

## Single Case

# Localized Hypertrichosis with Traumatic Panniculitis: A Case Report and Literature Review

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## Keywords

Fat necrosis · Trauma-induced hypertrichosis · Traumatic panniculitis

## Abstract

Localized hypertrichosis with traumatic panniculitis is considered a rare condition. Previous articles have reported occurrence in females aged between 20 and 35 years. Possible mechanisms of trauma-induced localized hypertrichosis include hyperemia and angiogenesis induced by local inflammation, which can alter the hair growth cycle. The presence of inflammatory cells and lipomembranous changes on histopathology can support the diagnosis. We herein present a 35-year-old female patient with localized hypertrichosis following blunt trauma.

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## Introduction

Traumatic panniculitis refers to inflammation and necrosis of the subcutaneous fat following blunt trauma to the skin, the common areas being the breasts, shins, and forearms [1]. In rare cases, localized hypertrichosis can coexist with or follow panniculitis. We herein

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present the case of a 35-year-old female with coexisting panniculitis and hypertrichosis induced by previous trauma.

### Case Presentation

A 35-year-old Thai female presented with a brownish plaque covered by numerous long hairs on her left shin. Three months earlier, the patient fell over and hit her left shin on the stairs. The area became soft and tender, without any break in the skin, and later developed into a bruise. The bruise resolved within 2 weeks after the trauma, but a brownish plaque remained. Two months later, she noticed that thick, long hairs had grown over the plaque (Fig. 1). The patient did not have any underlying diseases and denied histories of topical corticosteroids use, insect bite, or previous bone fracture in the area.

On physical examination, there was a solitary, ill-defined, brownish, indurated plaque with localized hypertrichosis on the left shin. A 4-mm skin punch biopsy was performed on the lesion. Histopathology revealed scattered lobular panniculitis with hemosiderin and subacute focal lipomembranous fat necrosis (Fig. 2). The epidermis and upper dermis were unremarkable. Based on the history, physical examination, and histopathological findings, the diagnosis of localized hypertrichosis with traumatic panniculitis was performed. The patient was reassured and did not receive any treatment. Six months later, the lesion showed spontaneous resolution (Fig. 3).

### Discussion

Traumatic panniculitis with localized hypertrichosis is a rare condition. To date, only 4 cases have been reported in the literature (Table 1) [2–4]. All patients were young Asian females with a lesion on their lower extremities. The accident preceded hypertrichosis by 1–2 months. The histopathological changes are not specific. At an earlier stage, inflammatory cells such as lymphocytes and macrophages can be found in the adipose tissue around the vessels and septa, while in a late stage, fibrotic replacement of damaged fat may be observed. Lipomembranous changes are also described in previous case reports [1, 5].

Hypertrichosis is defined as excessive body hair growth above the average level. The condition can be classified as generalized or localized, depending on the area of involvement; or congenital or acquired, according to the age of onset. In the clinical presentation of acquired localized hypertrichosis, the differential diagnoses should include Becker's nevus, hypertrichosis of the pinna, and hypertrichosis associated with local inflammation (e.g., chemical-induced dermatitis, bone fracture, orthopedic cast removal, vaccination, and trauma) [4]. The diagnosis of localized hypertrichosis with traumatic panniculitis in our case was based on the history of earlier trauma, clinical presentation, and histopathological findings.

The mechanism through which local inflammation induces hypertrichosis is unclear. The previous report has proposed that the sudden increase in blood supply allows sufficient nutrition for stimulation of the hair follicle. Another hypothesis is that inflammation-induced angiogenesis may prolong the anagen phase of the hair follicle, leading to longer and thicker hair growth. In cases with trauma-induced panniculitis, it is possible that inflammation deep in the

subcutaneous tissue does not directly affect the hair follicles but allows intense and uniform blood supply to the area, stimulating the hair matrix [6, 7]. Interestingly, localized hypertrichosis has also been documented following lupus panniculitis [8].

