

# A Case of Lipomembranous Panniculitis Associated with Rheumatoid Arthritis

Zahra Asadi-Kani, MD  
Hamideh Moravvej, MD  
Mehdi Gaisari, MD  
Sima Kavand, MD  
Marjan Saedi, MD

Skin Research Center, Shahid Beheshti University, M.C. Shohada-e Tajrish Hospital, Tehran, Iran

Corresponding author:  
Hamideh Moravvej, MD  
Skin Research Center, Shahid Beheshti University, M.C. Shohada-e Tajrish Hospital, Tehran, Iran  
E-mail: hamideh\_moravvej@yahoo.com

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## Abstract

Lipomembranous panniculitis is a special type of fat necrosis which has been associated with several clinical conditions, mainly chronic venous insufficiency and connective tissue disorders such as lupus profundus, morphea, systemic sclerosis, and dermatomyositis. We report a 50-year-old woman with known rheumatoid arthritis who presented with a painful indurated erythematous plaque on her right leg. Histologic examination demonstrated cystic areas of fat necrosis lined by wavy eosinophilic hyaline membrane with convoluted projections of the membrane into the cysts. This finding is diagnostic of lipomembranous panniculitis. To our knowledge, this is the first report on lipomembranous panniculitis associated with rheumatoid arthritis. (*Iran J Dermatol* 2009;12 (Suppl): S27-S29)

**Keywords:** panniculitis, rheumatoid arthritis, lipomembranous panniculitis

## Introduction

Lipomembranous panniculitis is a specific type of fat necrosis that was first described in Nasu-Hakola disease, a disorder characterized by membranocystic degeneration of long bones and adipose tissues and also sudanophilic leukodystrophy of the brain<sup>1,2</sup>. Recent reports have demonstrated that membranocystic changes are not specific for this disease and can be associated with other clinical conditions mainly venous stasis and ischemia<sup>2</sup>. It is a report of a case with lipomembranous panniculitis associated with rheumatoid arthritis.

## Report of a Case

A 50-year-old woman, known to have seropositive rheumatoid arthritis, was visited with a painful, indurated erythematous plaque on her right leg since two months ago. No history of trauma or other diseases was recorded. She had not received any drugs for her rheumatoid arthritis in the last two years. Under the impression of cellulitis, a course of antibiotic therapy was prescribed but there was no improvement. The clinical assessment

disclosed a lilac-colored, sclerotic, tender plaque on her right leg (Figure 1). The patient had no other symptoms or findings on examination. There was no sign of stasis dermatitis or varicose veins. Biopsy was performed for histological evaluation.

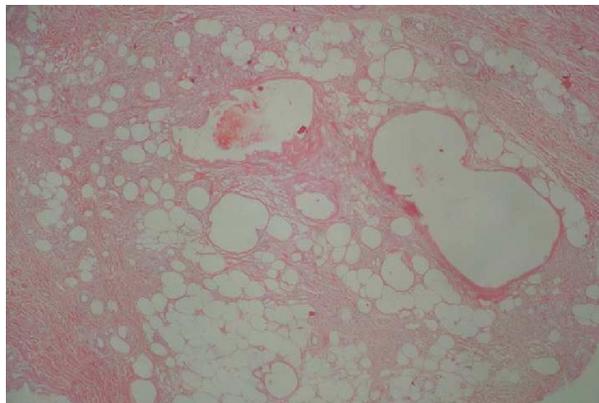
Skin biopsy showed prominent necrosis of fat cells with cystic spaces, which were variable in size, in fat lobules lined with an eosinophilic membrane with convoluted projection into the cystic spaces (Figure 2). The membrane was stained with periodic acid-Schiff (Figure 3). There was prominent septal vasculitis (Figure 4). The final pathologic diagnosis according to aforementioned findings was lipomembranous panniculitis.

