Erythema Nodosum

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Citation

G Hann. *Erythema Nodosum*. The Internet Journal of Advanced Nursing Practice. 2007 Volume 9 Number 2.

Abstract

Erythema Nodosum (EN) is a relatively uncommon disorder in the pediatric population, yet multiple pediatric diseases can lead to EN. The following paper delineates a case report of an adolescent female with EN. The common etiologies, clinical manifestations, and treatment strategies for EN are discussed. References are included in text and listed after the summary.

NAME THAT BUMP

As a Pediatric Nurse Practitioner student on my first dermatology rotation I saw many interesting cases. One such case was that of J.P., a 15 y.o. female who presented with complaints of painful red spots on her lower extremities. J.P. and mom recall that the weekend before this appointment J.P. developed red “sores” on her lower legs bilaterally. The spots were tender to touch and gradually grew larger and more firm. J.P. had spent the last two weeks of her summer break at the state fair showing her pet goat with her 4-H group. Mom shared that the family cat had been sick for “a long time” and was finally diagnosed as having sporotrichosis. Mom reported that she her self ended up contracting sporotrichosis, but that J.P. did not. The cat did sleep on J.P.'s bed at times while she was away. J.P. reported that as new spots developed on her legs, they started as a reddish-purple color while the older ones faded toward a brownish-yellow. They remain firm. Other than the sporotrichosis, no other family members had been sick. There was no fever associated with the development of the spots, no sore throat, or otherwise remarkable illness. J.P. was not taking any medications at the time of the office visit and with mom outside the room the patient denied being sexually active. Family medical history was significant only for hypertension in a maternal grandfather; cancers and cardiac problems were denied. J.P. had not implemented any treatment measures prior to office visit.

PHYSICAL EXAM

Obtaining a thorough patient history provides a focus for the practitioner when making the decision of what systems to include in the physical exam. As my patient had no major complaints beyond the nodules on her legs, the physical exam was focused to the musculoskeletal and integument systems. Pedal pulses were also assessed. J.P. denied any joint pain and had full range of motion in her lower extremities. Pedal pulses were equal bilaterally, 2+. J.P. had multiple nodular masses ranging in size from 1-6cm on the anterior aspects of her lower legs bilaterally. The masses varied in color as described above. J.P. acknowledged pain in the masses when palpated.

DIFFERENTIAL DIAGNOSIS

In this case the differential diagnoses included variants of the panniculitis spectrum: Erythema Nodosum (EN), Henoch-Scholein Purpura (HSP), Erythema Induratum, and Weber-Christian panniculitis. By history, sporotrichosis was also considered. The lesions associated with sporotrichosis tend to occur wherever there is a break in the skin and the Sporothrix schenckii fungus enters, commonly on the hands [1] . As they progress the lesions become nodular and ulcerate [2] . The lesions on this patient were located on her lower legs and did not ulcerate, though they were nodular. The lesions associated with HSP are not typically nodular, but rather appear as a petechial rash confined to the buttocks and lower extremities. Abdominal pain, joint and muscle pain, renal involvement also occur with HSP [3] . Weber-Christian panniculitis frequently occurs in young white females and is characterized by tender skin nodules associated with fever, joint, and muscle pain [4] . Erythema Induratum, also known as Bazin disease or generically nodular panniculitis, is a likely diagnosis in this patient. However, the nodular lesions of Erythema Induratum are typically located on the posterior aspects of the lower legs [4] . EN is the most frequent clinico-variant of the panniculides [5] . The lesions of EN range in size from 1 to 5 cm, are usually symmetrical, red, and located over the pre-tibial surfaces [6] . As they develop they become raised, indurated, subcutaneous plaques, with the overlying

skin taking a brownish-red or purplish-red hue [6]. Based on the clinical presentation of this patient, Erythema Nodosum was the preliminary diagnosis assigned to J.P. A 3mm punch biopsy was obtained during the office visit and sent for evaluation. The results revealed a septal inflammation of subcutaneous fat characteristic of EN.

ETIOLOGY AND MANAGEMENT OF EN

The cause of Erythema Nodosum can be bacterial, fungal, a reaction to certain medications, or it can be a symptom of a more systemic illness such as sarcoidosis or inflammatory bowel disease [7]. Despite a range of possible causes up to 50% of EN cases are idiopathic, hence a core battery of tests are appropriate. In addition to a thorough patient history as previously mentioned, the work up typically should include a throat culture, antistreptolysin O titre, CBC, chest x-ray, purified protein derivative (PPD) test, sedimentation rate, and Yersinia antibody titre [8]. In J.P.'s case, there was no significant history of sore throat and she denied having a sore throat at the office visit. She was at the state fair for a significant period of time so logically she was at an increased risk of exposure to infectious disease. J.P. was sent for a CBC, ASO titre, and a PPD.

Management of EN is based on alleviating the underlying cause [6]. The lesions themselves are self-limited. The inflammation and tenderness are best treated with NSAIDs. Limiting the amount of physical activity can also provide some pain relief. Although a bed rest and an activity reduction are enough in most cases, potassium iodide is also recommended as a first line treatment of EN. A suggested dose is 5 drops of supersaturated potassium iodide solution in orange juice TID. The dose may be increased by 1 drop per day until a clinical effectiveness is achieved [10]. Also, in cases of EN induced by the anti-acne medication, isotrentinoin (Accutane), dapsone (Avlosulfon) has been shown effective (Personal Communication, November 21, 2006). J.P. was instructed to utilize ibuprofen for pain relief and excused from gym class until further evaluation at her follow up appointment. EN usually resolves within 5 to 8 weeks [9]. At 3 weeks follow up the lesions on J.P.'s legs were almost completely resolved. Subsequently, although she denied any history of sore throat, her ASO titre returned as elevated and streptococcal infection was identified as the cause of the Erythema Nodosum. J.P.'s CBC and PPD were unremarkable. As she had progressed so well, J.P. was cleared to resume normal physical activity with follow up only as needed.

Figure 1

Table 1: Hallmarks of EN

- Painful erythematous nodules
- Nodules range in size from 1-6cm and evolve in a bruise like fashion
- Typically limited to anterior tibial surfaces bilaterally
- Fever, arthralgias, and malaise can accompany the nodules

SUMMARY

Erythema Nodosum is the most common variant of the panniculides. The disease itself is normally easy to diagnose given the hallmark symptoms (see table 1), but the etiology can be more elusive. Treatment for Erythema Nodosum is directed at the underlying cause so diagnostic testing is appropriate. The more common etiologies have been discussed. NSAID's and limiting activity decrease the pain associated with EN. With proper treatment of the underlying cause, EN should resolve within 6 to 8 weeks.

ACKNOWLEDGEMENT

This writer would like to acknowledge the collaborative input of Anita Prasad, FNP. Anita was extremely informative and encouraging to me as a Graduate student during my dermatology rotation.

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