

A Rare Pediatric Cause of Lateral Foot Pain: Symptomatic Os Vesalianum Pedis Requiring Excision and Peroneus Brevis Repair

Bradley Brickman¹, Gabriel Guardia Bonassi², Adrian Lewis³

Learning Point of the Article:

Symptomatic os vesalianum pedis is a rare, painful condition that should be considered in the differential diagnosis of persistent lateral foot pain in adolescents, as recognition can guide appropriate conservative or surgical management.

Abstract

Introduction: Os vesalianum pedis (OV) is a rare accessory ossicle located posterior to the proximal base of the fifth metatarsal, with an estimated prevalence of 0.6%. It results from the failure of fusion between the secondary ossification site and the primary ossification center. Most cases are asymptomatic and identified incidentally, but symptomatic presentations can occur following acute trauma or repetitive stress. Reported adolescent cases are limited, with prior literature documenting ages 13–19. We present the youngest reported case of a skeletally immature symptomatic OV in our findings of the English literature – a 12-year-old female – managed successfully with surgical excision and peroneus brevis tendon repair.

Case Report: A healthy 12-year-old female developed acute lateral left foot pain after striking her foot against a table. Urgent care radiographs suggested a non-displaced pseudo-Jones fracture. She was initially managed conservatively, being placed in a controlled ankle motion boot. At 4 weeks, persistent pain and absent callus formation prompted contralateral foot radiographs, revealing a similar ossicle. Magnetic resonance imaging (MRI) confirmed bilateral OV with peroneus brevis attachment, with the left side symptomatic. After 6 weeks of activity restriction failed to improve symptoms, surgical excision of the ossicle with tendon reattachment was performed. Postoperatively, she progressed from short-leg casting to gradual weight bearing in a boot, then returned to regular footwear. At final follow-up, she had full, pain-free function with normal gait, strength, and range of motion.

Conclusion: This case highlights symptomatic OV as a rare but important differential diagnosis for persistent lateral foot pain in adolescent patients, particularly when presumed fifth metatarsal fractures show no healing by 4–6 weeks. Contralateral radiographs and MRI can help differentiate OV from fractures and guide management. While most cases are treated conservatively, surgical excision with tendon repair can yield excellent short-term outcomes when non-operative measures fail. Given the scarcity of skeletally immature cases and unknown long-term implications for tendon integrity and growth plate behavior, further study is warranted to inform age-specific treatment guidelines.

Keywords: Os vesalianum pedis, accessory ossicle, fifth metatarsal, adolescent foot pain, peroneus brevis tendon, surgical excision.

Introduction

With an estimated prevalence of 0.6%, os vesalianum pedis (OV) is a rare developmental variant of the foot that presents as an accessory ossicle located just posterior to the proximal base of

the fifth metatarsal [1]. It is thought to result from the failure of the secondary ossification site to fuse with the primary ossification center of the fifth metatarsal during development [2]. Although most cases of OV are asymptomatic and typically

Access this article online

Website:
www.jocr.co.in

DOI:
<https://doi.org/10.13107/jocr.2026.v16.i06.7508>

Author's Photo Gallery



Dr. Bradley Brickman



Mr. Gabriel Guardia Bonassi



Dr. Adrian Lewis

¹Department of Orthopaedic Surgery, The University of Toledo Medical Center, Toledo, Ohio, USA,

²The University of Toledo College of Medicine and Life Sciences, Toledo, Ohio, USA,

³Department of Pediatric Orthopaedic Surgery, ProMedica Toledo Hospital, Toledo, Ohio, USA.

Address of Correspondence:

Dr. Bradley Brickman,
Department of Orthopaedic Surgery, The University of Toledo Medical Center, Toledo, Ohio, USA.
E-mail: bradley.brickman@utoledo.edu

Submitted: 05/03/2026; Review: 23/04/2026; Accepted: May 2026; Published: June 2026

DOI: <https://doi.org/10.13107/jocr.2026.v16.i06.7508>

© The Author(s). 2026 Open Access. This article is distributed under the terms of the Creative Commons Attribution 4.0 International License (<https://creativecommons.org/licenses/by-nc/4.0/>), which permits unrestricted use, distribution, and non-commercial reproduction in any medium, provided you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if changes were made. The Creative Commons Public Domain Dedication waiver (<http://creativecommons.org/publicdomain/zero/1.0/>) applies to the data made available in this article, unless otherwise stated.

