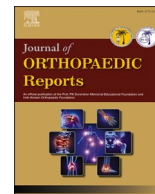






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## Utility of pneumatic walking boot in early mobilization and pain reduction for non-displaced 5<sup>th</sup> metatarsal fracture in a child: A case report

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## ABSTRACT

**Background:** Non-displaced closed fracture of the fifth metatarsal is commonly managed conservatively. However, efficacy in promoting early mobilization and improve patient quality of life remains variable. Pneumatic walking boot have been proposed to facilitate pain control and earlier functional load bearing.

**Case presentation:** A 12-year-old boy who sustained a non-displaced closed fracture of the right fifth metatarsal following an accidental impact at his daycare centre on 29th January 2026. Initial management included backslab immobilization with non-weight bearing (NWB), resulting in pain score of 3-4/10 when ambulating with crutches or walking frame. After consultation with an orthopaedic specialist, a pneumatic walking boot was recommended and fitted on day one of injury. With this orthotic aid, the patient reported a pain score of 0 – 1/10 and was able to ambulate independently without any other support, while still adhering to fracture care principles. On top of that, the boy able to return to school on day 4 of injury due to the aid of pneumatic walking boot.

**Discussion:** Conservative management of fifth metatarsal fracture traditionally involved casting and prolonged NWB, which may impede early ambulation and affecting all other daily activities. Studies comparing walking boots against traditional casting shows that walking boot can lead to earlier functional improvement and reduced pain. A comparative cohort study showed improved functional outcome and earlier return to pre-injury function in patient treated with walking boot versus short leg casts. Early functional treatment with walking boots has also demonstrated reliable outcomes and patient satisfaction in previous cohorts. Recent reviews suggest that less rigid immobilization and weight bearing as tolerated can yield improved early functional scores.

**Conclusion:** This case highlights the potential benefit of pneumatic walking boot in facilitation pain free early mobilization and enhancing quality of life in amateur paediatric patients with non-displaced fifth metatarsal fractures. Further prospective studies are warranted to refine guidelines on early functional management using pneumatic walking boots.

### 1. Introduction

Fractures of the fifth metatarsal are among the most common foot fractures in children and adults.<sup>1</sup> Conservative treatments traditionally include non-weight bearing cast immobilization and crutch use, which may limit early function and independence.<sup>2</sup> Increasing attention has been given to functional treatment approaches that permit controlled weight bearing while protecting the injured structures. Pneumatic walking boots have been employed as functional orthoses to provide

support while allowing partial weight bearing, potentially improving pain control and quality of life during recovery.<sup>3</sup>

#### 1.1. Case Presentation

A previously healthy 12-year-old boy presented with right foot pain and swelling after a heavy bench fell on his foot as his daycare centre. Immediately after the incident, patient experienced pain over the lateral aspect of the foot and difficulty in bearing weight. Physical examination

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