of genitalia was proximal to the site of infection, i.e. legs and thus was very unusual. Though he had a large scar over inguinal region and lower abdomen due to burns in childhood, it was highly unlikely to be the cause since it happened nearly 35 years back. Absence of suggestive history, genital ulceration and inguinal lymphadenopathy ruled out STIs as a cause for the lymphedema.

All relevant hematological and biochemical tests (including repeated night peripheral blood smears for microfilariae, erythrocyte sedimentation rate, serum Venereal Disease Research Laboratory (VDRL) test, and ELISA for HIV (enzyme linked immunosorbent assay for human immunodeficiency virus) were normal. Noninvasive screening for malignancy did not reveal any findings. Lymphangiography was not resorted to due to peculiar site and its inherent complications.

He was initially treated empirically with diethylcarbamazine 200 mg tds by a surgeon without any response. Later he was given doxycycline 100 mg BD for 21 days with anti-inflammatory drugs, but did not show much of improvement. Other conservative methods like graduated compression/stockings or infiltration of 5,6 benzo-alpha-pyrene (coumarin) were not possible because of the peculiar site. He was very depressed and had a feeling of shame hence after counseling the patient was referred for surgical management.

Secondary lymphedema is relatively common and is caused by various infections. STIs like LGV and donovanosis are causative factors in a significant number of cases. Other causes of genital elephantiasis are very rare and include infections (due to coagulase positive staphylococci, hemolytic streptococci, and tuberculosis) and malignancies. [3,4] Even if these organisms cannot be cultured, therapy should be directed toward these infections, as was done in our case. Drugs like doxycycline if given for prolonged period may be effective due to additional anti-inflammatory properties.[3]

Lymphedema is usually insidious, painless and occurs distal to the site of involvement and may include the site itself. However, in our case genital lymphedema occurred proximal to the site of infection (legs). Long-standing cases develop “elephantiasis nostras verrucosa.” However, very rarely lymphangiosarcoma or recurrent episodes of cellulitis and lymphangitis may occur, thus aggravating lymphedema. [1] This necessitates prompt treatment. In case medical and conservative management fails, surgical treatment becomes imperative.

Genital elephantiasis is a functionally disabling and emotionally incapacitating entity. It causes extreme discomfort due to weight with limitation in ambulation and difficulty in maintenance of local hygiene and interferes with sexual intercourse. These functional disabilities cause extreme emotional stress making surgical intervention imperative. [5]

Various methods of reconstruction of genital elephantiasis involve excision of affected tissue and its reconstruction with or without lymphangioplasty. Out of the several procedures described in the literature, modified Charles procedure looks most promising. These surgical procedures if performed well give remarkably good cosmetic results with tremendous improvement in quality of life of these unfortunate patients with genital elephantiasis. [5]

This case is unique due to its rare cause, viz. infection with pyogenic bacteria distal (legs) to the site of involvement.

---

**Darier’s sign: A model for studying dermographism**

Sir,

We read with interest, the article by Surjushe et al.[1] reviewing the clinical conditions that are associated with Darier’s sign, i.e., a type of dermographism confined to...
Physical (mechanical) mast cell activation seems to be the crucial event in the pathophysiological cascade leading to both conditions, i.e., positive Darier’s sign and dermographism. However, increased histamine release in susceptible skin does not always rely on increased numbers of mast cells. The exact mechanism of mechanical degranulation of tissue mast cells is still obscure. Possible mechanisms that can explain how friction forces (such as those used to elicit Darier’s sign) may lead to mast cell degranulation include:

(a) Minor tissue traumatization, probably mediated by local complement or plasminogen activation.

(b) Irritation of neuronal structures of the skin resulting in degranulation of adjacent/connected/dependent mast cells. Mechanical nerve stimulation may result either “specifically” via ‘professional mechanoreceptor’ activation or “nonspecifically,” e.g., via local activation of nociceptive nerve endings. It can be further speculated that abnormal neuronal stimulation may result from pathological function of mechanoreceptors directly on nerve endings or indirectly on other interconnected cells, including epidermal keratinocytes. Alternatively, local pathologic neuronal-mast cell connections may mediate mast cell degranulation and confined urtication.

(c) Finally, mechanical forces via tissue deformation may directly induce mast cells degranulation, probably via mechanoreceptors located on the mast cells themselves. In different species, mechano-sensitive ion channels seem to play a central role in the physiology of a wide spectrum of mammalian cell types, including mast cells. According to this assumption, Darier’s sign might reflect abnormal mechanosensitivity of mast cells within certain skin lesions. In analogy, constitutional generalized vulnerability of skin mast cells could underlie dermographism in some individuals.

In conclusion, we propose that comparative studies of skin lesions characterized by either positive or negative Darier’s sign with respect to the physiology of the contained mast cells, could not only contribute to the delineation of the pathomechanism of this peculiar clinical sign, but they may also serve as a vehicle to better understand dermographism.

Despoina Kiorpelidou, Georgios Galtanis, Ioannis D. Bassukas
Department of Skin and Venereal Diseases, University of Ioannina Medical School, Ioannina, Greece

Address for Correspondence: Dr. Ioannis D. Bassukas, Department of Skin and Venereal Disease, Department of Skin and Venereal Diseases, Medical School, University of Ioannina, 45110 Ioannina - Greece.
E-mail: ibassuka@cc.uoi.gr

REFERENCES