Clinical picture

Embola cutis medicamentosa (Nicolau syndrome)

A 76-year-old woman presented with an indurated and painful, ecchymotic plaque on her right buttock 48 h after an intramuscular injection of ketorolac tromethamine for coxarthrosis (Figure 1). She stated that injection had been extremely painful, with initial blanching at the injection site. At presentation, blood results, including creatinine kinase, were unremarkable. Superficial ultrasonography showed diffuse oedema, with sparing of the muscle and no fluid collections. Bacteriological culture of swabs grew only resident flora. Oral cefotaxime (400 mg/day for 8 days) plus nimesulide β-cyclodextrin did not prevent progressive necrotizing so plastic surgery was performed, the lesion healed in 2 months with a depressed scar.

Embola cutis medicamentosa is a rare, still unexplained complication of injection of several drugs, characterized by cutaneous, subcutaneous and even muscular aseptic necrosis in a livedoid pattern. First described by Freudenthal and Nicolau, it typically presents with pallor, owing to a local reflex vasospasm, and pain, rapidly followed by erythema, livedoid/haemorrhagic patch, blistering and variable features of necrosis.

On pathogenesis, experimental data disproved the possible allergic/immunologic pathomechanism as well as the role of chemical–physical features of the drug, the solution pH or the injection technique. The most reasonable hypothesis remains that of an unintentional paravasal injection leading to vessel wall damage, acute arterial thrombosis and subsequent necrosis. Besides, medical literature highlights the difficulties in performing intramuscular injection, with only 5% of females and 15% of males receiving the drug properly.

Drugs that have been associated with Nicolau syndrome include non-steroidal anti-inflammatory drugs, local anaesthetics, corticosteroids, antibiotics, recombination interferons, sedatives, iodine sclerosing substances when administered intramuscularly and intraarticularly, as well as vaccines, Tumour Necrosis Factor-alpha antagonists and immunomodulators injected subcutaneously.

Evolution is unpredictable, with possible complications being myositis, abscess, nerve palsies, muscle atrophy and, rarely, myonecrosis.

Treatment is symptomatic, obtained through pain control, antibiotic prophylaxis and conservative surgical interventions.

Photographs and text from: C. Guarneri, Department of Social Territorial Medicine, Section of Dermatology, University of Messina and Institute of Dermatology, Policlinico Universitario ‘G. Martino’, via Consolare Valeria – Gazzi, 98125 Messina; V. Bevelacqua, Dermatology Unit, AORNAS ‘Garibaldi’ Hospital and Department of Biomedical Sciences, University of Catania; G. Polimeni, IRCCS Centro Neurolesi ‘Bonino Pulejo’, via Palermo – loc. Colli San Rizzo, 98100 Messina, Italy.

email: cguarneri@unime.it

Conflict of interest: None declared.
References


