LUPUS ERYTHEMATOSUS PROFUNDUS WITH UNUSUAL CLINICAL MANIFESTATIONS – CASE REPORT HIGHLIGHTING A NEW DIAGNOSTIC APPROACH

ANDREEA CIFREA*, ANDRADA NICOARĂ*, MARIA BUNGĂRDEAN**, MARIA CRIȘAN***

Summary

Lupus erythematosus profundus (LEP) is a rare form of chronic cutaneous lupus erythematosus. We report the case of a 60-year-old Caucasian woman who presented with discrete erythematous patches and nodules, located on the lower abdomen and posterior lumbar region. Progressively, the red patches involved the mammary glands and the face. The clinical exam did not reveal any other abnormalities. High frequency ultrasound (HFUS) of the rash was performed and showed a vasculitic process in the deep dermis and hypodermis. A skin biopsy from the abdomen was initially nonspecific. Correlating the HFUS findings, we asked the pathologist to examine more profound sections, including the adipose tissue. Thus, the deeper sections revealed a vasculitic process and lobular panniculitis, with a dense infiltrate of lymphocytes, confirming the diagnosis of LEP. The clinical and laboratory examinations ruled out systemic lupus erythematosus. Treatment with topical and systemic steroids was first administered and once we had the histological confirmation of diagnosis, the patient was started on Hidroxichloroquine, with good clinical response. Our case report highlights the importance of using new techniques (HFUS) for a more accurate diagnosis.

Keywords: *lupus erythematosus profundus, high frequency ultrasound, panniculitis, Hidroxichloroquine.*

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Introduction

Lupus erythematosus panniculitis, also called lupus erythematosus profundus, is a rare variant of chronic cutaneous lupus erythematosus (CCLE), that primarily affects subcutaneous fat. LEP commonly presents in the third-to-sixth decades of life, with a female predilection. The most frequent cutaneous manifestations are indurated plaques or subcutaneous nodules, and sometimes ulcerations. The lesions occur predominantly on the face, upper arms, upper trunk, breasts, buttocks, and thighs [1-5]. Lesions may be tender and painful and frequently heal with atrophy and scars [4]. It is a disorder with variable presentation and the lesions are not always detected during the physical examination, thus in some cases, diagnosis can be a challenge [6]. Patients with LEP present most commonly without any or only mild signs of systemic manifestations. While LEP can only be found in 2-5% of patients with systemic lupus erythematosus (SLE), 10-50% of patients with LEP have or eventually develop SLE [7]. The clinical diagnosis must be confirmed by histology. A deep tissue biopsy is recommended to provide enough adipose tissue.

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Material and method

We present a 60-year-old Caucasian woman with LEP with unusual manifestations. She presented initially with discrete erythematous patches and nodules, located on the lower abdomen and posterior lumbar region. Progressively, the red patches involved the mammary glands and the face. The plaques and nodules were slightly indurated and intermittently inflamed, but not tender or itchy (figure 1). She denied any other symptoms (polyarthralgies, photosensitivity, Raynaud's phenomenon, xerostomia, malar rash, oral ulcers or digital ulcerations, fevers, chills, night sweats, weight loss, weakness/fatigue). There was no family history of lupus or autoimmune diseases. Laboratory test results were fairly unremarkable. Full blood count, liver and kidney function tests, complement levels, C-reactive protein, anti-nuclear anti-body titer, anti-double stranded DNA anti-bodies, anti SSA/RO and anti SSB/LA antibodies were negative. Urinalysis was within normal range. Syphilis serology was negative. At this stage, the differential diagnosis was quite extensive and we needed histology, which, at first glance did not offer any specific result. HFUS (15 MHz) revealed important "in vivo" aspects that guided the diagnosis (figure 2). At the sub-umbilical abdomen, there were small hernias of the hypodermis in the dermis, in the form of hypodermic masses with intense vascularization, in the deep dermis and hypodermis. Vessels were seen in the septa of adipose tissue. This finding narrowed the diagnosis to vasculitis, hypo-dermitis or angiomatosis.

