

Sound waves could be viable alternative in diagnosing minor fractures

May 15 2015

Researchers conducted a study of the usefulness and efficiency of portable ultrasound in detecting the presence of minor fractures in patients presenting to a minor injuries unit. Analysis showed that 85% of patients with a fracture confirmed by X-ray had injuries detected through ultrasonography. The authors say emergency clinicians could rule in fractures by studying the ultrasound images but ruling out fractures is still the job of radiographers.

Ultrasound is set to play a significant role in detecting minor fractures in the future, according to a new study. The move would reduce exposure to radiation, as well as providing an alternative when radiology units are closed.

Ultrasound is a high pitched sound wave generated at a frequency of more than 20,000Hz in air, though the frequency changes depending on the density of the objects through which it passes.

Over a 12 month period, 97 [patients](#) with suspected minor fractures who turned up to Cirencester Hospital's minor injury unit volunteered to participate in the study, which is reported in this month's issue of *Emergency Nurse* journal.

Following clinical assessments of suspected limb fractures where the skin was not broken (closed fractures), patients were referred to X-ray, as usual, but also for [ultrasound imaging](#) of their injured area. Images from both were then compared.

Results showed that 60 patients(62%) had fractures confirmed by normal routine X-ray assessment. Analysis showed that 51 of these patients (85%) had injuries detected through ultrasonography. The [ultrasound](#) picked up on 87% of the 24 patients with arm fractures.

Ultrasound is easy to perform at the bedside and patients who took part in the study said it is more convenient, less painful and distressing than radiography. Ultrasound also allows the comparison of right and left limbs without concern about multiple exposure to irradiation. From a staff point of view, ultrasonography training is minimal, and its use also has the potential to save money for emergency care settings.

Authors Salam Musa and Paul Wilson said: 'The study suggests that [ultrasonography](#) is a reliable way to detect fractures of the distal radius or ulna and it is reasonable to conclude that portable ultrasound devices will play an increasingly significant role in the assessment of patients with suspected minor or even subtle fractures in emergency care settings.'

They added that the study demonstrates that emergency clinicians can rule in fractures by studying ultrasound images but 'ruling out [fractures](#) is still the job of radiologists'.

More information: "Ultrasonography and radiography: a comparison." *Emergency Nurse*. 23, 2, 34-37. [dx.doi.org/10.7748/en.23.2.34.e1416](https://doi.org/10.7748/en.23.2.34.e1416)

Provided by RCNi

Citation: Sound waves could be viable alternative in diagnosing minor fractures (2015, May 15) retrieved 17 July 2024 from <https://medicalxpress.com/news/2015-05-viable-alternative-minor-fractures.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.