

# Persistent Pediatric Hematogenous Osteomyelitis of the Calcaneus: A Case Report

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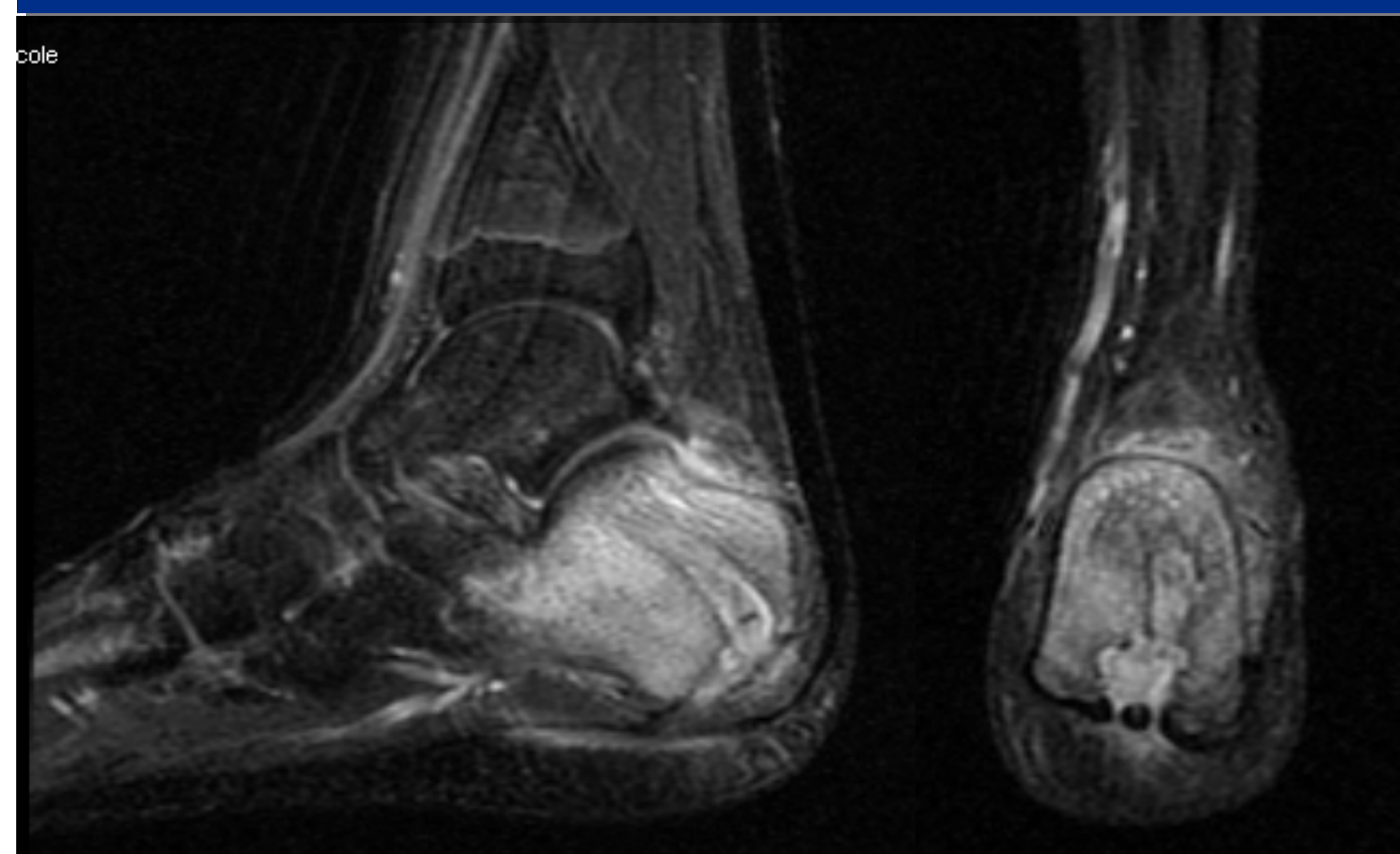
## LEARNING OBJECTIVE

To present a case of persistent acute hematogenous calcaneal osteomyelitis in a pediatric patient.

## LITERATURE REVIEW

Acute hematogenous osteomyelitis (AHO) is an infrequent sequela of common pediatric infections seeding the blood thus generating transient bacteremia (1). As the calcaneal apophysis is a long bone equivalent area with tortuous blood flow, it is predisposed to bacterial aggregation and development of osteomyelitis (2). Epidemiologically, *Staphylococcus aureus* is consistently the most common organism. AHO is twice as common in males as compared to females (3). Treatment of AHO often involves sequential parenteral to oral antibiotic therapy, however consensus regarding antibiotic route and duration as well as surgical intervention is debated (2). Some patients require multiple debridements to effectively minimize bioburden and improve antibiotic efficacy.

Figure 1 – Preoperative MRI



MRI exhibiting calcaneal osteomyelitis with an intra-osseous abscess and diffuse bone marrow edema.

## CASE STUDY

13-year-old male presented with acute onset pain to right heel on ambulation, with no acute trauma or open wounds. There were no abnormal laboratory findings. One year prior, he was diagnosed with Sever's disease which resolved without complication. His pain returned and CT was obtained indicating osteomyelitis of the plantar posterior calcaneus. The patient was hospitalized and an MRI was obtained, positive for osteomyelitis involving the calcaneus with an associated intra-osseous abscess. An initial fluoroscopy-guided irrigation and debridement (I&D) with bone biopsy was performed.