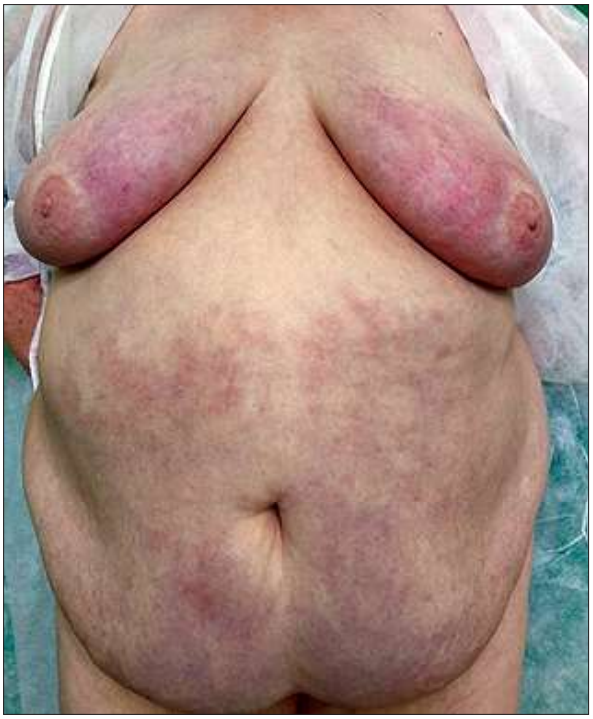

Figure 1. Clinical aspect: erythematous patches and nodules, located on the lower abdomen.

A tissue biopsy from the abdomen was initially reported by the pathologist as having

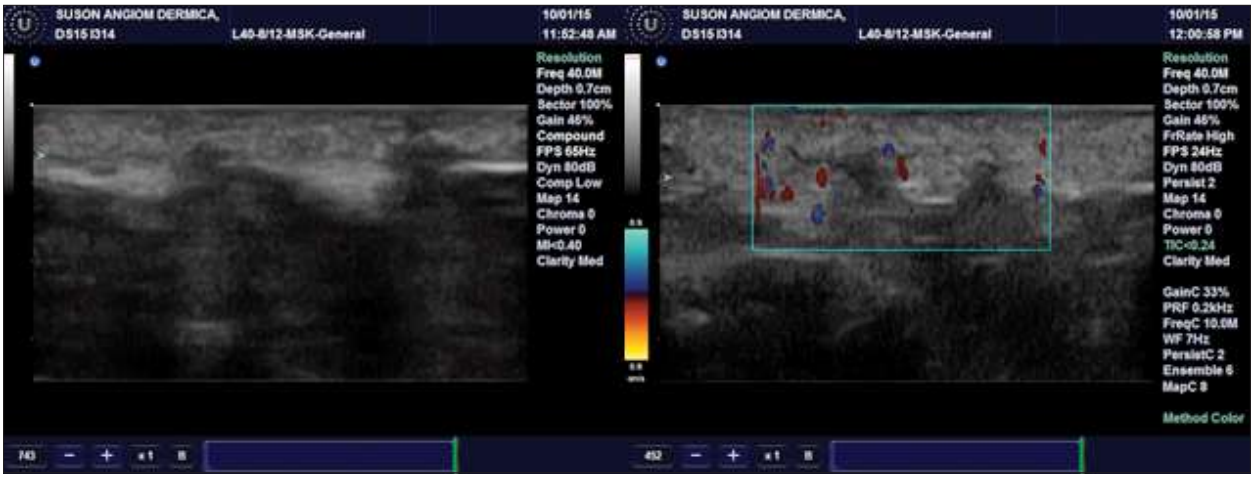

Figure 2. HFUS images performed over the sub-umbilical region demonstrates small hernias of the hypodermis in the hyperechoic suprajacent dermis associated with increased vascular flow on Color Doppler.

inconclusive features, that supported an inflammatory process localized into the dermis. After correlation with the ultrasonographic aspect, deeper sections were analysed and the supplemental report showed histological features suggesting LEP (figure 3). Histological aspect and immunohistochemical stains (CD20+, CD3+, SMA, CD31 and CD34) showed a mixed inflammatory infiltrate, confirming the diagnosis of LEP.

Discussions

Lupus profundus was first reported in 1883 by Kaposi [8], but the term lupus erythematosus panniculitis was first introduced by Irgang in 1940 [9]. Since then, this entity is also known as ''Kaposi–Irgang disease''. Later, LEP was described in the absence of discoid lupus erythematosus (DLE) on the overlying skin and established as a subtype of lupus erythematosus [10]. When LEP presents in combination with SLE, it seems to be that the panniculitic disease is a marker for less severe variants of SLE [11].

