Eosinophilic panniculitis in a female child: An unusual presentation

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ABSTRACT

Eosinophilic panniculitis (EP) is characterized by prominent infiltration of subcutaneous fat with eosinophils. The etiology is diverse. This is not a disease but represents a reaction pattern that may occur in a variety of circumstances. The exact pathogenesis of the disease is still unclear. We present the case of a 6-year-old girl child who was diagnosed with EP.

Key words: Eosinophilic panniculitis, lower limb, female child

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INTRODUCTION

Eosinophilic panniculitis (EP) was first described by Burket and Burket in 1985. This disease may be considered a reactive process, often associated with a systemic condition.[1] EP is seen more frequently in females than males (3:1); it tends to occur in the third as well as in the sixth decade.[2]

Clinically, the patient presents with nodules, plaques, papules, or pustules. The lesions may be single or multiple, mainly affecting the legs, arms, trunk, and face in decreasing order. Histopathologically, lobules and septa are intensely infiltrated with eosinophils associated with other inflammatory cells. Sometimes, fat necrosis may be seen. Flame figures may also be present. There is no vasculitis. Changes may extend up to the reticular or the fascia.

CASE REPORT

A 6-year-old girl presented with complaint of a solitary, raised skin lesion of size 15 × 12 cm over the back of her left knee since five months. Initially, she developed an erythematous swelling of size 1 × 1 cm over the site; the swelling was insidious in onset and gradually progressive in nature. She subsequently developed intermittent, moderate grade fever associated with chills and rigors that subsided upon taking medication. The swelling grew to 15 × 12 cm size within 3 months, with tenderness, but no discharge. It also led to difficulty in flexion of the left knee joint. She underwent incision and drainage of the swelling at a private clinic. However, the swelling continued to progress and within one month of surgery, the swelling progressed to 15 × 10 cm size, filled with pus and associated with tenderness. Magnetic resonance imaging of the swelling showed it to be cellulitis and fine-needle aspiration cytology suggested an abscess. She again underwent incision and drainage. At the time of presentation to our centre, she had an annular plaque of size 15 × 12 cm having an erythematous to violaceous, raised, indurated and tender periphery and a centrally atrophied plaque extending from the lower third of thigh, involving the knee joint along with the popliteal fossa and downward up to the upper one-third of left leg [Figure 1]. The center of the plaque showed three hypertrophic scar marks of the previous incision and drainage [Figure 2]. Movements of left knee joint were restricted. She had no history of trauma, insect bite, no atopic diathesis such as seasonal rhinitis or atopic dermatitis, contact dermatitis, morning stiffness of the joint, Raynaud's phenomenon, thyroid disorder, vitiligo, or alopecia areata.

Past history was insignificant; there was no history of consanguinity and the patient was delivered as full term normal vaginal delivery. Her systemic examination was normal. She had leukocytosis with an erythrocyte sedimentation rate of 70 mm/h. Absolute eosinophilic counts along with serum IgE levels were within normal limits. Her thyroid profile showed raised

serum total T_3 level (225.5 ng/dl) along with raised free T_3 level (4.6 pg/ml). Her pediatrician consultation was done, but no active intervention was required. Her blood sugar, antinuclear antibodies, renal function and liver function tests were within normal limits. Rheumatoid arthritis factor and C-reactive protein were negative. Routine and microscopic examination of stool and urine were normal. Serology for human immunodeficiency virus (HIV) I and II by Combi-AIDS kit was negative. Ultrasonography of the affected leg showed subcutaneous soft tissue swelling around the knee joint. Skin biopsy confirmed a diagnosis of eosinophillic panniculitis showing infiltration of eosinophils in subcutaneous fat [Figure 3]. In our case, no definitive causative factor for panniculitis was found. Patient was given oral antibiotic for 1 week before 1 month of reporting to us. Patient responded well to the oral prednisolone 30 mg given once a day. It was tapered after every 15 days by 10 mg, which got completed after 6 weeks and also we had put her on tablet dapsone 50 mg daily for a period of 1 month. Orthopedic referral was made, and she was advised physiotherapy for the left knee to which she showed good response. She responded well to treatment [Figure 2]. The treatment was then stopped; the patient was advised monthly follow up for 6 months that was uneventful.

