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# "Pyoderma gangrenosum in a pregnant woman"

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**ABSTRACT**

Pyoderma gangrenosum (PG) is a rare non-infectious neutrophilic chronic ulcerative skin condition of unknown aetiology. PG is usually associated with an underlying disease, most commonly inflammatory bowel disease, rheumatic or haematological disease and malignancy. Although the incidence of PG is more with women than men, its association with pregnancy is a rare presentation. A 42 year old woman with 5 months pregnancy was referred to our clinic with rapidly progressive ulceration on the right thigh. She gave history of initial painful pustular lesion on the right thigh. There is no history of any such lesions in her previous pregnancies. There was no history of any associated systemic disease. The patient was successfully managed with oral steroids and cyclosporine.

**KEYWORDS** pyoderma gangrenosum, pregnancy, cyclosporine, pathergy phenomenon

**Introduction**

*Pyoderma gangrenosum* (PG) is a rare non-infectious neutrophilic chronic ulcerative cutaneous disorder of unknown aetiology, clinically characterised by initial sterile pustules that rapidly progresses to typical ulcers with undermined borders with violaceous hue.[1,2] Approximately 50% of the PG patients have an associated underlying systemic diseases, most commonly inflammatory bowel disease, rheumatic or haematological disorders & malignancy; while in another 40-50% it can also occur in isolation without any underlying disease & can be a diagnostic dilemma.[3]

Diagnosis is based on typical clinical presentation, history of underlying disease & exclusion of other causes of skin ulcers, as the histopathology does not carry pathognomonic information. There is no available documented laboratory parameter for diagnosis of PG.[1]

There is increasing evidence in recent time that the alterations in immune system during pregnancy may predispose to PG in certain patients. Cases of PG associated with pregnancy rarely have been reported from this part of the world. We present here a case of PG in a woman in her 5th month of gestation.

**The Case Report**

A 42 year old woman with 5 months pregnancy was referred to our clinic with rapidly progressive ulceration on the right thigh. She gave history of initial painful pustular lesion on the right thigh for which she was admitted in a hospital and was administered IV antibiotics and topical steroid with neomycin preparation without any improvement, rather the lesions rapidly progressed in size and extension with ulceration. Examination showed the induarated erythematous plaque 10 x 7 inches with well defined violaceous borders with surrounding erythema extending from medial to lateral part of the thigh. Overlying the plaque there was ulcerated area of 4 x 5 inches size. No mucosal involvement. There was no history of other associated systemic disorders like inflammatory bowel disorder, rheumatic & haematological disorders & malignancy. Complete blood count and blood biochemistry were within normal limits. Previous pregnancy was uneventful. Clinical diagnosis of *pyoderma gangrenosum* was made and was started on oral deflazacort 30 mg once daily (OD) and cyclosporine 200 mg. She was also given twice a week sessions of iclear ir light. Daily dressings with saline, Betadine lotion and metronidazole were advised. The pain and ulcer reduced within a month and the medicines were gradually tapered. The ulcer healed with cribiform scarring. She delivered a normal healthy baby and is still on a regular follow up.

**Discussion**

PG is a rare, chronic and often recurrent dermatosis. Its aetiology is uncertain, and is often associated with inflammatory bowel diseases (ulcerative colitis and Crohn's disease), malignancies, arthritis and haematological disorders. The disease is first described in 1916 by Brocq, and was later better characterised by Bursting in 1930, who named it PG because it was believed to be a streptococcal infection causing skin gangrene.[4,5] Currently, its pathogenesis remains mostly uncertain, it has been defined that PG is not directly caused by bacteria and is not, therefore, an infectious pathology. In this case, our diagnosis is based on absolutely positive findings of clinical examination.

PG usually occurs between 20 to 50 years of age and is more with women than men.[6,7] Although pregnancy-associated PG is rare, increasing number of case reports have been documented in the literature in recent time. Gestational age appears to play a role in the development of PG and it occurs most commonly the second or third trimester or post-partum.[8,9] Our patient was also 42 years old pregnant lady in her second trimester of pregnancy. There is also reported evidence that PG can occur in successive pregnancies, but in our case there was no such history in our patient.

Given the rarity of PG with limited number of documented cases of pregnancy-associated PG in literature, it is unclear to what extent pregnancy might increase risk. The Pathergy phenomenon or altered neutrophil function has been found to be an important aetiological factor for PG in pregnancy, without any underlying systemic disease. This is explained as potential aetiology of the neutrophil-predomimnat, inflammatory response of PG occurring after individuals have experienced trauma to skin during pregnancy.

There is a fine balance between balance between cell-mediated immunity [T helper 1 cell (Th1) dominated] and humoral immunity (Th2 dominated) during early part of the pregnancy.[10] The process of inflammation is desirable towards the end of gestation for parturition. This is achieved by progressive

shifting of predominant Th2 cytokines to Th1 cytokines at the end of the gestation. This may be further enhanced by parainflammatory conditions, tissue damage, changes to the microbiome and other activators of the immune system. By the end of the 30th week of pregnancy there are a 2.5 fold and 2 fold increases of neutrophils and monocytes respectively causing a sustained inflammatory response to a otherwise sterile site of injury. This also explains the higher incidence of PG in the caesarean section wounds.

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