Chapter 9
Panniculitis

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Definition

Panniculitis is a nonseptic inflammation of the subcutaneous adipose tissue often reflecting another disorder. It is divided into four histological subgroups, mostly lobular or mostly septal, each one being either with or without vasculitis.

Originally described in 30 patients by Weber and Christian over 60 years ago as a syndrome of recurrent episodes of fever, arthralgia, fatigue, and nodular panniculitis, 30 such cases were later reclassified as erythema nodosum (12 cases), thrombophlebitis (6 cases), fictitial (5 cases), trauma (3 cases), or other lymphoma, leukemia, etc.) [1].

Differential Diagnosis

The diagnosis of panniculitis and the exclusion of other conditions are dependent on an adequately deep biopsy.

Conditions mimicking panniculitis include thrombophlebitis, fictitial lesions, trauma, local sepsis, and infiltrative lesions, e.g., lymphoma.

Within the classification of panniculitis itself, the histological subgrouping into mostly septal or mostly lobular ± vasculitis will guide the clinician as to which

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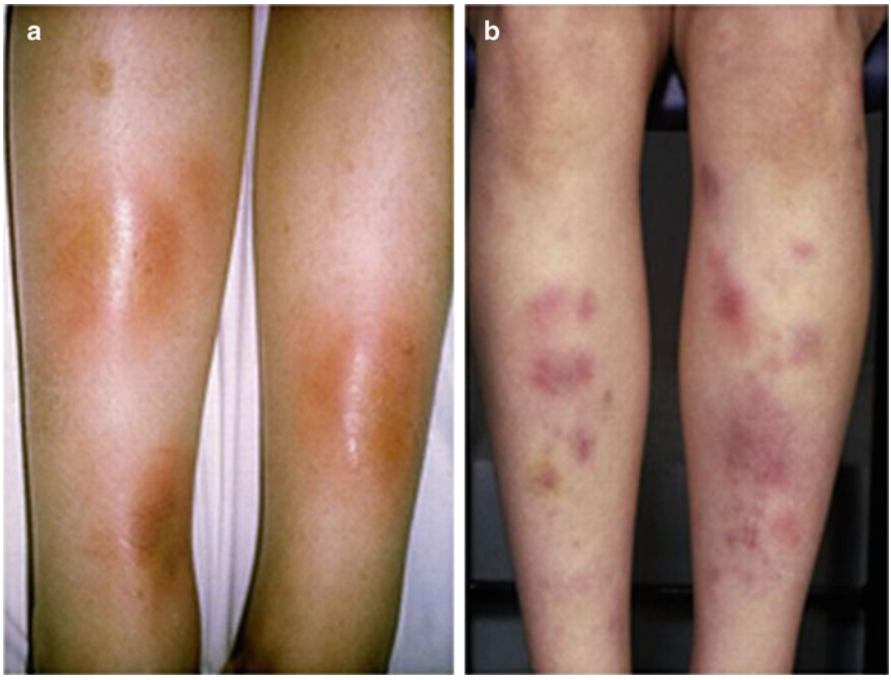


Fig. 9.1 Typical erythema nodosum of the lower legs (**a**) and an atypical macular form (**b**)

condition may be associated. On many occasions the diagnosis of panniculitis may remain as idiopathic.

The commonest panniculitis seen by a rheumatologist is erythema nodosum [2], a painful nonvasculitic, mostly septal form seen on the anterior surface of the lower legs (Fig. 9.1a).

However, erythema nodosum may be atypical, being either widespread small, macular mimicking cutaneous vasculitis or the neutrophilic dermatoses such as Sweet's syndrome (Fig. 9.1b) or diffuse periarticular and mimicking arthritis (Fig. 9.2). Involvement of the upper extremities alone is very rare for erythema nodosum. Known associations and triggers of erythema nodosum include intercurrent viral illnesses; streptococcal, mycobacterial, and yersinia infection; oral contraceptives; antibiotics; SLE and other connective tissue diseases; Crohn's disease; and primary biliary cirrhosis. In many cases of erythema nodosum, an associated trigger or disease will not be identified, up to 20 % in one series [3].