DISCUSSION

Eosinophilic panniculitis was first described by Burket and Burket in 1985. EP is seen more frequently in females than males (3:1) and mainly occurs in two age peaks - third decade and sixth decade and above.[2] It may be associated with a variety of conditions such as erythema nodosum, immune complex mediated vasculitis, atopic dermatitis, refractory anemia, chronic recurrent parotitis, leukocytoclastic vasculitis, drug reactions, eosinophilic cellulitis, insect bites, toxocariasis, gnathostomiasis, fasciola infection, HIV, specific immunotherapy with aqueous lyophilized bee venom, injection site reactions, trauma, and in patients with lymphoma. In some rare cases, no obvious underlying condition can be detected.[2]

It is believed that immunodeficiency due to hematologic disease, or a trigger such as insect bite, drug intake, or viral infection induces cytokine production with an excess of interleukin-4 (IL-4) and IL-5, causing an altered immune response.[3] Histopathologically, lobules, and septa are intensely infiltrated with eosinophils and may also be associated with other inflammatory cells.

A few cases of eosinophilic panniculitis have been reported in the literature. Some were associated with Kimura's disease,[4] hypersensitivity to calcium, heparin,[5] HIV with Kaposi's sarcoma-like plaques,[3] chronic lymphocytic leukemia and[6] cutaneous gnathostomiasis.[7] To the best of our knowledge, this is the only report of EP in a pediatric patient with an idiopathic origin.

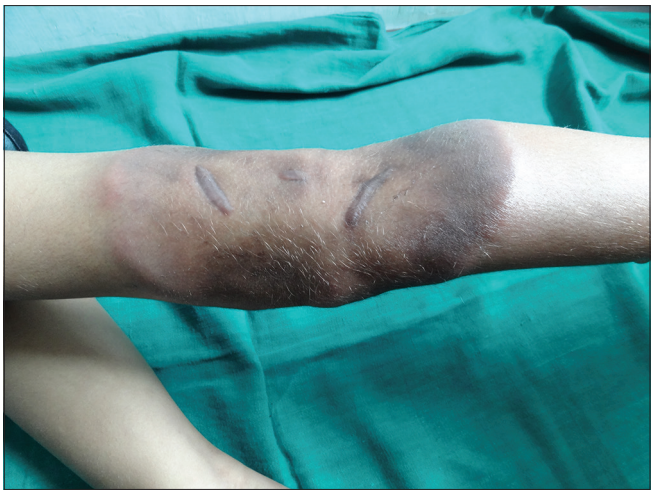

Figure 1: Annular plaque with erythematous to violaceous, raised, indurated periphery and centrally atrophied plaque over the left lower limb involving the entire knee joint and posterior aspect of the upper leg

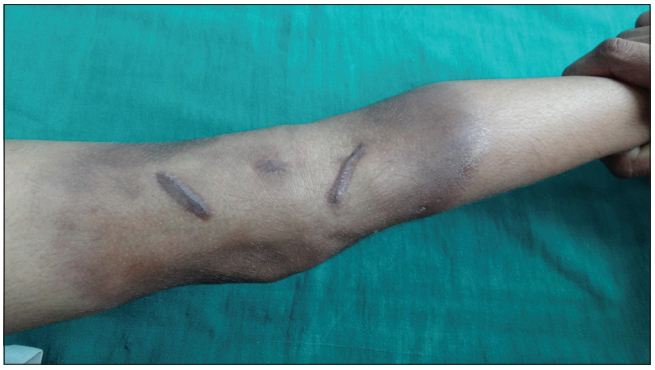

Figure 2: Post-treatment photograph showing flattening of plaque and reduction of erythema with center of the plaque showing three hypertrophic scar marks

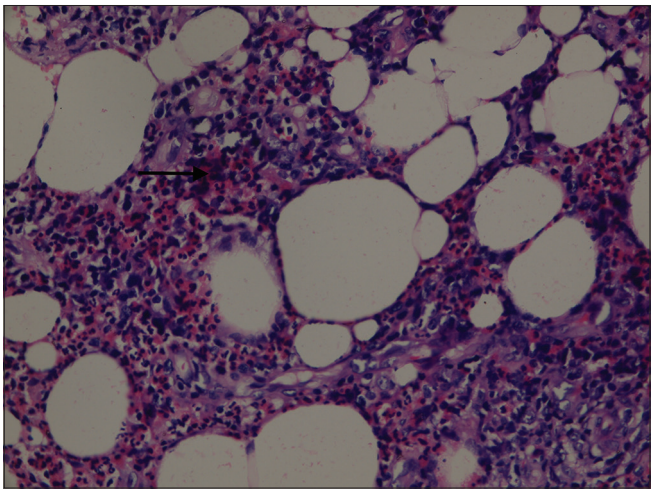

Figure 3: Photomicrograph showing infiltration of eosinophils in septa and lobules of subcutaneous fat shown with the help of arrow (H and E, ×400)

Treatment for this disease is difficult and recurrences are also common. In most cases, it is a self-limiting disorder and has been shown to respond to prednisone[3] as well as to dapsone.[8]

We report this case as we could not identify a causative factor in spite of exhaustive investigations.

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