

# DIAGNOSIS AND TREATMENT OF PYODERMA GANGRENOZA ULCERATIONS

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## INTRODUCTION

Pyoderma gangrenosum is a disease with distinct ulcers that can be difficult to diagnose and treat. Pyoderma gangrenosa gets its name from the appearance of the wound associated with it. The lesion often starts out as a very tender papulopustule, which progresses to a full-thickness wound. The typical wound looks very necrotic in the center. The wound edge will have a dusky erythema that will persist until the wound is healed. Often the border of the wound will be raised and undermined (Figure 1).



Figure 1. Pyoderma gangrenosum ulcer. Note the necrotic center and raised erythematous border.

Pyoderma gangrenosa wounds can be difficult to treat even if diagnosed early and correctly. However they are often first seen by primary medical providers who may see the wound before it has its classic necrotic appearance. They often will treat the wound as a typical ulceration with subsequent worsening, leading to frustration by both the clinician and patient. The keys to successful resolution of the wounds are early diagnosis and correct treatment.

## ETIOLOGY AND DIAGNOSIS

The etiology of pyoderma gangrenosa is not known. Frequently, patients with pyoderma gangrenosa may have associated diseases such as Crohn's disease, ulcerative

colitis, diverticulitis, arthritis, paraproteinemia, myeloma, leukemia, hepatitis, or Beçhet's syndrome. The link between these diseases and pyoderma gangrenosa is not known. However, ~50% of the time the patient may not have an associated disease at the time of the pyoderma gangrenosa outbreak.

The diagnosis of pyoderma gangrenosa is largely by exclusion. No specific tests exist to give a definitive diagnosis. Histology may show an abundance of mononuclear cells in the tissue. Biopsy will not prove pyoderma gangrenosa, but will help to rule out other pathologies that may have a similar wound appearance.

The diagnosis process starts with the patient history. Because the wounds may be present for an extended period of time, the patient may have a tendency to link a great deal of recent events in their life to the wound, making it difficult to determine by history alone if the etiology is trauma, an insect bite, venous stasis, pressure, or pyoderma gangrenosa. Previous treatments should also be determined since pyoderma gangrenosa tends to worsen under the stress of debridement. Also if the wound dries out, the dressing changes may also cause the wound to enlarge. Past medical history should be carefully reviewed since there is such a strong link between the diseases mentioned above and pyoderma gangrenosa.

Due to the usual appearance of the wound, it is important to obtain a wound culture and to make sure the patient does not have a true gangrenous wound that may need immediate surgical attention.

In some instances the wound may not appear as a typical pyoderma gangrenosa but even mild debridements and wet to dry dressing changes, which can cause trauma to the wound, may cause the wound to rapidly enlarge, and in this case may also be pyoderma gangrenosa.

## TREATMENT

Treatment starts with the initial visit and examination. A wound culture should be obtained, and an initial debridement should be performed to fully visualize the extent of the wound. If the wound looks suspicious for pyoderma gangrenosa, a biopsy sample could be obtained at this time

but the author recommends less invasive methods of diagnosis and treatment initially.

Prior to initial debridement, the wound should be measured and a topical anesthetic should be applied due to the painful nature of the wound. Because the initial appearance of the wound is very necrotic, a topical and oral antibiotic can be started while awaiting the results of the cultures.

As with any wound treatment the wound should be kept dry from the shower or bath to prevent bacterial spread to the wound especially by enteric bacteria. To keep the wound hydrated, start with a topical antibiotic cream and later on change to wound gel.

Most of the time the wound will grow out bacteria that have colonized the wound and not necessarily infected it. A short course of topical and oral antibiotics will usually take care of the bacteria in the wound.

Radiographic studies are advised if the wound is near bone or if bone pathology is suspected. In the author's experience, most pyoderma gangrenosa wounds are usually superficial enough that bone infections are rare unless the wound becomes secondarily infected and spreads.

Once the initial treatment is started, this is a good time to perform a biopsy. If the patient is diagnosed with one of the classic associated diseases it is a good idea to communicate with the patient's physician to coordinate systemic treatment such as oral steroids. Generally large doses of steroids are needed and the patient will need close observation during this treatment.

The wound should be inspected weekly to be sure the wound treatments are not making the wound larger. Once the wound has started healing, the period of time between visits can be extended.

The main priority of treating the wound is to avoid trauma. Once pyoderma gangrenosa is suspected debridements should be discontinued. The dressing changes need

to be done often enough so that the wound does not dry out. If this drying occurs the wound will essentially be debrided because of the pull of the dressing on the tissue and this will traumatize the wound leading to rapid enlargement. Pressure may also cause trauma to the wound so it is important to off load the wound. Sometimes the wound may be getting pressure from the way the patient sleeps or sits. The leg rest of a wheel chair or the foot rest of a recliner may also be causing unwanted pressure.

On occasion if the wound is progressing very slowly the author has used Regranex or Oasis with great success and found them to assist with the healing without having to debride the wound to stimulate growth factor exposure or get the benefit of wound coverage from a biologic membrane.

Management of edema is also critical to the wound treatment. Often the diseases associated with pyoderma gangrenosa are inflammatory in nature and can lead to lower extremity edema. The edema can be well controlled with a multilayer compression dressing, which decreases the edema and also prevents too much pressure on the wound.

It can take months to heal even a small pyoderma gangrenosa ulcer. Even slight improvement is a good sign that the wound is healing.

## CONCLUSION

Pyoderma gangrenosa is a disease that can cause very painful ulcers. Diagnosis is often difficult and can only be done by exclusion of other causes. The treatment is often tedious and can quickly worsen the wound if done incorrectly. The disease often requires the coordination of the patient's internist with the wound physician if treatment with oral steroids is initiated. The progress of healing can be slow, but if the wound is treated correctly it will heal.