Currently, there is no specific treatment for localized hypertrichosis with traumatic panniculitis. All reported cases, including the present case, reveal spontaneous resolution within 5 months to 2 years. However, in cases with cosmetic concerns, hypertrichosis can be treated by shaving, hair reduction lasers, electrolysis, or depilatory creams, etc. [9, 10].

In conclusion, we report a case of localized hypertrichosis with traumatic panniculitis. The condition should always be considered in patients who develop localized hypertrichosis after blunt trauma, especially within the past 1–2 months.

### Statement of Ethics

The patient provided written informed consent to perform all necessary investigations, to take clinical photographs, and use them for research purposes and publication.

### Disclosure Statement

The authors have no conflicts of interest to declare.

### Author Contributions

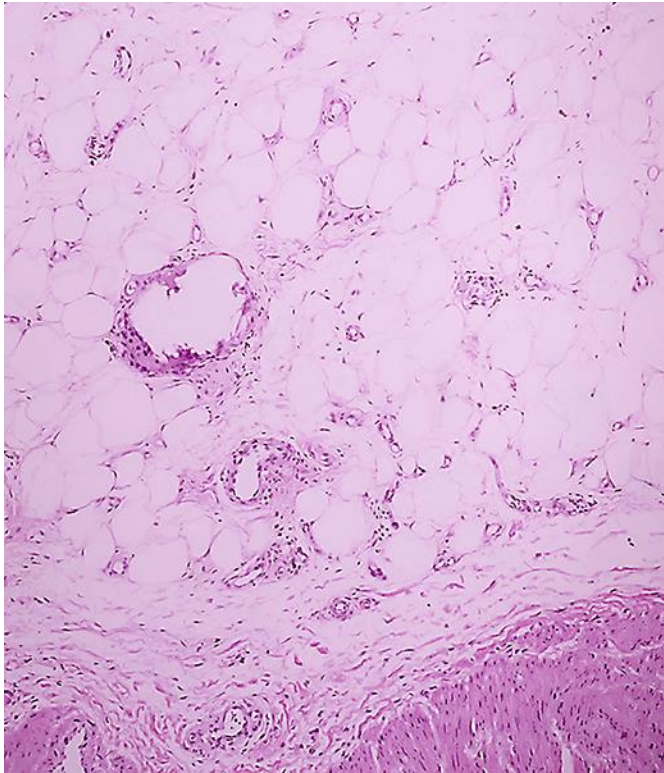
All named authors meet the International Committee of Medical Journal Editors (ICMJE) criteria for authorship for the manuscript, take responsibility for the integrity of the work as a whole, and have given final approval to the version to be published.

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**Fig. 1.** Solitary, ill-defined, brownish, indurated plaque with localized hypertrichosis on the left shin.



**Fig. 2.** Scattered lobular panniculitis with lipomembranous fat necrosis. HE. ×20.



**Fig. 3.** The lesion on the left shin shows improvement without any treatment (6 months).

**Table 1.** Reported cases of traumatic panniculitis with hypertrichosis

First author [ref.], year	Age, years	Gender	Location	Duration to hypertrichosis, months	Histopathological findings	Management	Clinical course
Present case	35	female	left shin	2	Lobular panniculitis, lipomembranous fat necrosis, hemosiderin (+)	reassure	Spontaneous resolution within 6 months
Won [2], 2008	31	female	right shin	1	Lobular panniculitis, fat necrosis, fibrotic change, and lipomembranous change	reassure	Spontaneous resolution within 5 months
Lee [3], 2011	33	female	left shin	1	Multiple variably sized fat cystic changes and focal fat necrosis with mild lymphohistiocytic infiltration in the subcutaneous fat layer, lipomembranous fat necrosis with eosinophilic membranes lining the cystic space in the subcutaneous fat lobule	reassure	Spontaneous resolution within 2 years
Lee [4], 2013	22	female	right shin	2	Lobular panniculitis, lipomembranous fat necrosis, hemosiderin (+)	reassure	Spontaneous resolution within 15 months
Lee [4], 2013	25	female	right calf	2	Mild lobular panniculitis	reassure	Spontaneous resolution within 14 months