Rarely Encountered Polymetatarsia without Polydactyly a Case Study

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Statement of Purpose:

The purpose of this presentation is to describe a rarely seen anomaly in podiatric medicine—polymetatarsia without polydactyly.

Congenital polymetatarsia is rare, and even more uncommon in cases without polydactyly. Literature exploring the condition of polymetatarsia are few in number. There is value in describing the evaluation and treatment course to promote a standard in treatment of the condition when encountered for future clinicians. This poster will describe a specific pediatric case of polymetatarsia, its possible etiology, and the treatment course and outcome.

Literature Review:

Polymetatarsia is defined as a developmental anomaly characterized by one or more extra metatarsal bones [1]. Polymetatarsia without polydactyly occurs very rarely, and is seldom described in current medical literature. Only six cases of polymetatarsia without supernumerary digits including an extra well-defined hypoplastic metatarsal have been published [1-5].

The congenital etiology of the condition is believed to result from abnormal induction of digital rays at the apical ectodermal ridge in the early stages of development [6]. It has been hypothesized polydactyly digits occasionally resorb/fuse while some metatarsals remain separate and distinct [3].

The condition is encountered in patients young and old, depending on when and if the condition becomes symptomatic [1-5]. Likely most instances of polymetatarsia are not discovered [3]. Due to the rarity of the condition there is no current consensus on a classification system concerning polymetatarsia [1].

Case Study:

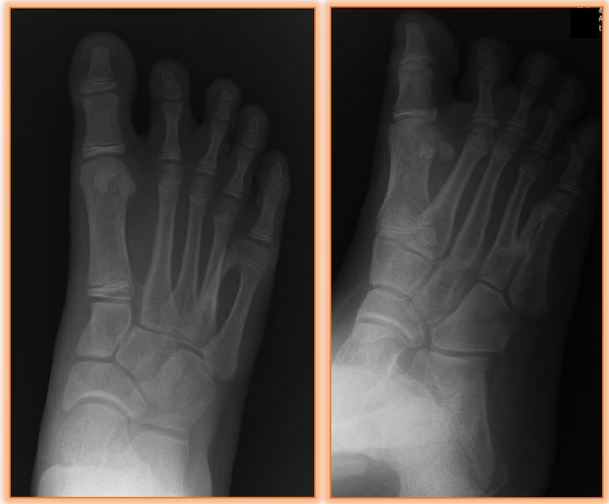
Ten year old male patient I.A. presents to clinic 08/27/2018.

Patient presents with chief complaint of right foot pain. The right foot pain is achy in nature, 4/10 on a pain-scale. The pain is greatest at the plantar 4th and 5th metatarsal base location. He has been experiencing the pain for months, without specific event of onset, and the pain has been worsening. Any activity involving weight bearing aggravates the pain to the right foot. Non-weight bearing and rest improve the painful symptoms. The family relates supportive shoes somewhat decrease the right foot pain, but they do not completely alleviate the pain.

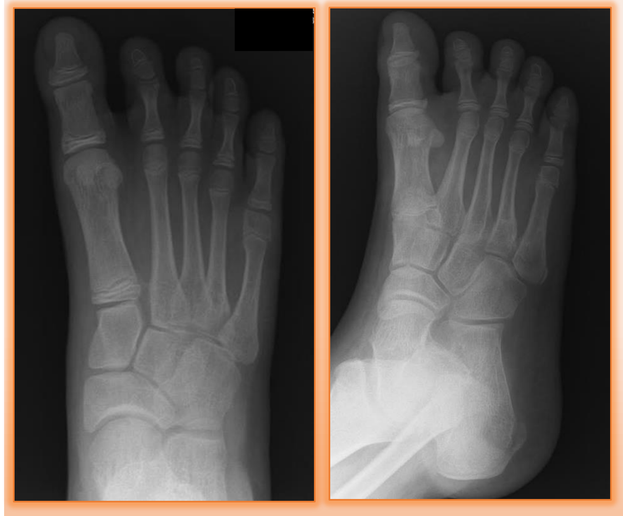
The patients family history is negative for pedal diseases or difficulty. Family history is positive for diabetes, heart disease. Surgical history is negative for any surgeries. No reported difficulty of gestation or childbirth. Social history includes being an active elementary school child. The patient takes medication for asthma as well as an antihistamine. The patient has no known drug allergies.

Physical Exam shows a generally normal exam, with pertinent positive findings of pain with palpation of right foot plantar 4th and 5th metatarsal bases—including pain to the 4th interspace. Patient also with mild antalgic gait of the right foot with decreased lateral column pressure.

Review of Systems is positive for asthma and seasonal allergies.



Radiographs reveal an additional metatarsal within the fourth interspace. The tubular ossified structure bridges the lateral aspect of the fourth metatarsal base with the distal fifth metatarsal epiphysis.



Post-operative follow-up radiographs show normalized fourth interspace without additional metatarsal. Fifth epiphysis remains enlarged in comparison with lesser metatarsal epiphysis.

Analysis and Discussion:

Polymetatarsia without polydactyly is rarely described in medical literature. Classification systems, to describe the condition and potential treatment options, have failed due to the rarity of the condition and potentially lack of need.

Generally, it is accepted the appropriate treatment for symptomatic additional metatarsals is surgical excision. Although in this case the post-operative course of the patient has been benign, this describes only one short-term follow up to the condition—as the patient ages the sequelae to the metatarsal excision will be of greater value.

Treatments performed, including long term patient follow up, are beneficial for surgical reference when the condition is encountered. Without continued discussion of this rarity, future Surgeon treatments are performed blind to the different potential outcomes of their excision.

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Financial Disclosure: There were no financial conflicts of interest to report in the making of this research poster.