

## Clinical and Aetiopathogenic Characteristics and Prevalence of Panniculitis in Turkey: A Retrospective Clinical Study

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Sir,

The panniculitis represent a group of heterogeneous inflammatory diseases that involve the subcutaneous fat and have the same clinical appearance: subcutaneous erythematous nodules (1–3). Histopathological examination and numerous laboratory tests are required to determine the aetiological factors involved and define the type of panniculitis (1).

The aim of this study was to evaluate the prevalence, clinical and aetiopathogenic characteristics of patients with panniculitis who attended our dermatology clinic over a period of 2 years.

### METHODS

This study included patients with panniculitis who attended the 2nd Dermatology Clinic at Numune Education and Research Hospital (the largest government teaching hospital in Turkey) between January 2004 and January 2006. The patients were from the regions of East, South-East and Middle Anatolia. The patients' socioeconomic level was low-to-middle. The diagnosis of panniculitis was made on the basis of clinical and/or histopathological findings. All patients were questioned about their personal and family history of panniculitis and other associated disorders and drug intake (particularly oral contraceptives in female patients). Detailed systemic and dermatological examinations were performed in all patients. Haemoglobin, erythrocyte sedimentation rate (ESR), white blood cell count, urinalysis, total biochemical tests, levels of thyroid hormones, anti-nuclear antibody (ANA) and anti-streptolysin O (ASO) titres were investigated in all patients. In addition, a purified protein derivative of tuberculin (PPD) test and chest radiography were performed. Alpha-1-anti-trypsin levels were investigated in 21 patients. Histopathological examination of the lesions was performed in 50 patients; 13 patients refused to provide a lesional biopsy.

### RESULTS

Panniculitis was diagnosed in 63 (0.2%) of 31,680 patients who attended the dermatology clinic. The age range of patients with panniculitis was 16–78 years (mean age 36.9 years). (Female/male ratio 3.84:1).

The lesions were located on the legs only in 44 patients, leg and thigh in 6 patients, and leg and arm in 6 patients. The lesions were bilateral in 47 patients with involvement of the lower extremities, and unilateral in 11 patients.

The most common types of panniculitis were erythema nodosum (EN) and EN-like panniculitis of Behçet's disease (BD) (Table I).

EN was diagnosed in 43 (68.3) of patients with panniculitis. The age range of patients with EN was 16–78 years (36 females, 7 males; female/male ratio 5.1:1). Twenty-four of the patients were between 30 and 40 years of age. Laboratory tests revealed an increase in ESR and ASO in 17 and 11 patients, respectively. However, no focus of infection could be found in microbial cultures of the throat and nose. Three of the patients with EN had decreased thyroid hormone levels, one had decreased TSH level, and one had both decreased thyroid hormone levels and hypophysis adenoma. Three patients had increased white blood cell count. ANA was positive in 2 patients with no other findings of connective tissue disorders. Two patients were pregnant and one of the pregnant patients had factor V Leiden mutation. Brucellosis, hepatitis C positivity, inflammatory bowel disease and use of oral contraceptives were detected in one patient each. In 22 patients no aetiological factor could be found. The most common localization of EN was on the anterior side of the legs, although lesions were also observed on the arms, thighs and buttocks.

EN-like panniculitis of BD was diagnosed in 10 patients who were between 29 and 59 years of age. The female/male ratio was 1.5:1. The lesions were mostly localized on the legs. Increased ESR levels were detected in 2 of these patients. ASO titres were increased in 2 patients and leukocytosis was found in one patient. In 7 patients the lesions developed while using colchicum therapy.

Idiopathic lobular panniculitis was detected in one male (30 years of age) and 2 female patients (59 and 41 years of age). The patients' lesions were localized on the legs. All of the patients had fever and 2 had arthralgia also.

Nodular vasculitis was diagnosed in a 31-year-old man, a 51-year-old woman and a 53-year-old woman. The lesions were mostly on the legs.