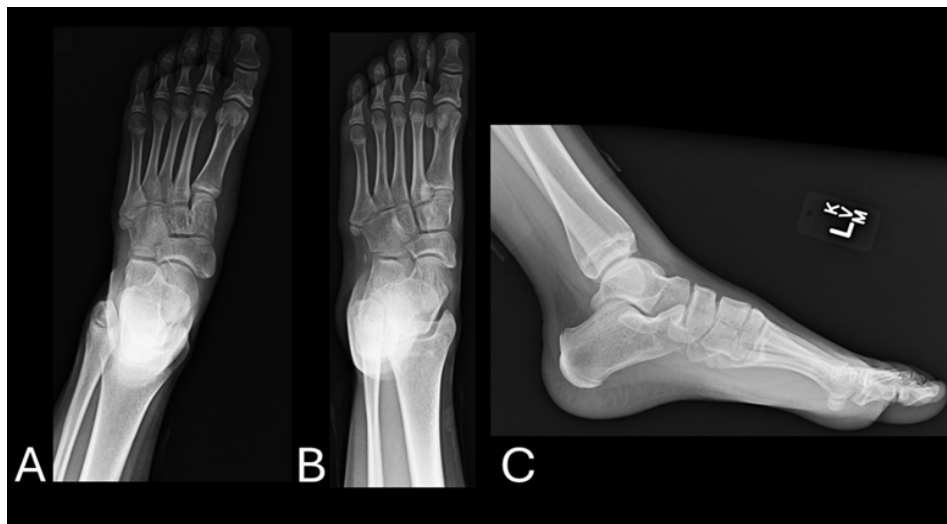


Figure 1: (a, b, c) initial anteroposterior, oblique, and lateral radiographs of the left foot showing an abnormality at the base of the fifth metatarsal.

she had point tenderness at the base of the fifth metatarsal, with an otherwise normal musculoskeletal and neurovascular examination. She was placed back into a CAM boot with instructions for weight bearing as tolerated (WBAT) and scheduled for follow-up.

At 4 weeks, the patient reported functional improvement and no longer required analgesics, although she still endorsed pain. Repeat radiographs, however, did not demonstrate expected callus formation (Fig. 2a, b, c). Contralateral foot imaging revealed a similar ossicle, raising suspicion for bilateral OV (Fig. 3a, b, c). Given persistent

symptoms, magnetic resonance imaging (MRI) was obtained, which confirmed the presence of a symptomatic OV with peroneus brevis tendon attachment (Fig. 4a, b, d). Despite continued CAM boot use, the patient remained symptomatic. Activity modification to NWB status for 6 weeks did not alleviate her symptoms, and due to ongoing pain that interfered with her desire to return to athletic activities, particularly running, surgical excision was recommended. She underwent successful excision of the ossicle with peroneus brevis z-lengthening and reattachment with the use of a 3.5 mm suture anchor (Fig. 5d). At 2-week post-operative follow-up, she reported no pain and was healing well in a short-leg bivalved cast. At 6 weeks, her cast was removed, radiographs were taken (Fig. 5a, b, c), and she was transitioned to WBAT with crutches and ROM exercises in a

OV (Fig. 3a, b, c). Given persistent symptoms, magnetic resonance imaging (MRI) was obtained, which confirmed the presence of a symptomatic OV with peroneus brevis tendon attachment (Fig. 4a, b, d).

Despite continued CAM boot use, the patient remained symptomatic. Activity modification to NWB status for 6 weeks did not alleviate her symptoms, and due to ongoing pain that interfered with her desire to return to athletic activities, particularly running, surgical excision was recommended. She underwent successful excision of the ossicle with peroneus brevis z-lengthening and reattachment with the use of a 3.5 mm suture anchor (Fig. 5d).

At 2-week post-operative follow-up, she reported no pain and was healing well in a short-leg bivalved cast. At 6 weeks, her cast was removed, radiographs were taken (Fig. 5a, b, c), and she was transitioned to WBAT with crutches and ROM exercises in a

Case Report

A 12-year-old female with a past orthopedic history of clavicle fracture and mild scoliosis presented with acute left foot pain following a minor traumatic event. She was swinging her leg with sudden excitement and struck it against a table. She initially sought care at an urgent care clinic, where plain radiographs of the foot were interpreted as a non-displaced base of the fifth metatarsal fracture, consistent with a pseudo-Jones fracture (Fig. 1a, b, c). She was placed in a controlled ankle motion (CAM) boot, made non-weight bearing (NWB), and advised to follow up with pediatric orthopedics.

