

**Hypertrophic scar formation on the palmar surface of the hand****O. A. Olawoye<sup>1,2</sup>, O.M. Fatungashe.<sup>3</sup>**

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***Hypertrophic scar is a fibro-proliferative disorder of wound healing more commonly found in patients of African, Asian and Hispanic descent. While it could affect many different parts of the body it is rarely found on certain locations such as the palmar surface of the hands and the plantar surface of the foot. Despite various theories the reason for this is not fully understood.***

***The clinical presentation and management of a 34 year old man who presented with extensive post traumatic hypertrophic scar on the palmar surface of the hand was highlighted. Extensive literature search on the subject suggest the rarity of reported cases of palmar hypertrophic scar.***

**Key words:** Palmar hypertrophic scar, Fibro proliferative disorder, Hand Scar

**Introduction**

Hypertrophic scars and keloids are often described as fibro proliferative disorders of wound healing. These disorders though more common in patients of African descent, they are rarely found on the palmar surface of the hand and plantar surface of the foot. While there has been only one reported case of palmar keloid published in the literature<sup>1</sup>, we are not aware of any previous publication of palmar hypertrophic scar in the English literature to the best of our knowledge.

This paper highlights the presentation and management of an extensive post traumatic hypertrophic scar on the left palm of a 34 year old man and reviews available literature on fibro proliferative disorders on the palm.

**Case Report**

We report a 34 year old right hand dominant man who presented three months following an avulsion injury involving a significant part on his left palm which was sustained in a vehicular accident. He did not have fractures in the hand nor any other injury. He had initial wound care which consisted essentially of wound dressing with honey at a peripheral hospital. The wound healing was complicated with extensive palmar hypertrophic scar which extended to the wrist. He also had palmar contracture which was more prominent on the little finger and limited full wrist extension. There was no family history of excessive scarring or other fibro proliferative disorders.

Physical examination revealed a healthy man with normal vital signs. He had an extensive hypertrophic and hypopigmented scar on the palmar surface of his left hand. The scar extended from the wrist to just beyond the distal palmar crease and limited full wrist extension. (Figure 1)

His pre-operative investigations were normal. He had scar excision and wound resurfacing with split skin graft with the aid of tourniquet under general anaesthesia. Both donor and recipient wounds healed satisfactorily. Figure 2 shows the recipient site six months post-surgery.



**Figure 1.** Pre-operative picture



**Figure 2.** Post-operative picture

## Discussion

Hypertrophic scars begin as the result of injury to the deep dermis, and they are especially pronounced in wounds that have a prolongation of the inflammatory and proliferative phase of wound healing<sup>1</sup>. Factors that increase or prolong wound inflammation or wound tension include wound infection, prolonged healing by second intention, and immunologically foreign material present in the wound<sup>2</sup>.

Hypertrophic scarring also occurs as the result of dynamic mechanical skin tension acting on the healing wound. As a result of mechanical tension, scars located in certain areas of the body such as the presternum, shoulder, neck, and upper back, knees and ankles are frequently hypertrophic. This anatomical dependency seems to correlate with a pattern of skin tension<sup>3</sup>. While Hypertrophic scars have been reported in different parts of the body, they are rarely seen on the palmar surface of the hand and the plantar surface of the foot.<sup>4,5</sup> The reason for this remain poorly understood.

The extensive hypertrophic scar on the palmar surface of the left hand in this patient is an unusual presentation not only because of its location but also because of the early onset and extent of scarring. The scarring commenced within a few weeks of the injury and it was rapidly progressive such that by the third month it was significantly raised and symptomatic with itching and progressive palmar contracture which interfered with hand function. Perhaps if the initial wound had been debrided and grafted primarily, the healing would have progressed satisfactorily without significant scarring.

It probably would have been preferable to use glabrous skin from the sole for resurfacing the defect for cosmetic reasons of better color match; however the potential risk of the donor site healing with hypertrophic scar in this particular patient precluded this option. In any case the patient was satisfied with his outcome as the significantly elevated scar and palmar contracture were corrected to his satisfaction.

## Conclusion

Though hypertrophic scar is a relatively common complication of wound healing, it has not been previously reported on the palmar surface of the hand. This report describes the existence of this lesion in a site not traditionally known for its occurrence.

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