

Interesting Images

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Reflectance Confocal Microscopy Can Help in Detecting Clinically Silent Mammary Paget Disease: A Case Report

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Interesting Cases

Breast cancer remains a significant health concern worldwide, necessitating early detection and treatment. The rapid appearance or a change in the shape of skin lesion on the breast or just of the nipple-areola complex(NAC), especially if it is unilateral needs to be evaluated.¹ The differential diagnosis of lesions involving the nipple and areola complex encompasses a broad spectrum of conditions, ranging from benign tumours to inflammatory diseases diagnostically challenging.² Several primary or secondary tumours such as inflammatory skin lesions can affect this body area. Ultrasound, mammography, or magnetic resonance imaging (MRI) are the most used non-invasive diagnostic techniques for breast cancer, but in recent years reflectance confocal microscopy (RCM) and optical coherence tomography have emerged as additional tools to diagnose cases characterized by cutaneous changes.³⁻⁵ The introduction of new techniques such as reflectance confocal microscopy (RCM), may open new perspectives in the non-invasive diagnosis of mammary paget disease (MPD). RCM is a non-invasive diagnostic technique that allows high-resolution images of the skin at microscopic level in real time. It is non-invasive, painless and repeatable, making it a valuable tool in the early diagnosis and monitoring of skin diseases. A lady in her 43s presented to our clinic complaining about itching around her right nipple. There was no personal or familial history of neoplasia. Physical examination was otherwise unremarkable. Clinical examination with palpation of her right breast was normal (Figure 1a); dermoscopy was aspecific with a few yellowish scales (Figure 1b). Reflectance confocal microscopy (RCM) instead showed at the epidermal layer several large and poorly reflective cells, which appeared as dark holes, usually larger than the neighboring keratinocytes. High-reflective tumor nests were found in the dermal-epidermal junction (Figure 2). All these finding were suggestive for Paget disease, therefore a skin biopsy was performed, which showed sections of skin with epidermal layer diffusely infiltrated by atypical, large epithelioid cells (Figure 3a) strongly positive for cytokeratin 7 (Figure 3b). Morphological features consistent with a mammary Paget's disease. Furthermore, the epidermal lining showed mild parakeratotic hyperkeratosis. The diagnosis of MPD represent a significant diagnostic and therapeutic challenge, that is usually detected only at later stage; therefore the recent use of RCM is gaining attention due

to its ability to identify *in vivo* typical features of Paget cells, even when lesions are clinically not suggestive. The synergistic application of non-invasive diagnostic imaging holds promises as a comprehensive diagnostic tool for skin breast lesion evaluation, offering real-time, non-invasive imaging with potential applications in clinical practice breast specialist for improved diagnosis, therapeutic decision and treatment monitoring, but also in achieving optimal aesthetic outcomes, significantly improving patients' quality of life and optimizing clinical outcomes.

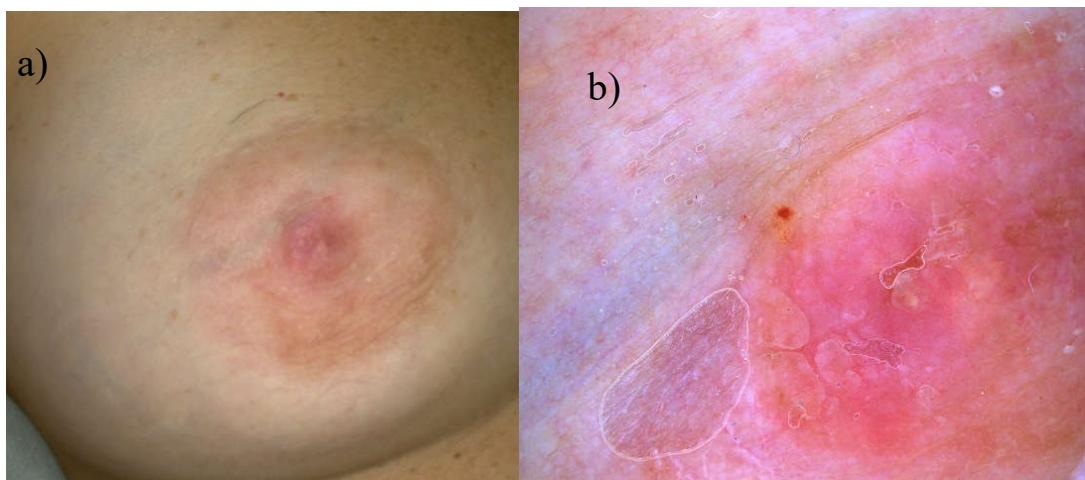


Figure 1. a) Macroscopic aspect: aspecific b) Aspect on videodermoscopy showing a few yellowish scales.

