

CASE REPORT

DISTAL FIBULAR STRESS FRACTURE IN A FEMALE RECREATIONAL RUNNER: A CASE REPORT WITH MUSCULOSKELETAL ULTRASOUND IMAGING FINDINGS

Lisa T. Hoglund, PT, PhD¹Karin Grävare Silbernagel, PT, PhD²Nicholas R. Taweel, DPM, DPT³

ABSTRACT

Background and Purpose: This case report describes a physical therapist's use of diagnostic ultrasound imaging in the decision making process used to refer a patient to a physician for a suspected fibular stress fracture. The purpose of this case report is to 1) describe the history, subjective examination, and objective examination findings of a fibular stress fracture, 2) describe the ultrasound findings associated with a fibular stress fracture, and 3) describe the decision making process of a physical therapist in the decision to refer the patient to a medical physician for further work-up.

Case Description: A 52-year-old female recreational runner with a recent increase in running intensity self-referred to a physical therapist with a 19-day history of lateral lower leg pain. Examination revealed relatively normal ankle range of motion, mild weakness of ankle invertors and evertors, no increase in pain with resisted muscle tests of the ankle, and tenderness to palpation over the fibularis brevis muscle and distal fibula. Diagnostic ultrasound examination of the fibularis muscles revealed cortical irregularity of the distal third of the fibula in the location of tenderness.

Outcomes: The physical therapist used the abnormal ultrasound findings, running history, symptoms, and physical examination for differential diagnosis, and decided to refer the patient to a physician for further examination. Radiographs revealed a fibular stress fracture. Follow-up ultrasound imaging demonstrated a mixed hypoechoic-hyperechoic appearance of the fibular cortex typical of healing fracture and the presence of bony callus.

Discussion: Diagnostic ultrasound imaging is increasingly being used by physical therapists to guide rehabilitation. Ultrasound imaging of musculotendinous structures may display adjacent bone. Physical therapists should be knowledgeable of normal and abnormal bony ultrasound imaging findings. Abnormal ultrasound findings may be one sign indicating the need to refer a patient for consultation by a physician.

Key Words: Differential diagnosis, musculoskeletal ultrasound, running, stress fracture

¹ University of the Sciences, Samson College of Health Sciences, Department of Physical Therapy, Philadelphia, Pennsylvania, USA.

² University of Delaware, Department of Physical Therapy, Newark, Delaware, USA.

³ Rothman Institute, Foot and Ankle Service, Thomas Jefferson University Hospital, Philadelphia, Pennsylvania, USA.

Acknowledgement

The subject of this case report was informed that the data concerning the case would be submitted for publication and gave her consent.

CORRESPONDING AUTHOR

Lisa T. Hoglund

University of the Sciences

600 South 43rd Street

Philadelphia, PA 19104-4495

E-mail address: l.hoglund@uscience.edu