine injection given for the ring block. The patient noticed hypopigmentation 3 weeks after the procedure. Gradually, the hypopigmented patches increased in size and one patch extended linearly in a streaky pattern onto the dorsum of the hand [Figure 1]. There was no atrophy or sclerosis or visible vein in the patch. There was no history of use of any topical medication, or personal/family history of vitiligo vulgaris. The patient was started on topical imiquimod for the residual wart and was subsequently lost to follow-up.

To the best of our knowledge, this is the first report of



Figure 1: Right index finger shows two hypopigmented patches near the base of the finger with one patch having streaky extension onto the dorsum of the hand; periungual wart is also visualized

hypopigmentation as an adverse effect of lignocaine given for local anaesthesia (ring block). Lignocaine hydrochloride (HCl) is chemically an aminoacyl amide [2-(diethylamino)-N-(2,6-dimethylphenyl)-monohydrochloride]. It is an effective local anaesthetic administered by infiltration, nerve, epidural and caudal block, and topical application. It has a rapid onset of action, which lasts for around 60–90 minutes. Lignocaine alters signal conduction in neurons by blocking the fast voltage gated sodium (Na^+) channels in the neuronal cell membrane that are responsible for signal propagation. With sufficient blockage, the membrane of the postsynaptic neuron does not depolarize and thus fails to transmit an action potential, and this creates the anaesthetic effect.

Hypopigmentation is a known and common side effect of the inadvertent use of topical steroids. While linear streaky hypopigmentation has been reported as a rare adverse effect of intralesional injection with triamcinolone given for keloid or psoriatic plaques or after intra-articular injections,^[1-4] it is postulated that the linear hypopigmentation occurs as a result of steroid crystals spread along the cutaneous lymphatic vessels or along the veins. Our case is interesting because, first, this adverse effect of lignocaine has never been reported before, and second, the linear extension of hypopigmentation onto the dorsum of the hand is also unusual. The streaky spread of the hypopigmentation suggests that it is the result of the local spread of the drug probably along the cutaneous lymphatic vessels. Also, it makes us think that lignocaine may be having some effect on the functioning of the melanocytes probably by blocking some still unrecognized ion channels present on

the melanocytes. It will be interesting to study the effect of lignocaine on melanocyte functioning in an *in vitro* setting like melanocyte culture. Though lignocaine is widely used, but this adverse effect is unusual and has not been reported before. It may be possible that this effect is idiosyncratic reaction and would occur only in genetically susceptible individuals.

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