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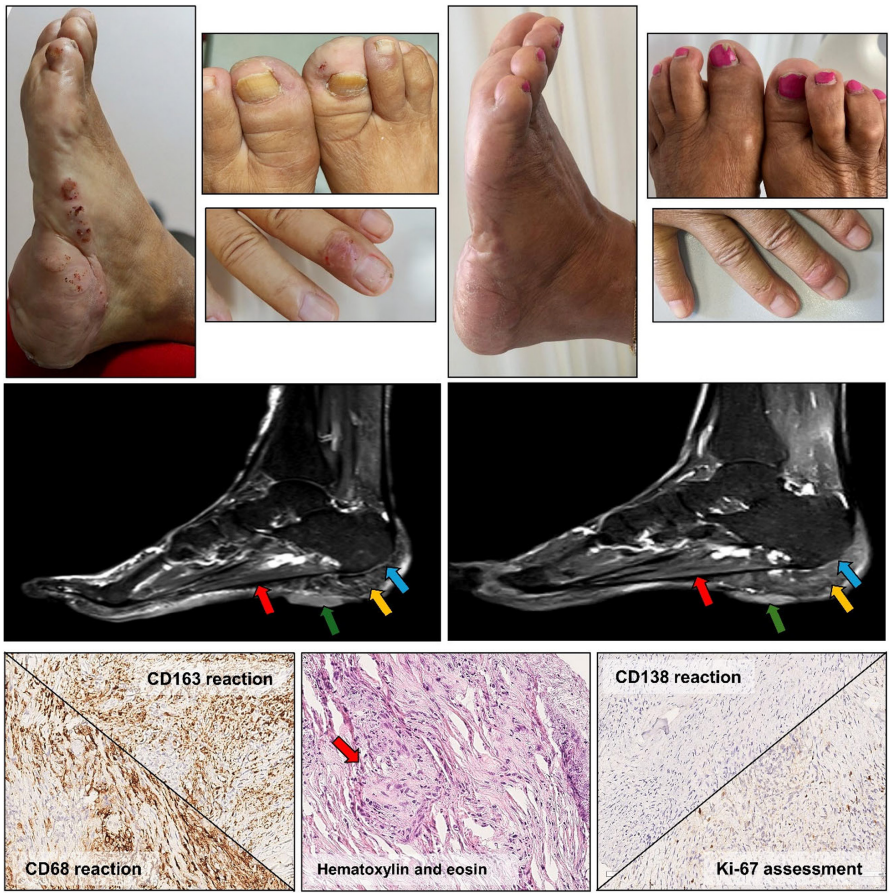
IMAGES IN HAEMATOLOGY

M-protein-related necrobiotic granuloma in a multiple myeloma patient treated with daratumumab, lenalidomide and dexamethasone



A 75-year-old Immunoglobulin A-light chain k (IgA-k) smouldering multiple myeloma patient started complaining of pain in both soles of her feet which had progressively worsened and limited her daily living activities (DLA). On physical examination, both heels and big toes were enlarged with irregular, indurated, painful, itchy nodules, some of the ulcerated; the periungual region of the right middle finger also appeared erythematosus and de-epithelised (left upper panels, photographic images). No other skin lesions were present. Magnetic resonance imaging (MRI) of both feet showed plantar fasciitis (red arrow) with reactive oedema of the calcaneal spongy bone tissue (blue arrow), oedema of subcutaneous soft tissue (yellow arrow) and several nodules (maximum 25 mm in diameter; green arrow) on the plantar side (left middle panels, MRI). After two non-diagnostic samples, an ultrasound-guided tru-cut biopsy of the nodules was performed and histological examination (lower panels from the left to the right) led to the diagnosis of reactive necrobiotic granuloma: strands of loose connective tissue with cellular areas consisting of ill-defined CD163$^+$, CD68$^+$ histiocyte aggregates and scattered neutrophiles with central necrosis (red arrow); absence of

plasma cells (CD138 reaction negative); and very low proliferation index (Ki67 1%). In addition to the necrobiotic granuloma, possibly related to the M-protein, a thorough work-up was repeated showing one myeloma-defining event (≥60% bone marrow plasma cells). Treatment with daratumumab–lenalidomide–dexamethasone (DRd) was started. Topical 0.05% clobetasol ointment, for 1 month, and urea-based topical moisturizer were also added to DRd as suggested by dermatologists. At 1 year through treatment, the M-protein dropped from 39 to 0.7 g/L and a very good partial response, as best response, was achieved. Concurrently, the skin lesions had progressively improved (right upper panels, photographic images) with the complete resolution of the pain, the itch, the ulcers and DLA recovery as well as MRI showed the resolution of the plantar fasciitis and the subcutaneous oedema with a slight reduction of the subcutaneous nodules (right middle panels, MRI).

To our knowledge, among the wide range of granulomatous disorders, only necrobiotic xanthogranuloma has been ascribed to M-protein,[1] and anti-plasma cell clone drugs have been used in some cases.[2–4] On the one hand, we cannot exclude that foamy histiocytes, typically seen in necrobiotic xanthogranuloma,[1] may have been present in the residual tissue not included in the tru-cut sample, but on the other hand, the clinical presentation of necrobiotic xanthogranuloma does not match to our case.[1] All these elements support the theory of being an unusual and previously undescribed M-protein-related cutaneous involvement, successfully treated with anti-plasma cell clone regimen.

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ETHICS STATEMENT

The consent form was approved by AOU Città della salute e della Scienza, University of Turin, Italy.

PATIENT CONSENT STATEMENT

The patient gave her informed consent to the use of her medical charts, MRI imaging, histology imaging and photos for medical research purpose.

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