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Pyoderma Chronica Vegetans Treated with Mesh Skin Grafting

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SUMMARY Pyoderma chronica vegetans is a rare condition clinically characterized by large verrucous plaques with elevated borders and multiple pustules. Although the etiology is unknown, it is generally believed that vegetating reaction is due to an immune system dysfunction or immunosuppressive state. We report on a 72-year-old man with pyoderma chronica of the buttocks. The lesion on the left buttock worsened two years before with gradual onset of fistulas, scarring and verrucous plaques. Laboratory test revealed medium high erythrocyte sedimentation rate, anemia, shift to left in differential white blood cell count, and polyclonal hyperglobulinemia. Streptococcus species and *Escherichia coli* were detected in tissue samples. T-cell functional tests for mitogens were decreased. Flow cytometry analysis of phagocytic capability of monocytes and granulocytes by was normal. Inflammatory bowel diseases were excluded with clinical and radiological examination. Anti-HIV test was negative. Histology revealed hyperplasia and irregular acanthosis of the epidermis, sinus and abscess formation, fibrosis and diffuse infiltration of inflammatory cells such as plasma cells, lymphocytes, histiocytes, eosinophils and neutrophils. Surgery was chosen as a therapeutic option as conservative treatment proved ineffective. Therefore, complete excision of the lesion was performed and skin grafting was required to close the defect because of extensity of the lesions. The skin-graft donor site was normal skin. Good postoperative result was achieved, without recurrence of the pyodermatic process.

KEY WORDS: pyoderma chronica vegetans, mesh skin grafting

INTRODUCTION

Pyoderma chronica vegetans is a rare condition clinically characterized by large verrucous plaques with elevated borders and multiple pustules. The etiology is unknown; it is generally believed that vegetating reaction is due to an immune system dysfunction or immunosuppressive state.

CASE REPORT

A 72-year-old man presented with pyoderma chronica of the buttocks. He had been suffering from furunculosis on the buttocks that had first appeared 15 years before. The treatment was conservative. The lesion on the left buttock (Fig. 1) worsened two years

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before, with gradual onset of fistulas, scarring and verrucous plaques measuring 20x24 cm when pyoderma chronica vegetans was established.

Laboratory tests revealed medium high erythrocyte sedimentation rate, anemia, shift to left in differential white blood cell count, and polyclonal hyperglobulinemia. *Streptococcus* species and *Escherichia (E.) coli* were detected in tissue samples. T-cell functional tests for mitogens were decreased. Flow cytometry analysis of phagocytic capability of monocytes and granulocytes was normal. Inflammatory bowel diseases were excluded with clinical and radiological examination. Anti-HIV test was negative.

Figure 1. Fistulas, scarring and verrucous plaques on the left buttock.

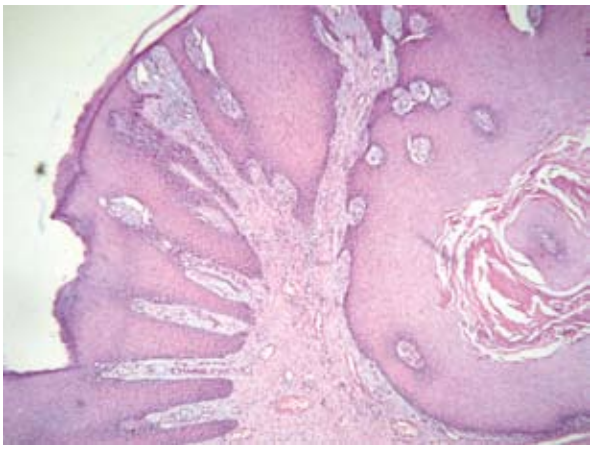

Figure 2. Hyperplasia and irregular acanthosis of the epidermis (H&E original magnification X40).

Histology revealed hyperplasia and irregular acanthosis of the epidermis (Fig. 2), sinus and abscess formation, fibrosis and diffuse infiltration of inflammatory cells such as plasma cells, lymphocytes, histiocytes, eosinophils and neutrophils (Fig. 3).