Another nonvasculitic, mostly lobular panniculitis is the rheumatoid nodule. Typically occurring on pressure areas such as the elbows (Fig. 9.3a) with a distinct histology (Fig. 9.4), they may occur anywhere and mimic gouty tophi.

Two other lesions have a similar histology to the rheumatoid nodule: granuloma annulare [4] and necrobiosis lipoidica diabeticorum. The former may be referred to a rheumatologist following biopsy of isolated nodular skin lesions, usually on the dorsum of the foot in a young patient following an intercurrent viral respiratory infection (Fig. 9.3b). Awareness of this self-limiting benign condition will avoid unnecessary biopsies and other investigations.

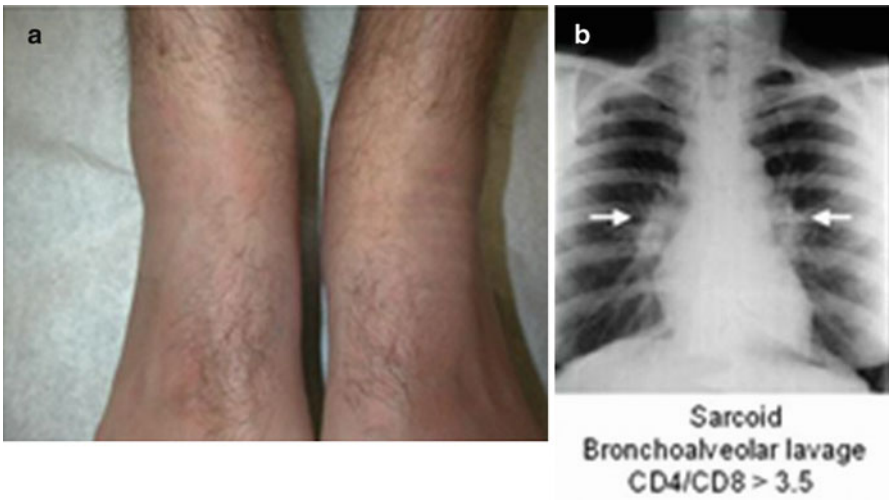


Fig. 9.2 Diffuse periarticular erythema nodosum on the right ankle – a chest X-ray showed large, bilateral adenopathy (*arrows*) consistent with Loeffler's syndrome (sarcoidosis)

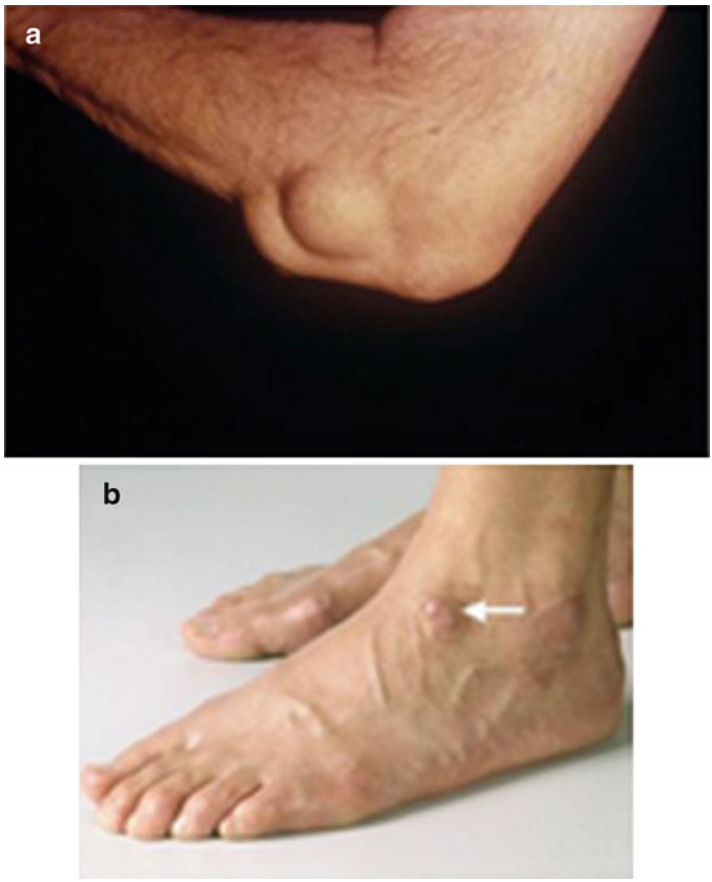


Fig. 9.3 Rheumatoid nodule on elbow (**a**), histologically identical to granuloma annulare on dorsum of foot in another patient (**b**)