Ultrasound represents a modern, non-invasive imaging method, which provides the morphological appearance of the skin lesions, together with changes of the underlying tissue [12]. Imaging features of LEP are extremely scarce

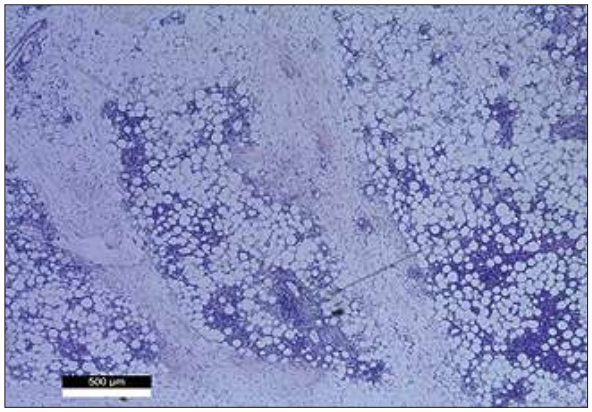

Figure 3 A. Skin histological section, HE stain: an abundant lymphocytic inflammatory infiltrate, especially perivascular, in the hypodermis; vessels with the appearance of obliterating endarteritis; high density of collagen in the deep dermis and the interlobular septa, with fibrosis and inflammatory infiltrate.

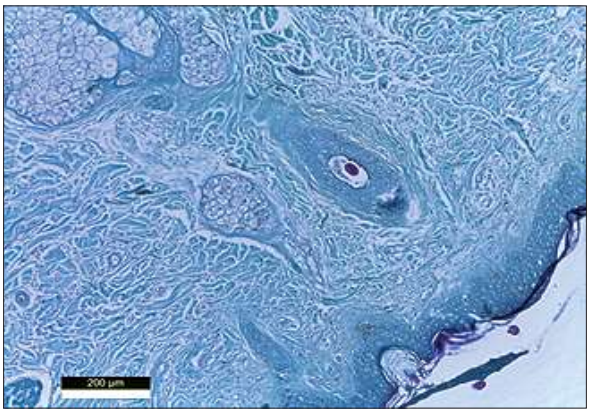

Figure 3 B. Alcian blue stain: mild dermal mucinosis, accentuated perifollicularly.

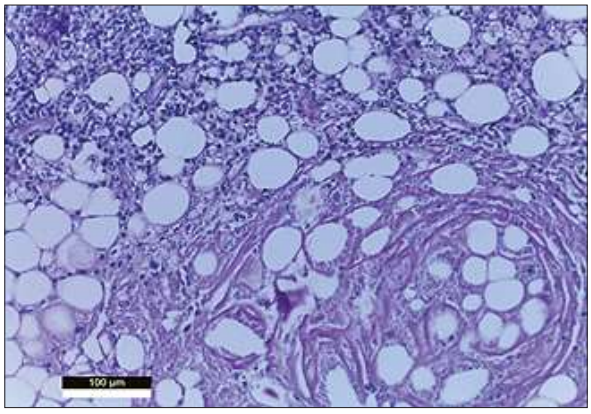

Figure 3 C. HE stain: hyaline necrosis

in the literature. Ultrasound shows with high accuracy the inflammatory changes and hyperemia [13]. In our case, ultrasonographic images were a game-changer, helping to narrow the differential diagnosis and pointing the pathologist towards deeper hypodermic sections and special stains. It was crucial to rule out differential diagnosis such as subcutaneous panniculitis-like T-cell lymphoma, deep morphea, erythema nodosum, erythema induratum of Bazin, post-steroid panniculitis, Weber–Christian disease and sarcoidosis [14-16].

Histopathologic findings in LEP patients are characterized by lobular or mixed panniculitis with lymphocytic inflammatory cells of the fat lobule [17-18]. Other features encompass dermoepidermal changes and lymphocytic vasculitis in the small vessels of the fat lobule. Hyaline necrosis is a hallmark of lupus panniculitis [19]. The histopathological pattern of our patient was consistent with LEP.

Regarding the treatment of LEP, antimalarials are the first therapy option. Corticosteroids are the second line of therapy. In refractory cases, treatment options include thalidomide, methotrexate, mycophenolate mofetil, cyclosporin and intravenous cyclophosphamide. Sunscreens are recommended in all cases [20]. Most cases of LEP have good prognosis. Our patient was treated with hydroxychloroquine and had follow-ups every 3-6 months. She continued the treatment with hydroxychloroquine and the clinical picture improved, with no signs of progression towards LES.

Conclusion

LEP is a rare condition, which is hard to diagnose especially when the clinical features are unusual. Ultrasound is a modern, non-invasive diagnostic tool, capable of guiding the diagnosis and helping the clinician and pathologist. The presence of hypertrophic adipose lobules and the connective tissue septa containing prominent blood vessels steered the pathologist towards serial sections involving a deeper, larger amount of adipose tissue.

HFUS is easily accepted by the patient, has no risk of irradiation and is readily available almost everywhere, providing good quality measurable data. It can be considered as a "virtual scalpel", that guides, completes and supports the histological diagnosis.

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Conflict of interest
NONE DECLARED

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