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PHOTOLETTER TO THE EDITOR

Botryomycosis in an immunocompetent woman

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Abstract

Botryomycosis is a chronic, granulomatous infection of the skin, soft tissue and viscera. It is uncommon and mainly occurs in immunocompromised patients. Splendore-Hoeppli phenomenon represents an immunological host reaction to antigens of infectious and non-infectious agents.

We report a case of a 64-year-old immunocompetent woman presented at our department with a 2-month history of abdominal papules and discharging nodules. She was treated with several antibiotics with no success. Skin biopsy showed granular bodies in the dermis with a Splendore-Hoeppli phenomenon. Microbiologic study isolated a *Staphylococcus aureus*. Patient was successfully treated 4 weeks with oral clindamycin 300 mg bid.

Lack of drug penetration into the "encapsulated-like" microcolonies could explain the therapeutic challenge of this case. (*J Dermatol Case Rep.* 2013; 7(1): 29-30)

Key words:

botryomycosis, actninophytosis, Splendore-Hoeppli phenomenon

A 64-year-old woman presented at our department with a 2-month history of inflammatory papules and nodules mainly localized to the abdomen (Fig. 1). Some of these nodules showed a discharge of purulent fluid. She denied previous traumas or insect bites. Medical past history was irrelevant. HIV and HCV were negative. Patient was previously unsuccessfully treated by her assistant physician with flucloxacillin and cephradine (duration and dosages unknown). Findings from routine blood testing, including leukocytes, neutrophil count and C-reactive protein, were normal. A punch biopsy specimen from a nodule was submitted for histopathologic evaluation and another one was submitted

Figure 1

Abdominal pus discharging papules and nodules.



to microbiologic examination. Skin biopsy specimen showed multiple granular bodies in the deep dermis. These granular bodies were formed by a basophilic bacterial center (Gram positive) with a homogeneous eosinophilic halo known as, Splendore-Hoeppli phenomenon (Fig. 2). PAS and Grocott staining were negative. Microbiologic study of the skin specimen isolated a *Staphylococcus aureus* sensitive to penicillin. As the patient previously used flucloxacillin and cephradine with no success, we effectively treated her with oral clindamycin 300 mg bid for four weeks.

The term botryomycosis was proposed in 1884 by Rivolta¹ and it is a combination of two Greek words: *botrys*, meaning "bunch of grapes" (due to the microscopic appearance of the granular bodies); and mycosis because of the past supposed fungal origin of the disease. It is also known as actinophytosis, bacterial pseudomycosis or granular bacteriosis.²

Botryomycosis is a chronic, granulomatous opportunistic infection of the skin, soft tissue and viscera. It is relatively uncommon and occurs more often among immunocompromised patients. There are two forms of the disease: cutaneous or integumentary (including muscle and bone) and visceral. Visceral botryomycosis occurs most commonly in the lung, although involvement of other organs including brain, kidney, spleen and liver has also been described. Pathogenesis is not well understood, but it probably reflects an imbalance between the numbers of microorganisms inoculated, the virulence of organisms and predisposing factors (such as trauma, diabetes, liver disorders and alcoholism). The most common causative agent is Staphylococcus aureus although Pseudomonas aeruginosa, Escherichia coli, alpha hemolytic and non-hemolityc Streptococcus, Actinobacillus lignieresii, Moraxella non liquefasciens, Proteus vulgaris, Serratia marcescens, Propionibacterium acnes and other anaerobic organisms have all been reported.²⁻⁵ The diagnosis requires correlation of morphological (most often Gram + granules, not composed of organized branching filaments) and bacteriological findings.



Figure 2

A photomicrograph showing (A) (H&E x40), granular bodies in the deep dermis (B) (H&E x400), remarkable Splendore-Hoeppli phenomenon.

Splendore-Hoeppli phenomenon represents localized immunological host reaction to antigens of a variety of infectious and non-infectious agents. It is characterized by eosinophilic materials coating the causative agent. This morphologically unique reaction was first described in sporotrichosis by Splendore and in schistosomiasis by Hoeppli.

In our patient, even though the Staphylococcus aureus, which was isolated was sensitive to penicillin in vitro, it was probably unhelpful, because of lack of the drug penetration into the "encapsulated-like" microcolonies.

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