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## CASE AND RESEARCH LETTER

### [Translated article] Usefulness of the Water-Bath Technique in Ultrasound Skin Imaging



#### Utilidad de la técnica de «water-bath» en la ecografía cutánea

To the Editor:

Clinical ultrasound techniques have undergone significant advances in recent years and are routinely used to support clinical assessment in emergency situations.

A 62-year-old woman with no remarkable past history presented with a stabbing pain in the pulp of the third left finger that had started after she had been handling glass. There were no visible lesions, but the pain persisted despite analgesics (paracetamol 1 g/8 h).

Suspecting a foreign body, we examined the patient's finger using ultrasound with a linear ultrasound probe and the water-bath technique (in which tissue is immersed in a liquid medium). The ultrasound showed a hyperechogenic image corresponding to a glass splinter in the pulp of the finger (Fig. 1A and B).

The splinter was surgically removed in the plastic surgery department (Fig. 1C).

The water-bath technique is a painless procedure that produces high-quality images of superficial structures

without the need for ultrasound gel or contact between the probe and the skin.<sup>1</sup> It is used to examine small, irregular surfaces where contact with the probe is lost and the proximity of the organ or structure being examined results in a suboptimal image in the middle of the screen. By performing the examination in a deeper liquid medium (in this case the water in the bath where the hand is immersed), the entire surface to examine is in contact with the liquid surface and can also be positioned in the middle of the ultrasound field, substantially improving the quality of the resulting image.

Ultrasound using the water-bath technique is primarily used to detect foreign bodies in extremities or other small, irregular, superficial structures; evaluate certain skin or soft tissue infections (e.g., abscesses); and examine musculoskeletal and/or tendon injuries.

The procedure is as follows. First, immerse the part of the body to be examined in a container filled with serum or warm water. Then insert the ultrasound probe and place it perpendicular to the skin at a distance of approximately 1 cm to capture the images. There is no need for ultrasound gel or contact between the probe and the patient's skin, as water is an excellent conductor.

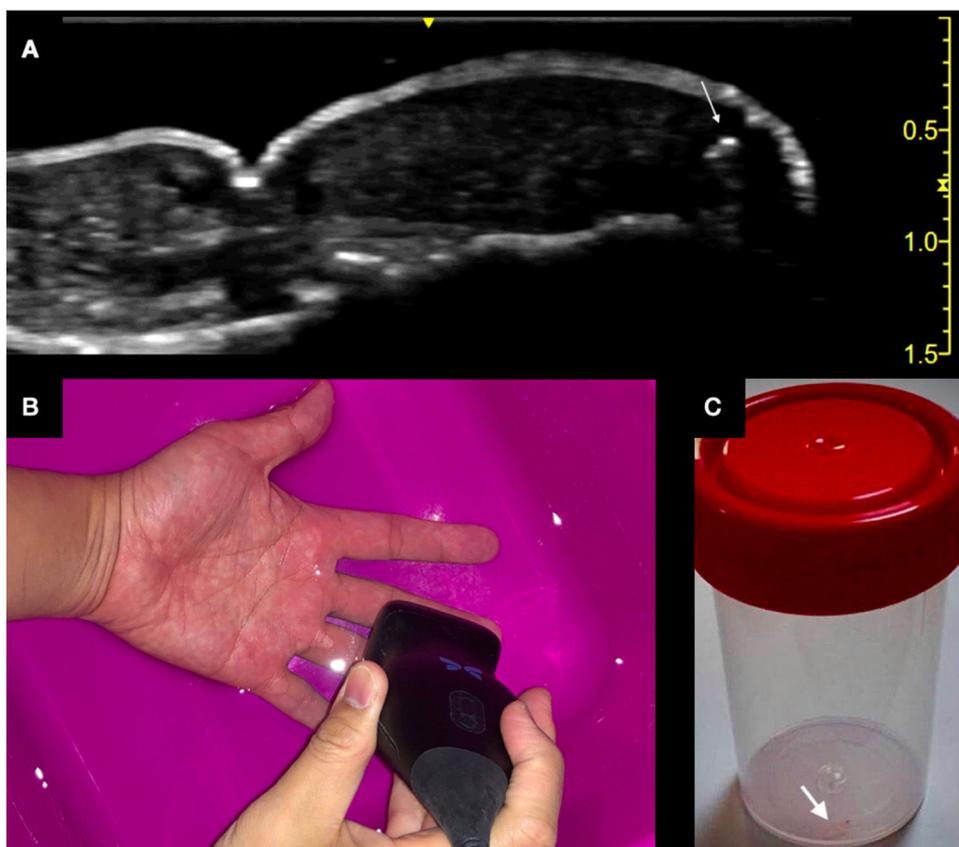
Clinical ultrasound using the water-bath technique can detect foreign bodies that are difficult to visualize or localize by physical examination. Although this technique is underused, it is a safe and simple tool that should be borne in mind for examining small, irregular, superficial structures.

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**Figure 1** A, Glass splinter (white arrow) in the third finger visualized by clinical ultrasound using the water-bath technique (B). C, Surgically removed glass splinter.

### Conflicts of Interest

There are no conflicts of interest.

### Reference

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