Commentary on “A Case Report of Heel Pain Mimicking Plantar Fasciitis and Osteosarcoma: A Unique Presentation of a Nora’s Lesion”

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Commentary

Bizarre parosteal osteochondromatous proliferation (BPOP), otherwise known as “Nora’s Lesion” is a rare benign neoplasm first described by Nora in 1983 [1]. Since then, <200 cases have been reported with, most presentations affecting the metacarpals, metatarsals, and phalanges of adults in their 20’s and 30’s [2]. In reviewing the literature, numerous reports have highlighted the diagnostic challenge associated with the lesion's presentation owing to its variable growth rate, aggressive features on imaging, and histopathologic confusion. In the lower extremity, BPOP has predominately affected the forefoot distal to the tarsometatarsal joints and hence; a dearth of information exists regarding the lesion in the remainder of the foot. To the best of our knowledge, our report [3] is the first to document BPOP as an etiology for heel pain, presenting clinically and radiographically as plantar fasciitis and periosteal osteosarcoma. The diagnostic dilemma associated with the lesion's presentation was highlighted, as was the clinical acumen of one of our senior attending’s (D.E.R.). Now that our report has been published and presented, it is clear certain aspects merit further discussion.

Firstly, in the lower extremity BPOP has historically demonstrated a lack of tenderness clinically during palpation and at rest, often presenting as a painless enlarging mass [4]. This was not evidenced in our report, as the 48-year old otherwise healthy female presented with a history of severe heel pain originally misdiagnosed as plantar fasciitis by her primary care physician. Although plantar fasciitis remains the most common etiology for heel pain, a myriad of etiologies may be responsible, and may exist simultaneously [5]. During clinical examination of the patient, the characteristic pain during palpation of the medial calcaneal tuber, and dorsiflexion of the hallux (windlass test) was reproduced. These clinical stigmata are outlined in many diagnostic algorithms, and are often sufficient for the clinical diagnosis of plantar fasciitis alone. However, an important but subtle finding not appreciated prior was the increased localization of the pain slightly more central, and distal on examination than typically encountered with plantar fasciitis. A positive calcaneal squeeze test and the absence of post static dyskinesia further raised the clinical index of suspicion for another etiology, prompting advanced diagnostic imaging.

Secondly, although BPOP’s variable growth rate and propensity for aggressive features on imaging studies has been documented, typically the presentation in the lower extremity displays a slower growth rate with less aggressive features [4]. Again, this was not evidenced in our report; as serial radiographs (<1 month apart) revealed noticeably increased cortical thickening, and a periosteal reaction (Figures 1 and 2). Magnetic resonance imaging revealed ill-defined edema in the midportion of the calcaneus extending plantarly, with a 14 mm nodule in the soft tissue (Figure 3).
Lastly, the sudden resolution of the patient’s symptomatology following computed tomographic-guided bone biopsy of the lesion was unexpected, and no clear explanation exists. We theorized that perhaps the biopsy itself acted similar to an en bloc resection, relieving any local impingement on neurovascular structures. Alternatively, the neoplastic process may have been altered by the biopsy prompting the resolution of the symptomatology. Regardless, in the management of suspicious musculoskeletal tumors, interdisciplinary communication is essential, and biopsy the sine qua non for an accurate histopathologic diagnosis. Numerous authors have raised controversies regarding the diagnostic yields of various biopsy techniques; though current evidence supports the diagnostic accuracy of image guided core needle biopsy for benign and malignant osseous tumors [8-11].

The histopathologic diagnosis of BPOP in our report was made without definitive surgical excision, secondary to patient refusal. Despite refusing the recommendation for complete surgical excision, the patient remains asymptomatic at regular follow up intervals without any demonstrable growth on serial radiographs. To date no standardized screening protocol or follow up regimen exists owing to the rarity of the lesion.

In conclusion, BPOP remains a diagnostic and therapeutic challenge. The exact etiology remains unknown, and reports continue to document variable growth rates, aggressive features on imaging, and histopathological confusion. While rare, BPOP should be considered a differential diagnosis for plantar heel pain, especially after failed conservative treatment. Following diagnostic confirmation by histopathology, complete surgical excision is the treatment of choice. We sincerely appreciate the invitation to provide commentary on our report [3], and in the spirit of collegiality; encourage further thought and discussion.

References: