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Case Report

Case of bullous pyoderma gangrenosum in a child

Nadia Ali Azfar, Ummara Rafique, Rafia Hafeez, Tariq Rashid

Department of Dermatology Unit I, Allama Iqbal Medical College/ Jinnah Hospital, Lahore

Abstract Bullous pyoderma gangrenosum is an atypical variety of pyoderma gangrenosum characterized by rapidly evolving vesicles or bullae that later rupture to form ulcers, commonly associated with underlying hematological malignancy. Various therapeutic options are available, including corticosteroids and other immunosuppressive agents. We present an eight-year-old boy having recalcitrant bullous pyoderma gangrenosum treated successfully with thalidomide.

Key words
Bullous pyoderma gangrenosum, corticosteroids, Thalidomide.

Introduction

Bullous pyoderma gangrenosum (PG) was first described by Perry and Winklemann in 1972.[1] Incidence of PG worldwide is between 3 and 10 per million per year out of which bullous variety occurs in 6.25% of patients.[2,3] Only 4% of all cases of PG have been reported in children less than 15 year-old[4] while no case of bullous variety has been reported in a child so far.

Bullous PG is an atypical variety characterized by superficial blisters secondary to superficial necrosis. It commonly affects the face and arms and is often associated with an underlying disorder especially hematological malignancy such as leukemia.[1,12]

First line treatment is immunosuppressive therapy with corticosteroids and cyclosporine.[4] Alternative therapies include dapsone, sulfapyridine, methotrexate, clofazimine, minocycline, colchicine, intravenous immunoglobulins and anti-TNF-a agents.[5] Cyclophosphamide, chlorambucil, intravenous tacrolimus, mycophenolate mofetil and thalidomide have also been found to be effective in a limited number of patients refractory to other therapies.[5-8]

We report a case of an 8 years old boy with bullous pyoderma gangrenosum treated on legs without any underlying hematological disorder, successfully with thalidomide.

Case report

An 8 years old boy presented with multiple, large, painful nonhealing ulcers over trunk, both legs and gluteal region. The patient was alright 5 months back when he developed vesicular lesions over the right gluteal region and right thigh that enlarged to form bullae and later ruptured leaving behind large ulcerations that were painful restricting his mobility. His biopsy was done which showed enlarged blood vessels in upper dermis with dense mixed infiltrate in upper dermis and subcutaneous tissue with perivascular infiltrates. He was diagnosed as a case of bullous pyoderma gangrenosum and put on corticosteroids. Investigations did not show any underlying hematological malignancy or any other association and it was labeled as idiopathic bullous PG.

Address for correspondence
Dr. Nadia Ali Azfar, Associate Professor
Department of Dermatology Unit I,
Allama Iqbal Medical College/ Jinnah Hospital,
Lahore
Email: nadiaazfar@live.com

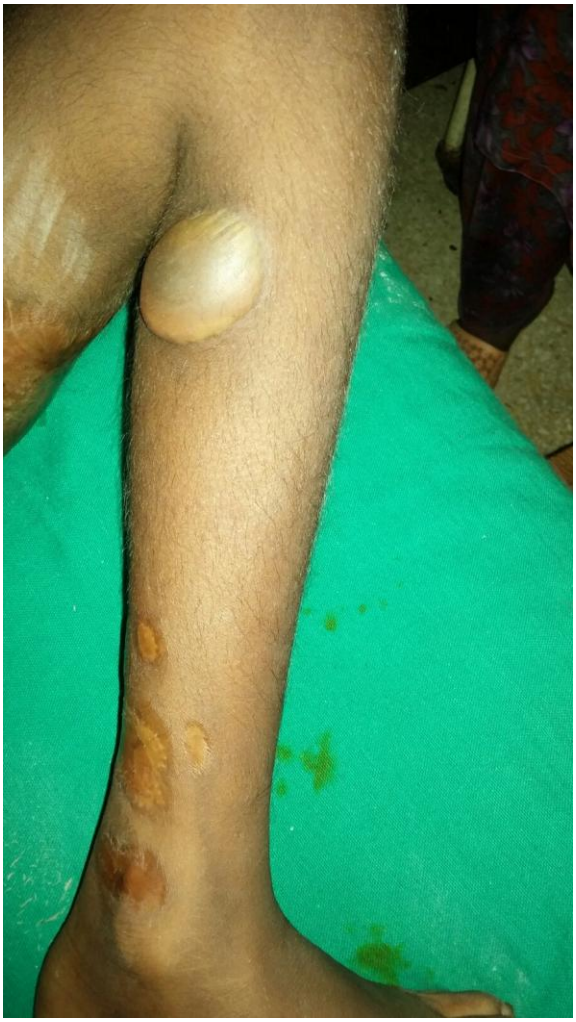

Figure 1 Large blisters with clear on left leg aling healed atrophic scars.