At her initial orthopedic evaluation, 5 days later, she reported sharp localized pain to the lateral aspect of the left foot. On examination,



Figure 2: (a, b, c) Left foot anteroposterior, oblique, and lateral radiographs at 4 weeks, without callus formation.

Discussion

In cases of extra accessory ossicles, OV is documented as a relatively rare developmental variant across the United States, Europe, and Asia [1]. While it is common for OV to present asymptotically, it is hypothesized that trauma may disrupt the synchondrosis of the ossicle and the fifth metatarsal, leading to abnormal motion at this site [2]. This increased mobility could potentially allow the accessory ossicle to act as a fragment next to the insertion of the peroneus brevis tendon. As a result, repetitive contact or mechanical trauma of the tendon can occur, potentially producing inflammation and persistent lateral foot pain. Even in

cases where a fracture is absent, this pathophysiological mechanism is hypothesized to be possible, with a common theme being increased mobility of the accessory ossicle that insults the peroneus brevis tendon. While a few cases suggest that symptomatic OV may occur without a clear history of acute trauma, most cases in the literature involve direct injury or repetitive microtrauma, especially in physically active individuals, where chronic stress on the lateral foot is common [12]. The first line of treatment for symptomatic OV is usually conservative; however, upon failure of conservative management, surgical excision of the accessory ossicle and repair of the peroneus brevis tendon are often indicated. Another method with reported good outcomes involves fusion of the ossicle to the fifth metatarsal to stabilize the

synchondrosis while preserving the native tendon insertion of the peroneus brevis tendon; however, this approach is less commonly reported compared to excision and tendon repair [11]. In general, the prognosis of symptomatic OV in adults is reported to be good, with some cases resolving with conservative management and others reporting return of function after receiving surgical management [3, 4, 5, 6, 7, 9, 10, 12]. Nevertheless, since there appear to be limited adolescent cases of symptomatic OV, coming up with an evidence-based treatment plan currently requires extrapolation from adult case reports. In adolescent patients, there



Figure 3: (a, b, c) Contralateral right foot anteroposterior, oblique, and lateral radiographs demonstrating a similar ossicle.

CAM boot. She progressively weaned off crutches and returned to regular footwear.

Her recovery was briefly interrupted by two minor injuries: two ankle inversion injuries, one while not wearing the boot, and another misstep leading to transient lateral ankle pain. Neither incident resulted in new radiographic findings. She was managed conservatively with a CAM boot and referred for physical therapy. At her 3-month follow-up, she reported a full return to baseline function without pain, ambulating with a non-analgesic gait and demonstrating full strength and range of motion in the affected extremity (Fig. 6a, b, c). At her final follow-up, 9 months after surgery, she was performing activities as tolerated with no pain, weakness, or other deficits appreciated.



Figure 4: (a and b) Coronal magnetic resonance imaging of the left foot (short tau inversion recovery [STIR], T1) showing increased signal and marrow edema at the fifth metatarsal base. (c and d) Sagittal magnetic resonance imaging (STIR, T1) redemonstrating edema.



Figure 5: (a, b, c) Left foot anteroposterior, oblique, and lateral radiographs 6 weeks post-excision of os vesalianum pedis with peroneus brevis reattachment. (d) Intraoperative fluoroscopy confirms excision and tendon repair with a suture anchor.

is also a special consideration of whether growth plates surrounding the affected area are still open and how this affects treatment planning in skeletally immature patients, as this mechanism is poorly understood. With respect to diagnosis, it is evident in previous reports that symptomatic OV can disguise itself as other pathologies, such as an unfused apophysis and a pseudo-Jones fracture, the latter of which was the initial diagnosis of this case report [4, 7]. Notably, our case suggests that when a suspected pseudo-Jones fracture fails to show callus by 4–6 weeks, contralateral radiographs for comparison and MRI of the affected foot can help prevent the mismanagement of symptoms by clarifying whether symptoms are due to a true fracture, an unfused accessory ossicle, or possible tendon trauma. Overall, this adolescent patient's quick return to pain-free activity following accessory ossicle removal reinforces the idea that excision and tendon repair are a reasonable option after conservative treatment options have been exhausted. Even though this patient sustained two minor inversion injuries during recovery, neither appeared to impair the healing process. Nevertheless, due to the scarcity of adolescent symptomatic OV reports and this case having less than a year of follow-up care, uncertainty exists in terms of predicting long-term tendon and growth plate behavior, which outlines the need for further research to help guide the development of age-specific treatment guidelines for this rare condition.

radiographs for comparison and MRI of the affected foot could potentially help identify symptomatic OV.

