

Challenges in treating complications of an open tibial fracture

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Objective: To describe the challenges in treating complications resulting from an exposed tibial fracture caused by automobile trauma.

Method: A 44 years old female patient, smoker, with anxiety disorder and no other known comorbidities, was admitted to a specialized service to start Hyperbaric Oxygen Therapy (HBOT) on 04/08/2024. The patient was the victim of a car accident (car x motorcycle) on 04/05/2024, suffering an exposed fracture of the right tibia and undergoing surgery on the same day, with a high risk of complications. She started HBOT, but discontinued the treatment due to intolerance. She returned on 07/17/2024 with an open lesion measuring 14 x 2 cm in the leg and using an Ilizarov-type external fixator. Already under follow-up with an infectious disease specialist for osteomyelitis, she restarted HBOT, removed the fixator and underwent a new surgical procedure, keeping the wound closed until November, when she presented dehiscence and exposure of the tibial osteosynthesis plate. Removal of the plate was indicated, but the fracture was not consolidated, so a medial gastrocnemius muscle flap with local skin graft was chosen on 02/27/2025. He maintained dressings with essential fatty acids and underwent 100 HBO sessions.

Results: Forty days after the procedure, the patient showed excellent wound healing, with no signs of complications. Although she is still awaiting bone consolidation for future plate removal, she is recovering pain-free, with improved function and quality of life. It is important to emphasize that antibiotic treatment was all guided by culture.

Conclusion: The combination of reconstructive surgical procedures, such as muscle flap and skin graft, together with hyperbaric oxygen therapy, has proven to be an effective strategy in the management of complex complications of exposed fractures with osteomyelitis. The case highlights the importance of an interdisciplinary approach and adherence to treatment for therapeutic success and patient recovery.

Key Words: Exposed fracture; Osteomyelitis; Hyperbaric oxygen therapy; Muscle flap; Skin graft.

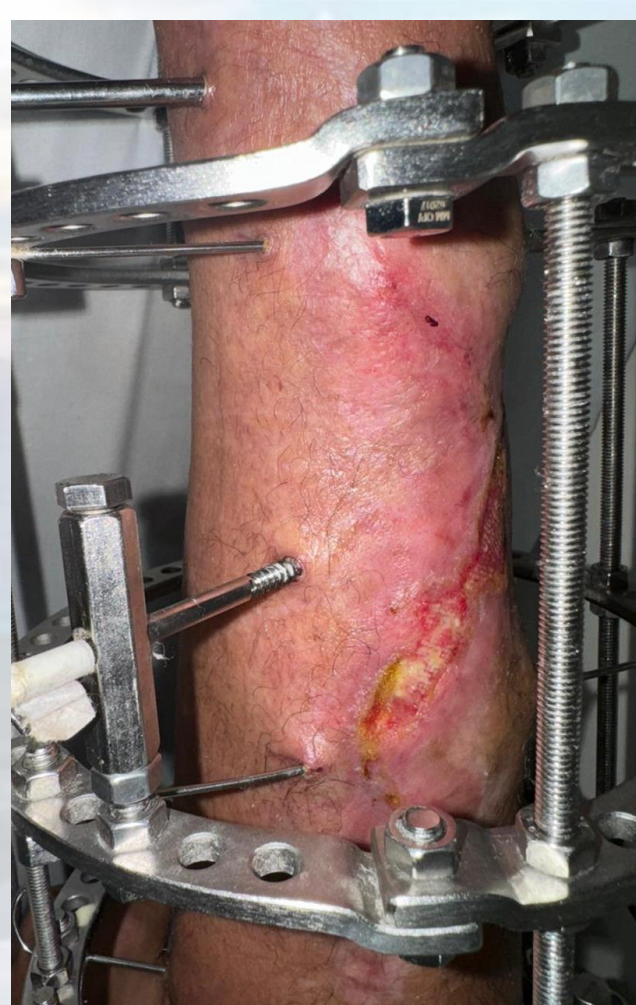


Figure 1 - 30/07/2024



Figure 2 - 19/11/2024



Figure 3 - 17/02/2025



Figure 4 - 05/03/2025



Figure 5 - 25/04/2025