In the beginning, antibiotics according to microbial sensitivity report (amoxicillin/clavulanic acid 1 g twice *per* day for 15 days; cephalexin 500 mg twice *per* day for 10 days; penicillin 2.4 million units IM for 10 days), topical antiseptics (potassium permanganate as diluted solution; 3% hydrogen peroxide;10% povidone-iodine solution) and topical corticosteroids and antibiotics (gentamicin, hydrocortisone/oxytetracycline) were administered. Finally, complete excision of the lesion was performed. Because of extensity of the lesions, mesh skin graft harvested from legs, unaffected by disease, was used to close the defect. Moisturizing creams and ointments containing pantothenic acid were additionally administered. Good postoperative result was achieved, without recurrence of the pyodermatic process (Fig. 4).

DISCUSSION

Pyoderma chronica vegetans is a rare inflammatory disorder of the skin (1). Clinically, it is characterized by large verrucous plaques with elevated borders, multiple and confluent pustules. The etiology remains unknown. It is generally believed that vegetating reaction is due to an immune system dysfunction or immunosuppressive state that predisposes patients to bacterial infections that often remain identified. These immunosuppressive disorders are ulcerative colitis, leukemia, diffuse T-cell lymphoma, alcoholism,

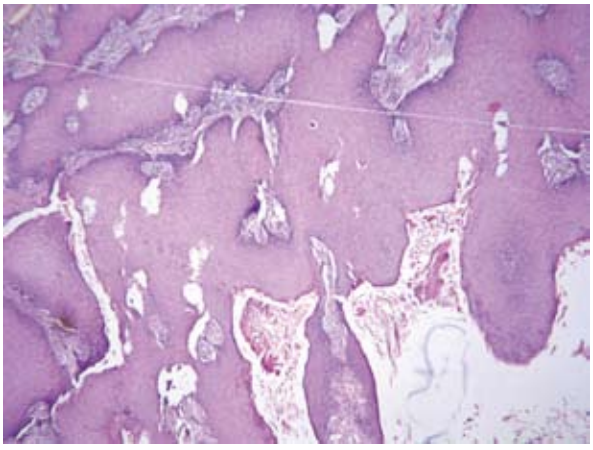

Figure 3. Sinus and abscess formation, fibrosis and diffuse infiltration of inflammatory cells such as plasma cells, lymphocytes, histiocytes, eosinophils and neutrophils (H&E original magnification X100).

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Figure 4. Mesh skin graft with postoperative result after three years.

malnutrition and HIV infection (1-5). In our patient, there was polyclonal hyperglobulinemia, decreased T-cell functional tests for mitogens, and *Streptococcus* species and *E. coli* identified in the tissue. Treatment with sensitive antibiotics to *Streptococcus* species and *E. coli* did not achieve desirable therapeutic results.

Although the treatment of pyoderma chronica vegetans has not been standardized, conventional therapy is topical wound care with antibiotics, corticosteroids, intralesional injections of corticosteroids, systemic antibiotics, laser ablations, curettage or laser debridement, and x-ray irradiation (1,4). Surgery is often chosen as additional treatment if conservative treatment proves ineffective and there are several possibilities. First, simple local flaps and primary closure are surgical possibilities if the primary lesion and the defects are small (6,7). Second, split-thickness skin grafting or mesh skin grafting is used when the graft is harvested from the skin using dermatome, then expanded using a mesh-grafting device and finally transplanted to the excised area (7). Donor site can be an area of normal skin and it is called conventional mesh skin grafting (6,7). However, according to Yamada *et al*., mesh skin graft can be obtained from the lesion, as in some pyoderma vegetans the epidermis and upper dermis are not involved until after extensive destruction of the subcutis, and sinus and abscess formation in the middle and lower parts of the dermis (6). In such cases, donor area of the normal skin can be eliminated or minimized additionally reducing postoperative donor-site pain and scars (6). This could not be done in our case as the inflammatory process involved the epidermis with fistulas and pus. Additionally, Matsushita *et al*. report on the modified reused skin graft technique with the use of power-driven dermatome when affected epidermis might not be involved in the graft because of dispersion of pressure onto the fistulas (7).

CONCLUSION

Conservative treatment of pyoderma chronica vegetans often proves ineffective. Therefore, depending on the primary lesion, different types of skin grafting can be used. Mesh skin graft harvested for normal skin of the extensive pyoderma chronica vegetans is presented. In this case, the mesh-skin graft harvested from healthy skin was used with good postoperative result and without recurrence of the pyodermatic process after three years.

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