## Discussion

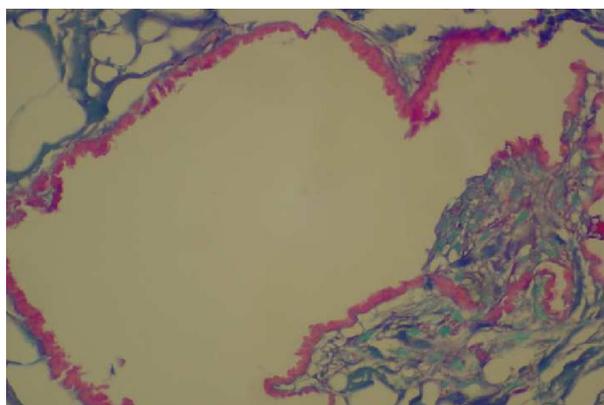
Lipomembranous panniculitis refers to a distinctive alteration in the adipose tissue that was first described by Nash<sup>1</sup>. The histological features of this disorder are characterized by cystic areas of fat necrosis lined by hyaline acidophilic membranes. Projection of the membranes into the cystic spaces is apparent. Other variable histological features include dilated veins, hemorrhage, endarteritis obliterans, sclerosis, calcified vessels and



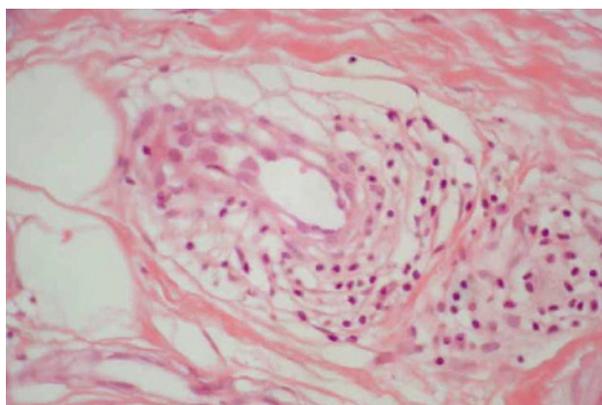
**Figure 1.** A lilac-colored, sclerotic, tender plaque on the right leg



**Figure 2.** Low power: Variably sized cystic structures within the fat that are surrounded by eosinophilic material (H&E\*10)



**Figure 3.** The feathery eosinophilic material is positive with periodic acid-Schiff staining (H&E\*40).



**Figure 4.** Prominent septal vasculitis (H&E\*40)

hemosiderin deposition <sup>2</sup>. Lipomembranous panniculitis can occur as a nonspecific reaction pattern in a wide range of disorders. In a study performed by Snow and Su <sup>3</sup>, several underlying associated disorders such as venous insufficiency, stasis dermatitis, erythema nodosum, morphea and lupus panniculitis were noted but the most common was venous insufficiency. In a series by Alegre et al. <sup>4</sup>, lipomembranous fat necrosis was associated with multiple colonic polyposis, chronic ulcerative colitis, celiac sprue, and psoriasis. Ishikawa et al. reported dermatomyositis as an associated systemic disease <sup>5</sup>. Pincemaille et al, <sup>6</sup> and Akay et al, <sup>7</sup> reported two different cases of lipomembranous fat necrosis associated with chemotherapy. In another report by Wong and Greenberg <sup>8</sup>, lipomembranous panniculitis was associated with trauma. Al-Brahim et al, <sup>2</sup> reported a case of lipomembranous panniculitis associated with liver cirrhosis and diabetes. To the best of our knowledge, this is the

first case of lipomembranous panniculitis associated with rheumatoid arthritis. According to the series about the associated underlying disorder and the histological findings, lipomembranous panniculitis may be associated with ischemic injury of adipose tissue, circulatory disturbance, and or metabolic disorders of lipid. The ischemia caused by vasculitis in rheumatoid arthritis may be the predisposing factor in the occurrence of lipomembranous fat necrosis in this disease.

In summary, lipomembranous panniculitis is not a particular disease but is associated with multiple underlying disorders. Rheumatoid arthritis should also be taken into consideration for the differential diagnosis of lipomembranous panniculitis and this condition should be distinguished from rheumatoid nodules.

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