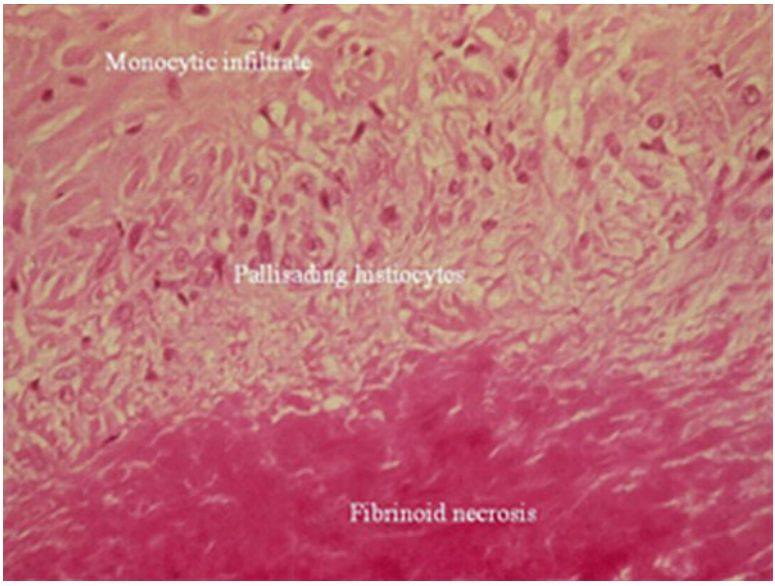


Fig. 9.4 Histology of a rheumatoid nodule

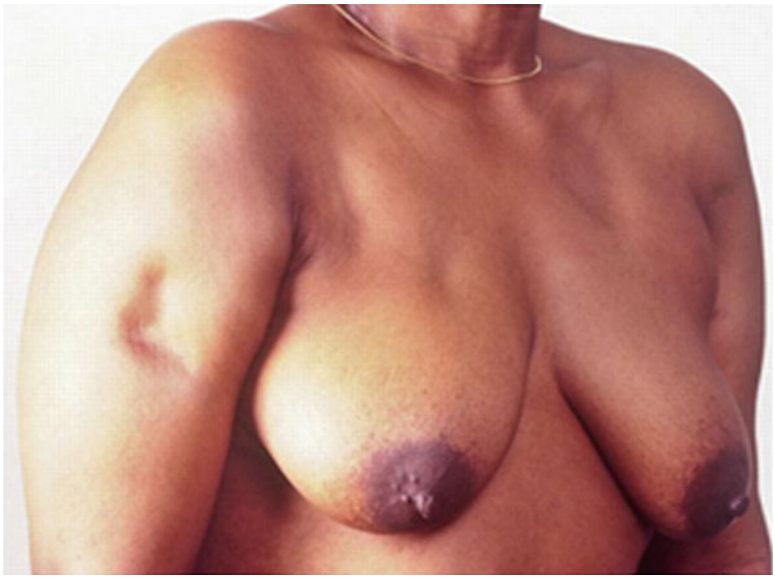


Fig. 9.5 Lupus profundus. Initially inflammatory nodules evolving to atrophy

An unusual form of panniculitis seen in <2 % of SLE patients is lupus profundus [5]. Occurring on the trunk and proximal extremities, this nonvasculitic, painless lesion is mostly lobular and evolves to atrophy (Fig. 9.5).