Cold panniculitis was diagnosed in 3 female patients (aged 18, 23 and 24 years). The lesions were located on the thighs. All of the patients were overweight and

Table I. Classification of patients with panniculitis

Erythema nodosum	43
Erythema nodosum-like panniculitis of Behçet's disease	10
Idiopathic lobular panniculitis	3
Nodular vasculitis	3
Cold panniculitis	3
Subcutaneous sarcoidosis	1

were working in a cold environment. Routine laboratory tests and cryoglobulin levels were within normal limits in all patients. One patient had ANA positivity, but no finding of connective tissue disease was detected and direct immunofluorescence staining was negative.

Subcutaneous sarcoidosis was diagnosed on the lumbar area and the posterior side of the leg in a 30-year-old man.

Laboratory findings for all the patients with panniculitis are shown in Table II.

Histopathological examination of the lesions in 50 patients revealed a diagnosis of septal panniculitis without vasculitis in 31 patients, lobular panniculitis in 9 patients (3 with vasculitis, 6 without vasculitis) and mixed-type panniculitis in 10 patients.

Elevation of the lower extremities, topical treatment with wet dressings and non-steroidal anti-inflammatory drugs were recommended to the patients. Systemic antibiotics were administered to 6 patients and oral corticosteroid therapy in 4 patients.

## DISCUSSION

There are few studies investigating the spectrum of panniculitis in the literature. These studies usually collate the same groups of diseases, such as EN (1).

EN is the most common type of panniculitis (1), as was also found in our study. In reports in the literature, females are 3–6 times more commonly affected than males (1). This rate was 4.85 in our patients. The peak age of incidence of EN is usually 20–30 years (1), but was found to be between 30 and 40 years in our study. Streptococcal infections are the leading cause of EN in children, while in adults the most common causes of EN include drugs, sarcoidosis and inflammatory bowel disease (1). Although we detected increased ASO levels in 13 patients, we could not isolate streptococcus in the throat cultures of any of the patients. We detected pregnancy in 2 patients, and brucellosis, hepatitis C positivity, inflammatory bowel disease and use of oral contraceptives in one case each. The underlying cause of EN may also be idiopathic in 57–67% of the patients with EN (4). We could not detect any aetiological factor in about half of our patients with EN.

Table II. Laboratory tests in 63 patients with panniculitis

Increased ESR	19
Increased ASO	13
Leucocytosis	6
The changes of thyroid function tests	4
ANA positivity	2
$\alpha$ 1-anti-trypsin deficiency*	0
Isolation of bacteria on throat culture	0

\* $\alpha$ 1-anti-trypsin level was investigated in 21 patients

ESR: erythrocyte sedimentation rate; ASO: anti-streptolysin O titres;

ANA: anti-nuclear antibody.

EN-like panniculitis of BD has been reported less frequently in the literature and it is classified in the EN group (1). EN-like panniculitis of BD was diagnosed in 10 patients. It was classified as a different group, because BD is seen frequently in Turkey. While the female/male ratio was 4.85:1 for EN, for BD it was 1.5:1. Colchicum has been reported to be an effective treatment for EN-like panniculitis of BD (4), but in our patients 50% of the panniculitis lesions developed while they were taking colchicum therapy.

Idiopathic lobular panniculitis occurs predominantly in females between the ages of 30 and 60 years (5). We diagnosed idiopathic lobular panniculitis in 3 patients (2 females, 1 male). The ages of the patients were consistent with the literature. All of them had fever and 2 also had arthralgia. None of the lesions ulcerated.

Cold panniculitis appears most commonly in neonates; however, it may also develop during cold months in the thighs or buttocks of adults, especially in women (1, 3). We diagnosed cold panniculitis on the thighs of 2 young female patients in winter.

Nodular vasculitis is commonly localized on the legs in middle-aged women (6). In our study, nodular vasculitis was diagnosed in 3 patients mostly on the legs (1 male, 2 females). None of the patients showed any findings for tuberculosis in detailed investigations. None of the lesions ulcerated.

The specific lesions of sarcoidosis may rarely involve the subcutaneous fat (3). A male patient was diagnosed with subcutaneous sarcoidosis while he was being investigated for panniculitis in this study.

Consequently, the spectrum of panniculitides may differ from one country to another according to associated disorders, living conditions and/or socioeconomic status. EN and EN-like panniculitis of BD in panniculitides were found to be frequent in Turkey.

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