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An unusual skin reaction to an implanted medullar neurostimulator: Reticular telangiectatic erythema

Sadaf Sanii | Sebastien Menzinger | Pierre Piletta | Gürkan Kaya

Dermatology Department, Geneva Hospitals, University of Geneva, Geneva, Switzerland

Correspondence
Sadaf Sanii, Dermatology Department, Geneva Hospitals, 4 rue Gabrielle-Perret-Gentil, 1211 Geneva, Switzerland.
Email: sadaf.sanii@hcuge.ch

KEYWORDS: case report, implanted device, large telangiectasias, reticular telangiectatic erythema

CASE REPORT

A 67-year-old man, with a history of ischemic cardiomyopathy and an implanted medullar neurostimulator (since 2018) for a drop foot, was referred by the neurosurgeon for evaluation of possible allergic contact dermatitis from the implanted device. The patient reported the appearance of erythema 2 years after the implantation of the neurostimulator, which then gradually increased in size over the past year.

Physical examination showed, in the right hypochondrium above the device, a network of multiple large telangiectasias. The skin surface was intact without any erosion, hardening, fluctuation, or localised pain upon palpation (Figure 1).

Patch tests were carried out with the European baseline series, preservatives, and metal series with IQ Ultra patch tests chambers (Chemotechnique Diagnostics) together with components (silicone and others) of the device (tested 'as is') with semi-open tests (occlusion time 48 h). Readings on Day 2 (D2) and D4 showed negative results.

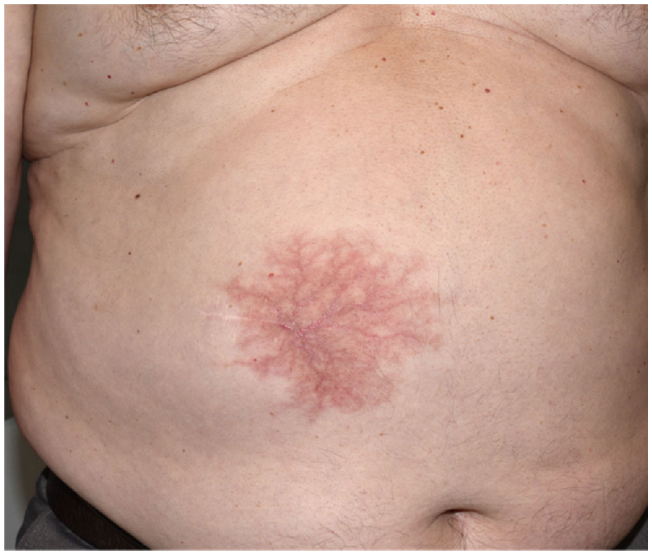

FIGURE 1 Network of multiple large telangiectasias overlying the device in the right hypochondrium.

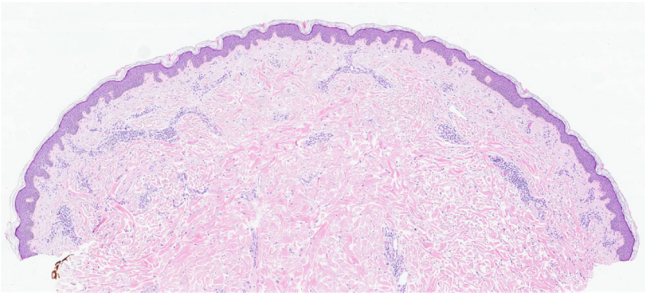

FIGURE 2 Histology. HE-50. Presence of a slight perivascular inflammatory infiltrate composed of lymphocytes, histiocytes and plasma cells, associated with few dilated vessels.

Thermographic studies showed that the temperature was about 5°C higher in the erythematous region compared to the same location on the left side.

Histological analysis of a skin biopsy showed a dermal perivascular inflammatory infiltrate with lymphocytes, histiocytes and plasma cells associated with dilated vessels (Figure 2).

All these findings led to a diagnosis of reticular telangiectatic erythema (RTE) associated with an implanted medullar neurostimulator.

DISCUSSION

RTE is a rare entity, typically reported to occur following the placement of implanted cardiac devices or drug delivery systems.[1] Occasionally, it may develop in patients with spinal cord stimulators, infusion pumps, or other implanted devices.[2] Patients usually develop asymptomatic, blanchable erythematous and reticulated telangiectatic lesions overlying the area of the implanted device, and its visual aspect is quite unique. The lesions tend to persist and may even progress with time. Other conditions must usually be excluded, among others, contact dermatitis, device extrusion, and skin infection.[3] Indeed, a recent role for *Staphylococcus epidermidis* has been suggested, although such cases have only rarely been reported.[4] RTE may occur months to years following the implantation. The diagnosis is essentially based on the clinical history and lesion morphology. Its exact physiopathology remains unclear.

Triggering factors, such as heat, diverse electrical or magnetic fields[3,5] autonomic dysregulation, low-grade infection due to a (biofilm-producing) bacterium such as *S. epidermidis*, and mechanical obstruction of venous flow[4–6] have all been implicated or suspected, but an allergic aetiology has never been demonstrated. Other investigators have postulated that RTE results from changes to the microcirculatory environment. These changes may occur secondary to healing or result from device-related obstruction of blood flow.[7] Thus, management of RTE usually includes reassurance, rather than replacement of the device,[3] except in cases where (low-grade) infection is highly suspected and removal/replacement may then sometimes be beneficial.[4]

This entity deserves to be known by clinicians for its unique clinical presentation mimicking possible contact allergies, also to ensure proper management. As replacement or extraction of a device is usually not necessary, and spontaneous resolution may occur,[2] dermatologists but also other physicians (e.g., cardiologists, thoracic and neurologic surgeons) should be aware of its existence to avoid unnecessary surgical procedures.

AUTHOR CONTRIBUTIONS

Sadaf Sanii: Conceptualization; investigation; writing – original draft; methodology; writing – review and editing. **Sebastien Menzinger:** Writing – review and editing; validation; supervision. **Pierre Piletta:** Methodology; conceptualization; investigation; writing – review and editing; supervision; validation. **Gürkan Kaya:** Writing – review and editing; supervision; validation.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

ORCID

Sadaf Sanii https://orcid.org/0009-0008-8507-6771

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Strings-attached allergy, from father to son

Arjun M. Bashyam | **Ponciano D. Cruz Jr.**

Department of Dermatology, University of Texas Southwestern Medical Center, Dallas, Texas, USA

Correspondence
Arjun M. Bashyam, Department of Dermatology, University of Texas Southwestern Medical Center, 5323 Harry Hines Blvd, Dallas, TX 75390-9069, USA.
Email: arjun.bashyam@utsouthwestern.edu

KEYWORDS: abietic acid, bowed string instrument, case report, cello, colophony, contact dermatitis, musical instrument, rosin, violin

INTRODUCTION

We report a case of severe allergic contact dermatitis (ACD) in which the occupation of a primary relative was most relevant.

CASE REPORT

A 16-year-old Caucasian boy was referred to the Contact Dermatitis Clinic at the University of Texas Southwestern Medical Center for an