Clinical Image

Nora's Lesion in a Child: A Case of Complete Spontaneous Regression

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We describe a complete spontaneous regression of Nora's lesion of the first metatarsal in a 3-year-old child affected by Hereditary Sensory and Autonomic Neuropathy Type IV (HSNA IV) with congenital insensitivity to pain and anhidrosis. The patient presented at our observation because of a non-tender mass in the dorsal region of the foot. No history of trauma was reported. The skin above the lesion was slightly warm without local bruising. Routine laboratory determinations were unremarkable, except for an elevated C-reactive protein (CRP) equal to 6,13 mg/dl (normal range, <0.5 mg/dl).
X-Rays and Magnetic Resonance of the foot revealed a calcified mass adjacent to the cortical surface of the first metatarsal (Figure 1a). Imaging findings were not specific and therefore a biopsy was performed with the intent to achieve an accurate histological diagnosis. Possible differential diagnoses included: bizarre parosteal osteochondromatous proliferation (otherwise known as Nora's lesion), periosteal chondroma, osteochondroma, osteomyelitis, myositis ossificans and parosteal osteosarcoma. Histological examination revealed a diagnosis of Nora's lesion (Fig. 2) while intraoperative microbiological examinations resulted negative for infection. Considering the very young age of the patient, the benign nature of the lesion and the high recurrent rates (until 55%) reported in literature [1,], we decided to undertake a "Wait and see" protocol. The surgical treatment would have been considered only in case of increase of the lesion's size. Althoug an evident source of infection was not found and the blood cultures were negative, an intravenous antibiotic therapy (Ceftriaxone, 50mg/kg/die) was started in order to avoid infection that represents one of the possible complications related to HSNA IV [2]. The therapy was continued for 7 days, achieving a normalization of the CPR value, that remained negative even at the follow up after 4 and 8 weeks the end of the antibiotic therapy. We evaluated the patient every 6 months, associating a clinical and a radiological assessment. Surprisingly, the X-rays performed during the follow-up showed a progressive remission of the lesion with the complete regression within 2 years (Figure 1).

With this report we present a pediatric case of a Nora's lesion that showed a progressive, spontaneous and complete regression. The choice of a "Wait and see" protocol, with clinical and radiological evaluation every 6 months has proven to be successful and a preventive antibiotic therapy avoided any infective complications. The surgical treatment remained an option, considered only in case of increase of the lesion's size, that did not occur. To the best of our knowledge, this is the first case reported in literature in which a Nora's lesion regresses spontaneously [3]. This peculiarity makes it original and may support the theory that the Nora's lesion may be a reactive process. On the other hand, recent studies reported some chromosomal anomalies associated to this entity, whose etiopathology remain not completely understood [4,5].

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Conflicts of interests: The Authors declare that they have no conflicts of interest.

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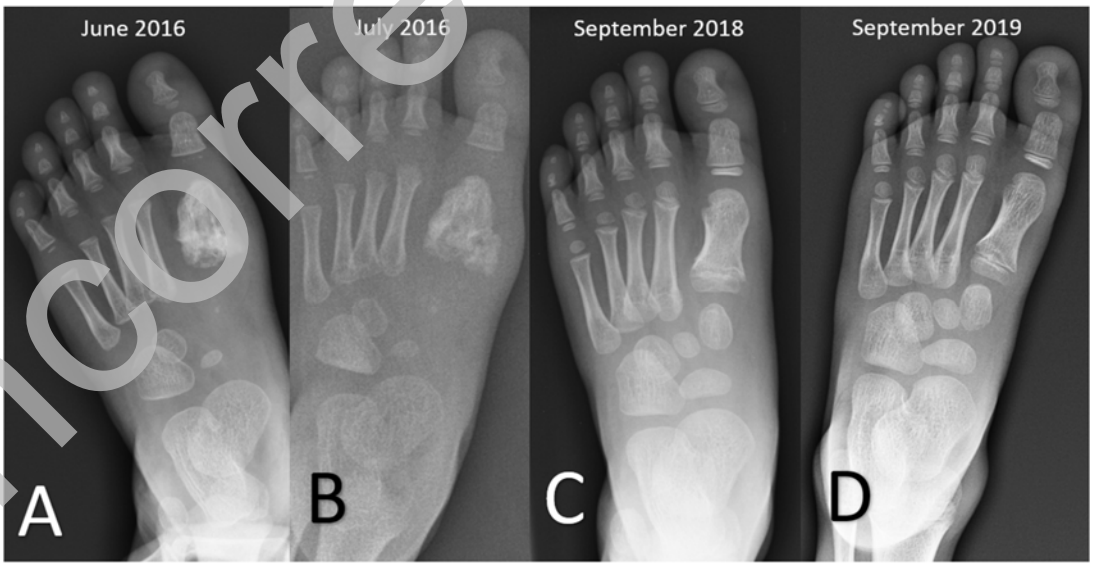

FIG.1. a) X-ray of the foot at our first observation: a calcified mass adjacent to the cortical surface of the first metatarsal is detected; **b)** X-ray of the foot performed 2 weeks after biopsy: a calcified and ossified

mass is still evident around the first metatarsal; **c)** After 2 years: the calcified mass is disappeared and first metatarsal assumes a more physiological morphology; **d)** After 3 years: no local recurrences of Nora's lesion are evident and the first metatarsal shows a completely normal structure.

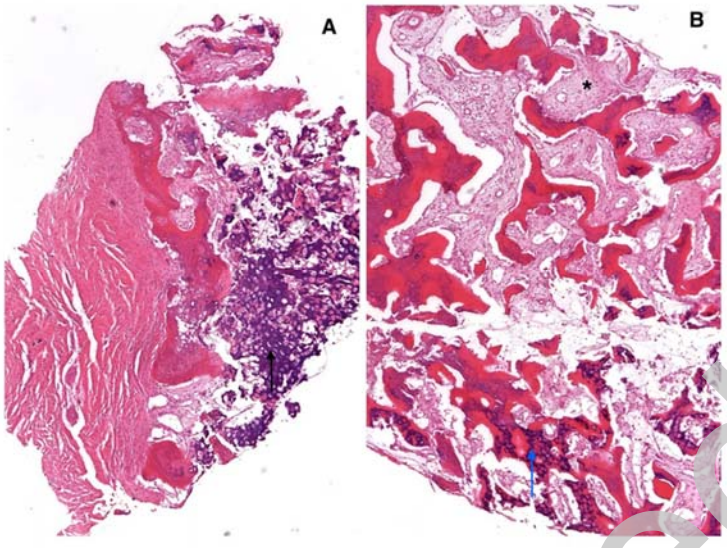

FIG. 2. Microscopic features of Bizarre parosteal osteochondromatous proliferation:
A) Cartilaginous cap with conspicuous areas of basophilic calcifications (black arrow, hematoxylin eosin staining, 25X).
B) Woven bone trabeculae characterized by the presence of so- called "Blue bone"(blue arrow) and loose, well vascularized and banal spindle cell stroma present between the bony trabeculae (asterisk, hematoxylin eosin staining, 50X).