Case Report
Localized Acquired Hypertrichosis Associated with the Application of a Splint

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We describe a 16-year-old boy whose left forearm and hand were cut by a piece of glass from a broken window as a result of the fall. He had surgical repair of his left extensor pollicis brevis, abductor pollicis brevis, and dorsal branch of the left radial nerve. Following the surgery, he was put on a splint so as to immobilize the left forearm and wrist. On removal of the splint 4 weeks post surgery, he was noticed to have more hair growth on his left forearm and hand than his right counterparts. The patient was reassessed 2, 4, and 8 months after the removal of the splint. The hypertrichosis got better with time. At the last visit, the hair growth in the left forearm and hand was back to normal. Our patient represents the first reported case of localized acquired hypertrichosis following the application of a splint in the pediatric literature.

1. Introduction

Hypertrichosis refers to the increased growth of vellus or other hair at inappropriate locations beyond the normal variation for a patient’s reference group [1]. The affected areas have a greater number of hair follicles than is normal for the body site [1, 2]. The condition is unrelated to androgen excess and unaccompanied by virilism or menstrual abnormalities. The sudden appearance of excessive hair growth in a localized body area following application of a splint has rarely been described. A perusal of the literature reveals only two documented cases. We describe a 16-year-old boy who developed hypertrichosis in the left forearm and hand following the application of a splint. To our knowledge, our patient represents the first patient who developed hypertrichosis following the application of a splint in the pediatric age group.

2. Case Report

A healthy 16-year-old Chinese boy fell downstairs 6 weeks ago. His left forearm and hand were cut by a piece of glass from a broken window as a result of the fall. He was taken to a local hospital where he had surgical repair of his left extensor pollicis brevis, abductor pollicis brevis, and dorsal branch of the radial nerve. Following the surgery, he was put on a splint so as to immobilize the left forearm and wrist. On removal of the splint 4 weeks after surgery, he was noticed to have more hair growth on his left forearm and hand than his right counterparts. Range of motion was normal in the wrists, elbows, and hands. Wrist and thumb strength on the left side was slightly less than the right side (4+ versus 5). The rest of the neurological examination was normal.

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3. Discussion

Hypertrichosis can be generalized or localized and may be congenital or acquired. Congenital generalized hypertrichosis may result from maternal ingestion of medications...
Congenital localized hypertrichosis is hypertrichosis with gingival hyperplasia) or an X-linked (e.g., hypertrichosis lanuginosa, universal hypertrichosis, or it may be inherited in an autosomal dominant pattern (such as minoxidil, phenytoin, and diazoxide) or alcohol, or closed fractures and developed hypertrichosis of the upper extremities after application of a splint for 6 to 12 weeks [8].

Acquired localized hypertrichosis is known to arise following chronic irritation, friction, or inflammation and may develop around chickenpox scars, the sites of insect bites, at the periphery of burned skin, and on the legs after radical inguinal lymphadenectomy [1–3]. The condition has also been noted after topical use of hydrocortisone, or fiberglass cast, after X-ray or UV irradiation, and in patients with mental illness who repeatedly bite or scratch their hands and arms [1, 3].

Acquired localized hypertrichosis is most frequently caused by medications, such as phenytoin, cyclosporine, danazol, minoxidil, penicillamine, diazoxide, psoralens, anabolic agents, corticosteroids, acetazolamide, hexachlorobenzene, and streptomycin [1, 2].

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Hypertrichosis has also been reported following the application of a plaster of Paris cast [3–5]. In 1980, Pick described a 12-year-old boy who had an effusion of the right knee following a fall [4]. A plaster of Paris was applied to the knee area. When the cast was removed 6 weeks later, a prominent focal patch of hair was noted in the patella area. The hairy patch spontaneously resolved two months after the cast was removed. In 1983, Bergen reported a 31-year-old woman who had a Colles’ fracture as a result of a fall on a cement floor [5]. She was treated with a circular plaster cast for 7 weeks. On removal of the cast, a localized patch of hair growth was noted where the plaster had been. In 1989, Leung et al. reported 3 children, aged 3.5, 5, and 7 years, respectively, who developed hypertrichosis following a fracture and cast application [3]. The 3.5-year-old boy had a fibreglass cast for 9 weeks. The 5-year-old girl had a plaster of Paris cast for 11 weeks, while the 7-year-old boy had serial Petrie cast treatment for 6 months. In 1985, Chang and Cohen reported a 29-year-old man who had localized hypertrichosis and dyshidrotic dermatitis on the left forearm following multiple fractures, which required application of a fibreglass cast for 2 months [6]. When the patient was reassessed 1 to 2 months later, the hypertrichosis had started to resolve. In 2001, Kara et al. reported a boy with pes equinovarus who had corrective surgery at 7 months of age [7]. At the age of 11 years, he presented to an orthopedic department because of leg pain and difficulty in walking. He had to be reoperated on and a calcaneal osteotomy was performed. After the operation, a cast was applied from the hip to the ankle of the right leg for 2 months. When the cast was removed, it was noted that there was mild atrophy and increased hair growth on the right leg as compared to the left. When he was seen 3 months later, the muscle wasting was no longer noted and there was complete, spontaneous resolution of the hypertrichosis.

Rarely, hypertrichosis has been reported following the application of a plaster of Paris cast, fibreglass cast, or splint may result from chronic irritation, friction, inflammation, heat, or cutaneous hyperaemia [3]. The condition is usually transitory. In the patient reported by Bergen, the persistence of the hair growth might be due to insufficient followup as the patient was not reassessed after one month from the time the cast was removed. Physicians should be aware of the benign nature of this condition so that unnecessary investigations can be avoided.

References