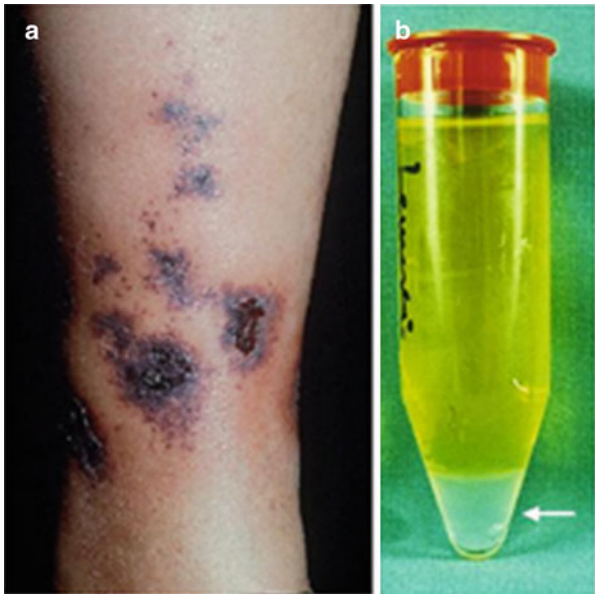


Fig. 9.6 Cryoglobulin-induced palpable purpura (**a**) after "cold pack" knee pain treatment. The cryoglobulins may precipitate at room temperature and be lost to assay (**b**)

The vasculitides may either mimic or induce a panniculitis. Vasculitides may be classified according to size or etiology. Large-vessel vasculitis is rarely associated with panniculitis. Cutaneous polyarteritis nodosa and the palpable purpura such as Henoch-Schönlein purpura and cryoglobulinemia (Fig. 9.6a) may all be confused with panniculitis. Cutaneous PAN is often seen in younger patients and children and, like HSP, may follow a streptococcal throat infection. HSP is associated with IgA deposition in the vessel wall. In cases of suspected cryoglobulinemia, serum should be kept at 37 °C before testing; otherwise, the cryoprotein may precipitate (Fig. 9.6b). Rheumatoid factor, antibodies to HCV, and paraproteins should be sought.

Behçet's disease may be associated with erythema nodosus-like lesions which differ from classical erythema nodosum in that the backs of the lower legs are involved, and the biopsy shows a vasculitic, mostly lobular histology. This is similar to the nonseptic panniculitis associated with TB called Bazin disease [6].

Biopsy

Figure 9.4 Rheumatoid nodule. Central fibrinoid necrosis surrounded by palisading histiocytes and an outer zone of monocytic infiltrate.

Figure 9.7. The mostly septal, nonvasculitic panniculitis of erythema nodosum (a) showing mixed inflammatory cells extending into the adjacent lobular fat. Small nodules composed of spindle to oval histiocytes arranged around a minute slit may be found (Miescher's radial granulomas). This is compared with the mostly lobular,