Conclusion

Symptomatic OV is a rare condition with scarce adolescent patient reports, such that the treatment choice and implications on long-term tendon and growth plate behavior are poorly understood. We report the case of a skeletally immature 12-year-old female patient with symptomatic OV to describe the outcomes of accessory ossicle excision and tendon repair treatment, which appeared to be good in 1 year of follow-up care. In cases of no expected callus formation by 4–6 weeks in suspected pseudo-Jones fracture of the fifth metatarsal, contralateral

Clinical Message

Symptomatic os vesalianum pedis is a rare cause of lateral foot pain associated with an extra accessory ossicle behind the fifth metatarsal, often following the onset of acute or chronic injury. Since it is frequently confused with avulsion fractures of the fifth metatarsal, careful clinical and radiographic evaluation is important. Given the limited number of reported adolescent cases, detailed descriptions of diagnosis and treatment outcomes may help guide management in skeletally immature patients.



Figure 6: (a, b, c) Left foot anteroposterior, oblique, and lateral radiographs 3 months postoperatively showing interval healing after excision and tendon repair.

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

Conflict of interest: Nil **Source of support:** None

References

- Osiowski A, Preinl M, Osiowski M, Baran K, Jasiewicz B, Tattera D. The prevalence and clinical considerations of os vesalianum pedis: A meta-analysis. *Foot Ankle Surg* 2025;31:612-8.
- Sarrafiyan SK. *Osteology. Anatomy of the Foot and Ankle*. 2nd ed. Philadelphia, PA: Lippincott; 1993. p. 89-112.
- Dorrestijn O, Brouwer RW. Bilateral symptomatic os vesalianum pedis: A case report. *J Foot Ankle Surg* 2011;50:473-5.
- Mathew AJ, Hugh C, Nath S, Pillai MG. Red herring in orthopedics: A case report on painful os vesalianum pedis masquerading as an avulsion fracture of 5th metatarsal and review of literature. *J Orthop Case Rep* 2023;13:74-8.
- Petrera M, Dwyer T, Ogilvie-Harris DJ. A rare cause of foot pain with golf swing: Symptomatic os vesalianum pedis-a case report. *Sports Health* 2013;5:357-9.
- Mousafeiris VK, Papaioannou I, Kalyva N, Arachoviti C, Repantis T. Os vesalianum pedis in a young adult: A case report and literature review. *Cureus* 2021;13:e14896.
- Roy Mohan N, Dominic D. Os vesalianum pedis in a professional badminton player: A case report. *Cureus* 2024;16:e68411.
- Kim MH, Kim WH, Kim CG, Kim DW. Os vesalianum pedis detected with bone SPECT/CT. *Clin Nucl Med* 2014;39:e190-2.
- Aykanat F, Vincenten C, Cankus MC, Kose O, Sindel M. Lateral foot pain due to os vesalianum pedis in a young football player; a case report and review of the current literature. *Skeletal Radiol* 2019;48:1821-8.
- Beil FT, Burghardt RD, Strahl A, Ruether W, Niemeier A. Symptomatic os vesalianum a case report and review of the literature. *J Am Podiatr Med Assoc* 2017;107:162-5.
- Inoue T, Yoshimura I, Ogata K, Emoto G. Os vesalianum as a cause of lateral foot pain: A familial case and its treatment. *J Pediatr Orthop B* 1999;8:56-8.
- De Castro Correia M, Rodrigues Lopes T. Knowing your accessory foot ossicles and avoiding misdiagnoses: A case report of painful os vesalianum pedis. *Cureus* 2022;14:e27380.

Conflict of Interest: Nil
Source of Support: Nil

Consent: The authors confirm that informed consent was obtained from the patient for publication of this article

How to Cite this Article

Brickman B, Bonassi GG, Lewis A. A Rare Pediatric Cause of Lateral Foot Pain: Symptomatic Os Vesalianum Pedis Requiring Excision and Peroneus Brevis Repair. *Journal of Orthopaedic Case Reports* 2026 June;16(06): 463-467.

