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Palm Thorn Foreign Body Ultrasound Detection, Case Study

Ahmad Mokhtar Abodahab[1,*]

[1] Radiology Department, Faculty of Medicine, Sohag University, Sohag, Egypt.

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Abstract: In this paper we investigate a foreign body puncture, a common type of trauma presentation at hands and feet especially in-between children and workers in agricultural communities. The patient may be aware that there is a foreign body retained or just feel puncture and pain. Radiological scan is the main method for diagnosis especially ultrasound. X ray is ideal for detection of radiopaque foreign bodies but woody type is translucent. This case study explained that Ultrasound is an ideal method of diagnosis of soft tissue foreign body retaining especially of woody or plant type as palm thorns. Ultrasound is a very good method for detection and diagnosis of foreign bodies either to be radiopaque or radiolucent as woody foreign bodies of plant or palm source. Ultrasonography enables excellent assessment of adjacent anatomical structures (muscles, tendons, ligaments, and neurovascular structures) and of associated lesions. Ultrasound has the advantage of being a non-ionizing modality in comparison with X ray and CT.

Keywords: Ultrasound, Foreign body, Palm Thorn.

1 Introduction:

Foreign body punctures with or without retaining is a common presentation. It occurs mainly at the hands or feet. Wide age Variety of both genders can complain about it. Many types of foreign bodies can injure hands or feet, which may be woody, metallic or glass. It may relate to occupational state or community type. Palm thorns are a common foreign body in agricultural communities in different countries. Ultrasound is the commonest and best radiological method for the assessment and diagnosis of these cases [1-5].

2 Case Study:

A boy of 6 years old age was presented with a history of Lt index finger injury with a woody foreign body 3 months ago while he was playing in a garden. Clinical examination left index finger proximal inter phalangeal joint dorsum localized visible and palpable firm painful small swelling with a history of puncture injury at the site of complaint. After clinical assessment, soft tissue ultrasound was requested. Ultrasound was done by a linear probe of frequency 7 MHz. It shows that this visible and palpable swelling was oval in shape and hypoechoic measures about 15 X 5 mm, representing focal inflammatory changes surrounding a foreign body "Fig 1". At a depth of 2 mm a linear echogenic foreign body horizontally and obliquely located is detected "Fig 2".

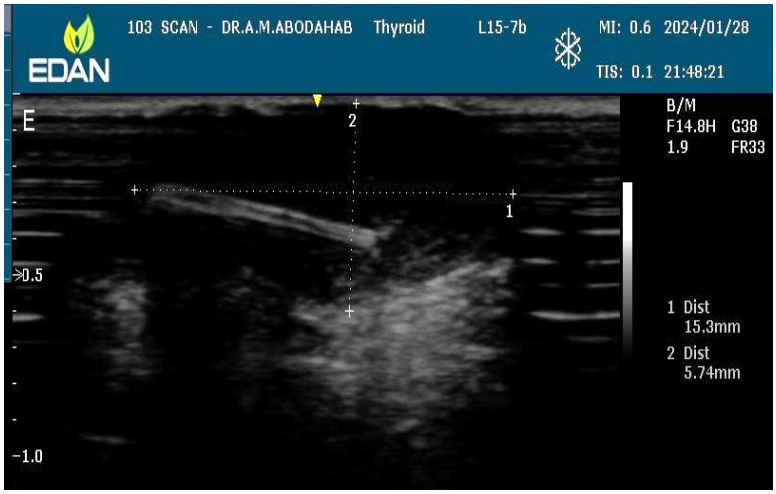

Fig. 1: US shows focal hypoechoic swelling at the site of complaint of the dorsum of left index finger measures 15 X 5 mm.

*Corresponding author e-mail: dr.ahmadabodahab@gmail.com

Fig. 2: A linear echogenic foreign body is noticed at a depth of 2 mm.

The foreign body measures 8.9 mm in length, with a wider base in comparison with its tip, which is similar to the appearance of thorns on palms or different types of plants "Fig 3"

Fig. 3: The appearance of foreign body at US examination.

3 Operative Note:

Surgical exploration was performed at the site of the injury, revealing a focal inflammatory region that encircled a foreign body that was identified as a palm thorn. This foreign body was subsequently extracted. However, it fractured during the extraction procedure, followed by good hemostasis and suturing of the wound in anatomical layers Fig. 4.

Fig. 4: A & B The extracted palm thorn foreign body "A" and site of it "B", note that it has the same description as explained in US of relatively wide base at thinner tip.

4 Discussion:

Hands and feet are the most common site of foreign body puncture trauma and retain. It usually related to an occupational state, which may alter the type of foreign body, which may be of metallic nature in industrial occupations, and of woody nature for carpenters and of plant source in agricultural fields, but it may be incidental occurs with no relation to occupation but just with contact with the source of this foreign body. Radiological scans are the main method for detection of any retained foreign bodies at soft tissue (1,4,10). X-ray and CT are the best for the detection of metallic foreign bodies which are radiopaque, but glass and woody foreign bodies are radio-translucent and which are usually not seen at X-ray. Palm thorn is a common type of foreign body trauma of hands and feet in agricultural communities, either between workers or children contacting it. Even if it was large and extracted at the time of puncture, the tip of it may be broken and retained causing persistent pain focal inflammatory changes [2,4,5]. Surgical extraction of this foreign body is the main method of treatment. The US is explaining not only the existence of foreign bodies but also location, description, and relation to important structure such as large blood vessels [6,7,9,10].

5 Conclusion:

Woods, plants or palm thorns are a common type of retained foreign bodies in hands or feet. Accurate detection of it is a very important step for good management. The US is the method of choice in detecting and diagnosing foreign bodies that are either radiopaque or radiolucent, such as woody foreign bodies from plant or palm sources. Ultrasonography enables excellent assessment of adjacent anatomical structures (muscles, tendons, ligaments, and neurovascular structures) and associated lesions.

Abbreviations:

CT Computed Tomography

US Ultrasound

Conflicts of interest

The author has no conflicts of interest to declare .

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Data availability

Data sharing is not applicable as no new data were created or analyzed in this study.

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