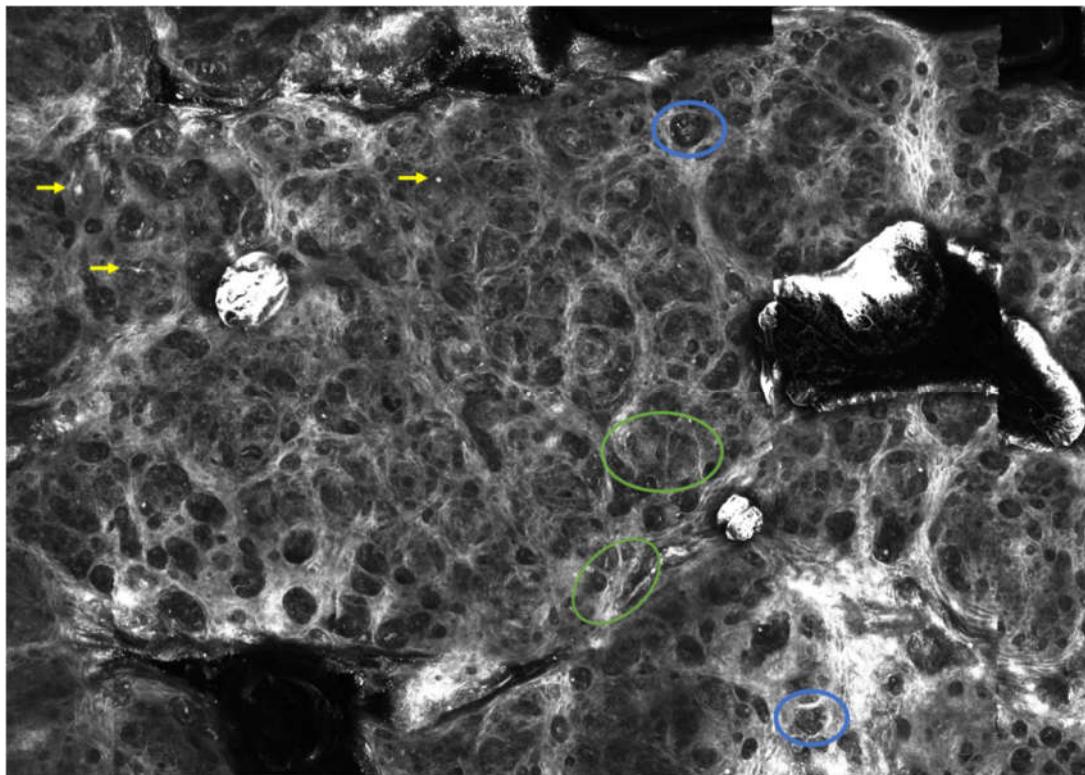


Figure 2. Aspect on RCM: single atypical cells with bright particles (yellow arrowhead), big cells with a medium-reflective central area and a peripheral large dark halo (blue circle), high-reflective tumor nests at dermo-epidermal junction surrounded by severe inflammation (green circle).

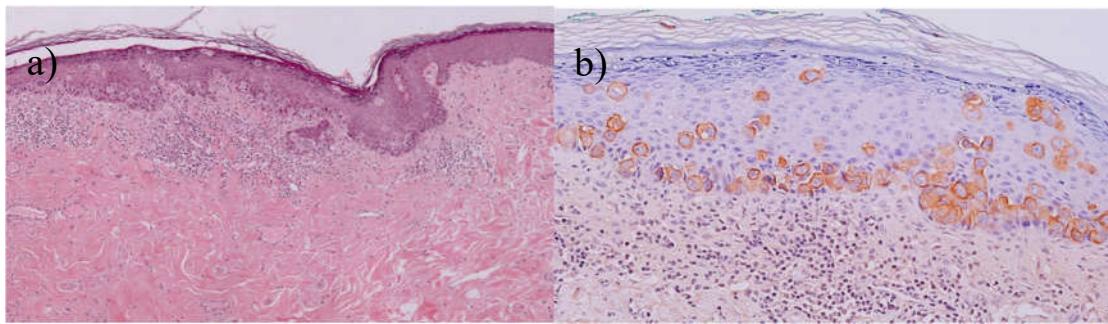


Figure 3. a) Histological aspect: infiltration of the epidermis by large and atypical epithelioid cells b) Positive immunohistochemical staining for cytokeratin 7.

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