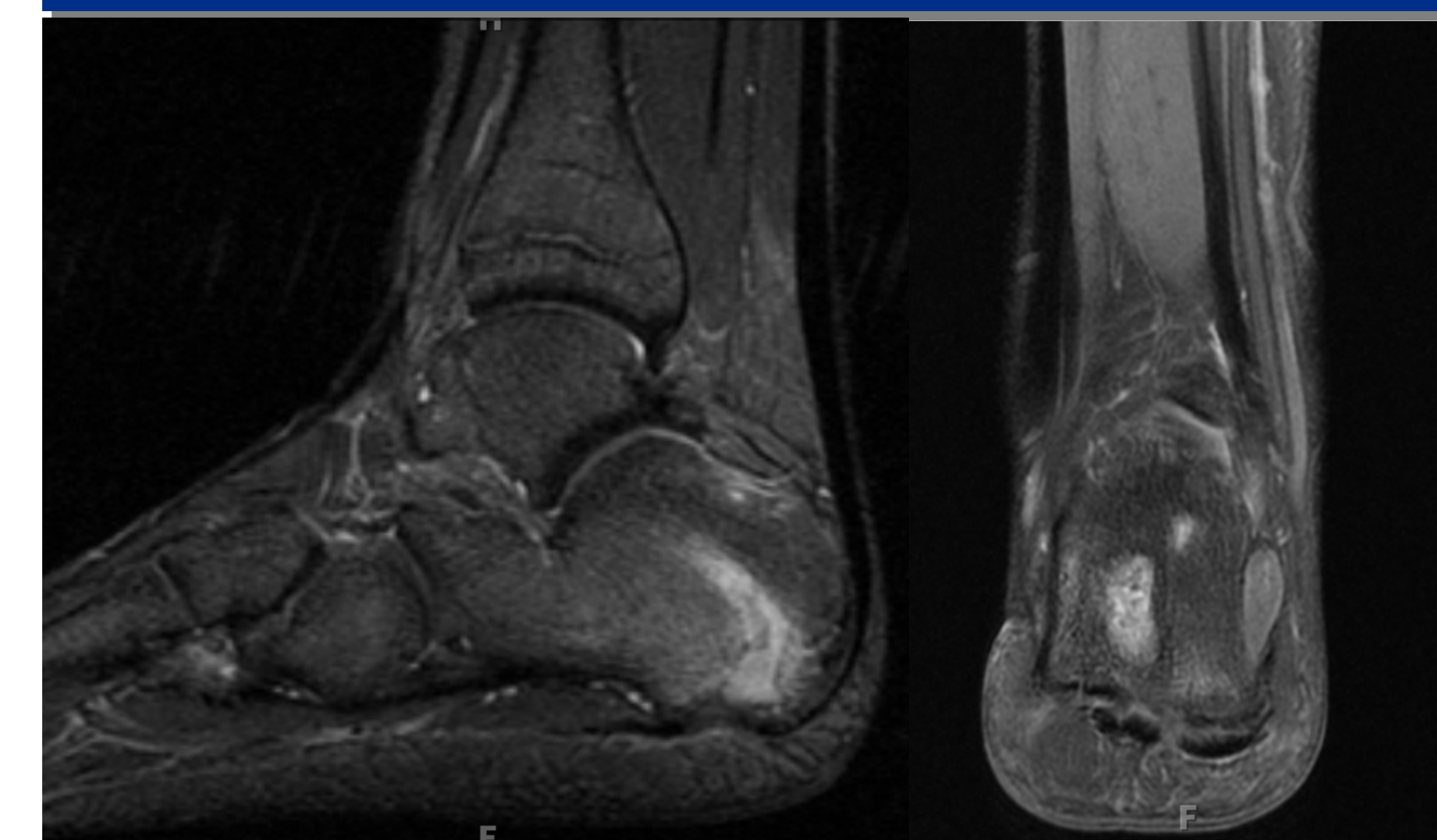
Figure 2 – Intraoperative Fluoroscopy



Pathology confirmed acute osteomyelitis and cultures identified Methicillin-sensitive *Staphylococcus aureus* as the infecting pathogen. The patient was placed on culture-specific intravenous antibiotics for 6 weeks duration. The patient continued to have pain on ambulation. Repeat MRI showed decreased bone marrow edema within the calcaneus but persistent chronic inflammation with a sinus tract extending through the calcaneus. A repeat I&D was performed without complication. The patient underwent a protracted course of intravenous antibiotic therapy and strict non-weight bearing. Upon completion of antibiotics, the patient was transitioned to full weight bearing.

One year after his final procedure, he is pain-free and has returned to full activity.

Figure 3 – Repeat MRI



Repeat MRI with significant decrease in diffuse bone marrow edema, however sinus tract persists.

## ANALYSIS/DISCUSSION

A lack of consensus regarding the most effective assessment and management of AHO make it a difficult and complex pathology to treat (2). The potential complications of pediatric calcaneal AHO necessitate a complete and efficient resolution of infection. Current literature supports our findings that pediatric calcaneal AHO can be persistent and requires vigilant follow up along with surgical interventions and IV antibiotics to resolve (2).

## REFERENCES

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