

Therapy Letters

Cutaneous botryomycosis treated successfully with injectable ceftriaxone sodium in an immunocompetent child

Sir,

Botryomycosis is a chronic granulomatous suppurative bacterial infection.^{1,2} It is a rare and uncommon disease, mostly reported in immunocompromised adults. Approximately 200 patients have been reported in English literature.³ Its occurrence in children is rare. We describe a case of cutaneous botryomycosis in an immunocompetent girl child treated successfully with injectable ceftriaxone sodium.

A 14-year-old girl presented to the dermatology outpatient department of All India Institute of Medical Sciences, Bhubaneswar with swellings on the right foot studded with papules and nodules on it for 3 years. She gave a history of trauma on the right foot. She had undergone incision and drainage of the swellings twice in the past with no significant improvement. Rather, she continued to develop papules and nodules on the swellings. Cutaneous examination revealed skin-colored lobulated swellings on the dorsum of the right foot with multiple skin-colored papules and nodules of varying stages with surface change like erosion, crusting and ulceration on papules and nodules and some giving serous and seropurulent discharge [Figure 1a]. Similar lesions were also present on the sole of the foot [Figure 1b]. Based on these

clinical findings, botryomycosis, eumycetoma, actinomycetoma and actinomycosis were kept in differentials and the patient was investigated.

Her routine investigations were within normal limit. Test for human immunodeficiency virus by enzyme-linked immunosorbent assay was negative. X-ray of the right foot did not show any bony abnormalities. Tissue culture and pus culture showed methicillin-sensitive *Staphylococcus aureus* sensitive to amikacin and ceftriaxone. KOH and fungal culture of the seropurulent discharge did not reveal any organism. Biopsy of the nodule showed bacterial granules in dermis with an eosinophilic rim at the periphery suggestive of Splendore–Hoepli phenomenon [Figure 2]. Based on clinical, microbiological and histopathological findings, the diagnosis of botryomycosis was made. Patient was initiated on injection ceftriaxone sodium 1,000 mg intravenous daily. After 2 and 1/2 months of treatment, the swelling subsided and nodules and papules disappeared completely [Figure 3]. The repeat complete hemogram, liver and renal function tests at the end of 2 months were normal. The patient had no side effects with ceftriaxone. Currently, the patient is under follow-up for 30 days with no recurrence.

The term botryomycosis was coined by Rivolta in 1884. The bacteria form granules deep in the tissue and resemble bunches



Figure 1a: Lobulated swellings on the dorsum of right foot studded with multiple skin-colored papules and nodules having erosion, crusting and ulceration on surface



Figure 1b: Plantar aspect of right foot having lobulated swelling studded with multiple papules and nodules

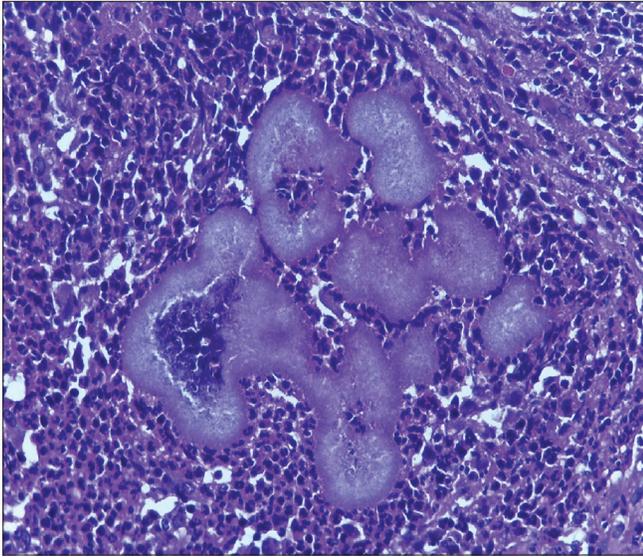


Figure 2a: Bacterial granules in dermis (H and E, ×400)

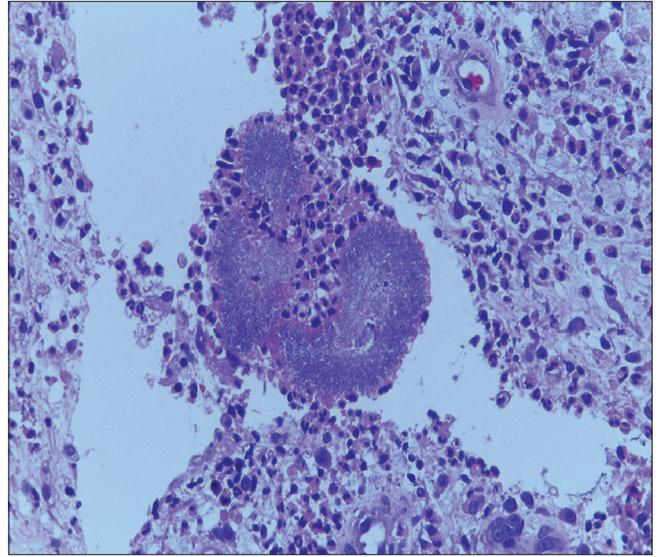


Figure 2b: Bacterial granules in dermis surrounded by eosinophilic rim suggesting Splendore–Hoeppli phenomenon (H and E, ×400)



Figure 3a: Complete clearance of lesions on dorsum of foot after treatment

of grapes (in Greek botrys), and mycosis; because it was thought to be fungal in origin. Later, in 1919, it was discovered to be of bacterial etiology.⁴ Botryomycosis can be cutaneous and



Figure 3b: Complete clearance of lesions on plantar aspect of foot after treatment

visceral. Cutaneous lesion account for 75% whereas rest is visceral form.⁵

Staphylococcus aureus is incriminated in 40% cases, followed by *Pseudomonas aeruginosa* 20%. Other organisms include coagulase-negative staphylococci, *Streptococcus spp.*, *Escherichia coli* and *Proteus spp.*³ The predisposing factors include altered immune function and comorbid conditions such as diabetes mellitus, liver disease, alcoholism, lupus, cystic fibrosis, asthma, malnutrition, immunoglobulin deficiency, hyperglobulinemia E (Job syndrome), glomerulonephritis, treatment with corticosteroids and human immunodeficiency virus/acquired immunodeficiency syndrome.^{6,7} The local factors such as accident and postoperative skin trauma are also incriminated.⁸

It is believed that grouping and clustering (grains) of organism is responsible for resistance named as Splendore–Hoeppli phenomenon.^{5,8,9} The Splendore–Hoeppli phenomenon represents presence of an antigen–antibody complex, tissue debris and fibrin that generate an eosinophilic matrix among bacterial granules in botryomycosis which prevents phagocytosis and intracellular destruction of the bacteria leading to chronic infection and thereby requires prolonged treatment. In our case, the patient had thorn prick injury at the site following which the lesions appeared. The reported patients were either adult or elderly patients and majority were immunosuppressed. Our case was a child and there are countable reports of botryomycosis in child. Treatment of botryomycosis is usually prolonged duration of antibiotic. Most often more than one antibiotic is used. However, appropriate antibiotics in combination with surgical excision is the most effective therapy for botryomycosis.³

Our case had botryomycosis involving the whole right foot with causative organism being MSSA. The lesions were completely cured with injectable ceftriaxone sodium as a monotherapy. We report the case for rarity in an immunocompetent child and complete cure with ceftriaxone monotherapy.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understands that her name and initial will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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