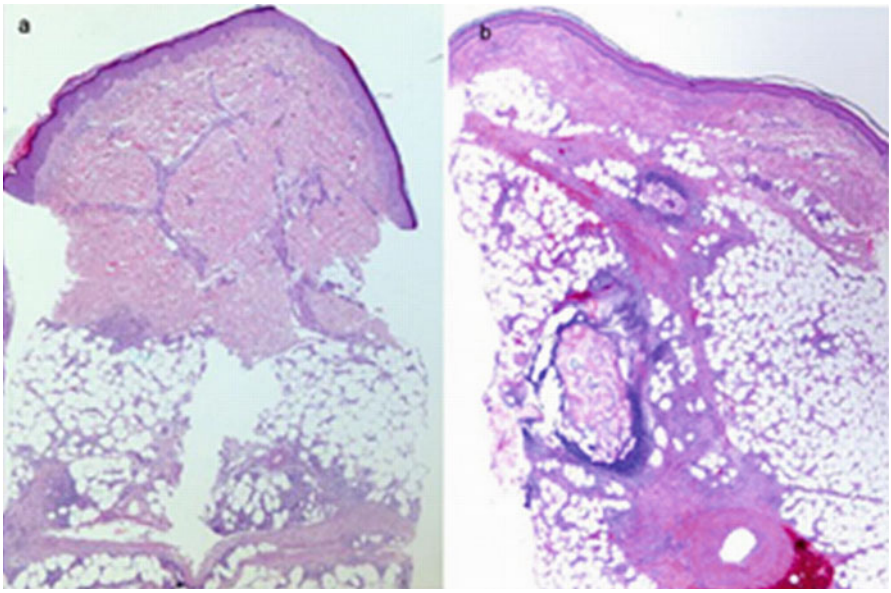
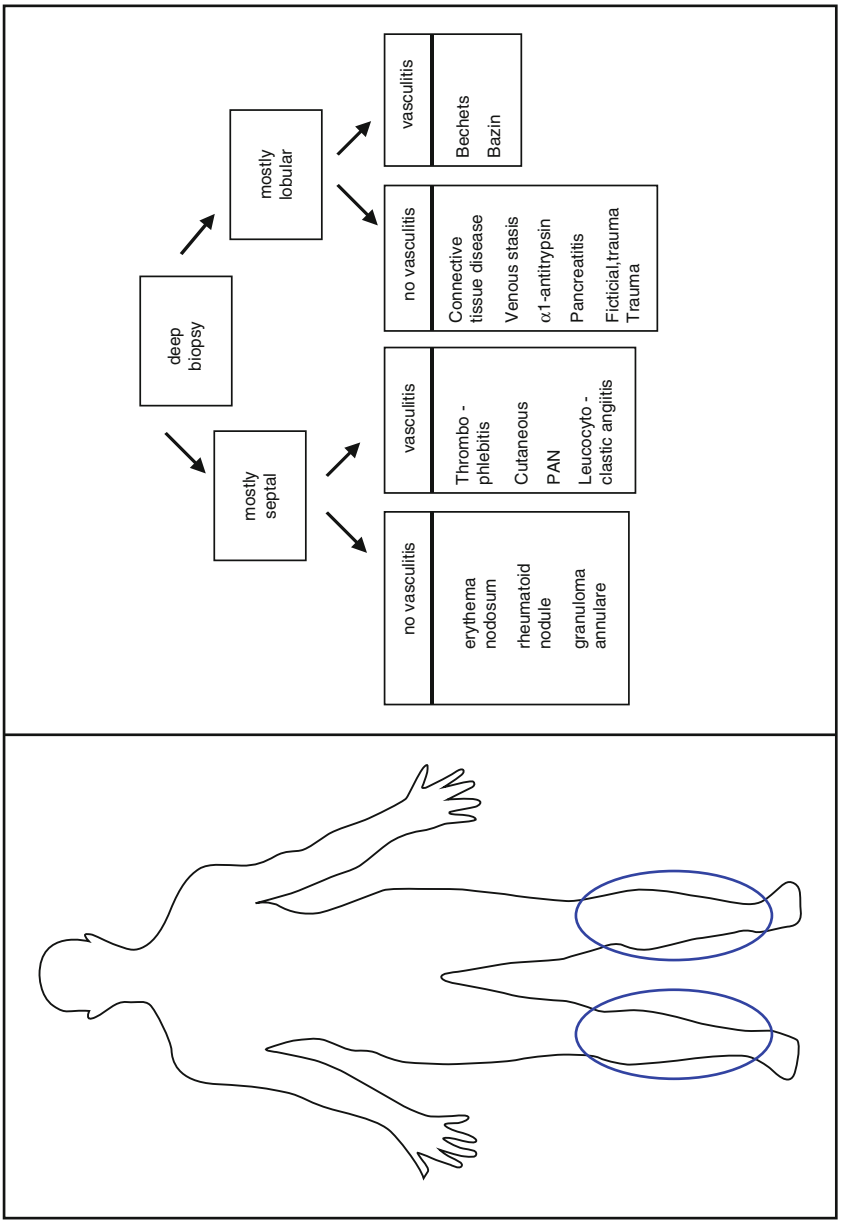


Fig. 9.7 Comparison of mostly septal (**a**) in erythema nodosum and mostly lobular (**b**) in pancreatitis-induced panniculitis. Neither have vasculitis

nonvasculitic panniculitis induced by pancreatitis (b) showing enzymatic fat necrosis, with the ghostlike outline of fat cells remaining. At the margins of the necrotic fat, there is a variable neutrophilic infiltrate with fine basophilic calcium deposits and some hemorrhage.

See Also

SLE, Vasculitis, sarcoidosis,


deep biopsy
mostly septal
mostly lobular
vasculitis
no vasculitis
vasculitis
no vasculitis
Thrombo - phlebitis
Cutaneous PAN
Leucocyto - clastic anglitis
erythema nodosum
rheumatoid nodule
granuloma annulare
Bechets
Bazin
Connective tissue disease
Venous stasis
α1-antitrypsin
Pancreatitis
Fictiial,trauma
Trauma

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