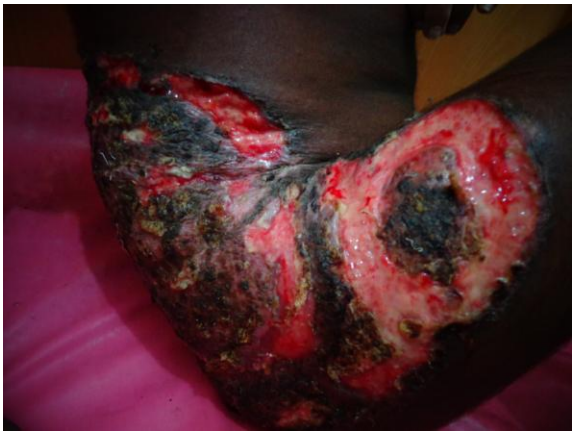

Figure 2 large ulcerated plaque on right gluteal region extending upto right thigh.

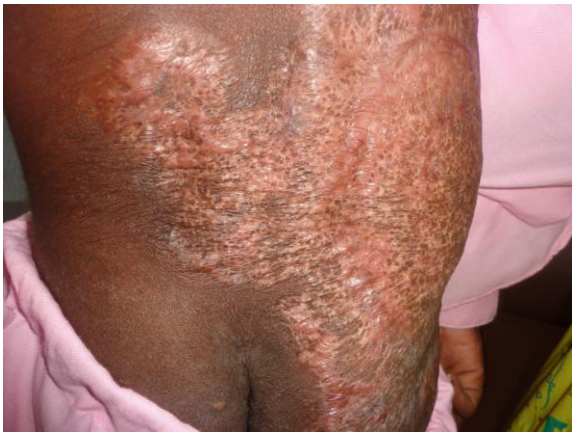

Figure 3 Healed lesion over the lower back and right gluteal region after 3 months of treatment.

Despite therapy with oral corticosteroids (prednisolone 10mg twice daily), his lesions worsened with purulent discharge from his previous ulcers and new blisters erupted leading to extremely painful ulcerations on both legs (**Figure 1**), gluteal region (**Figure 2**) and trunk, restricting his mobility.

Lesions were again biopsied and findings were consistent with the diagnosis of PG. He was started on oral prednisolone 20mg daily and dapsone 25mg daily later decreased to 25mg/day and then withheld after 2 weeks due to anemia. He was also given oral cyclosporin 25mg TDS and minocycline 100mg daily but without any significant response.

The patient was then started on oral thalidomide 100mg daily for three months and there was marked improvement in the lesions, the pain settled and the size reduced markedly (**Figure 3**). Patient did not report any serious side effects other than mild sedations

Discussion

Bullous PG is an atypical variety which is characterized by presence of superficial bullae that rupture to form ulcers with necrosis. This variety is reported in elderly patients with underlying hematological malignancies and is

never reported in children. PG in children may precede, develop concurrently with, or follow various conditions like ulcerative colitis. Other conditions associated with pediatric PG include leukemia, IgA monoclonal gammopathy, Crohn's disease, rheumatoid arthritis, Takayasu disease and various immunodeficiency states including HIV, chronic granulomatous disease, and hyper IgE syndrome. In one out of four children with PG, no underlying disorder is identified.[13]

The underlying pathology in PG is thought to be defective immune mechanism. Both humoral and cell-mediated abnormalities have been associated with pyoderma gangrenosum. Humoral defects reported include autoantibodies against skin, helper T suppressor cell imbalance, impaired phagocytosis, and deranged monocyte function.[9]

Treatment options include corticosteroids and ciclosporin as first line agents. In resistant cases cytotoxic agents such as azathioprine, cyclophosphamide and chlorambucil are used in combination with steroids. Corticosteroids in combination with steroid-sparing agents e.g. dapsone, or clofazimine, minocycline and thalidomide, have been used. Topical treatment with specialized dressings and skin grafting has been done.[5]

In our patient with treatment refractory bullous PG we started thalidomide in a dose of 100mg per day with dramatic effects in combination with corticosteroids.

Thalidomide shows immunomodulatory activity through suppression of tumour necrosis factor-alpha, basic fibroblast growth factor and neutrophil chemotaxis.[10] A study was carried out by Elgart, that included four patients with pyoderma gangrenosum unresponsive to treatment with prednisone, cyclosporin, colchicine, cytoxan, and dapsone. In an open, non-blinded study, all four were treated with thalidomide, with doses up to 200 mg per day. Two of the four patients cleared completely, on doses of 100 mg per day, and remained clear for a 1-year follow up after thalidomide was discontinued.

A case is also reported in mayo clinic in 2000 of a 47-year-old man with biopsy proven pyoderma gangrenosum that did not respond to treatment with several courses of methylprednisolone. He was started on oral thalidomide and the ulcer healed within 10 weeks of treatment.[7]

Seven more cases have been reported in the medical literature. Two of these patients had coincidental Behcet syndrome, and 2 patients had significant mucosal involvement (penile and pharyngeal). In all these patients the lesion was resistant to treatment with corticosteroid. Dosages of thalidomide ranged from 100 to 400 mg/d. most of the patients responded well within several weeks of the initiation of therapy.[7]

There is also a case of a patient who simultaneously had myelodysplastic syndrome, PG and tuberculosis infection. He was started on thalidomide 50mg/d and later increased to 100mg/d and showed excellent response after one month of treatment.[11]

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