

Kidney Biopsy with a Cheap Phantom

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Introduction

Percutaneous renal biopsy is the most common method for obtaining renal tissue. Despite its valuable diagnostic advantages in various diseases, it may be associated with increased risk and may induce catastrophic complications. Incorporating real time ultrasound to renal biopsy improves its success rate and outcomes (1). Point of care ultrasound is the use of Ultrasound on patients' side by physicians (2).

It is noteworthy that physicians' skills and experience can affect the outcomes of kidney biopsy under guidance of ultrasound. One of the useful tools for significant improvement of trainees' skills is the application of renal phantom which is the anatomical replicas of body organs.

The main limitation for the training model of percutaneous kidney biopsy through phantoms is the inaccessibility to expensive simulation models (3).

In this article, the authors first explained how to make a cheap model of phantom easily by sheep's kidney in a bowl filled with jelly. Then in the attached video, they showed how to find the ideal site (lower pole of kidney) and in real time, traced biopsy needle from jelly surface to kidney concomitant with ultrasound screen.

Abstract

Percutaneous renal biopsy is the most common method for obtaining renal tissue. In this article, the authors first explained how to make a cheap model of phantom easily by sheep's kidney in a bowl filled with jelly. Then in the attached video, they showed how to find the ideal site (lower pole of kidney) and in real time, traced biopsy needle from jelly surface to kidney concomitant with ultrasound screen.

Keywords: Kidney Biopsy; Educational Video; Point of Care Ultrasonography.

Conflict of interest: The author declares no conflict of interest.

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Instruction for making a sheep kidney phantom:

1. Use a bowl with at least 30 in 15 in 15 centimeters (W.L.H) in size
2. Pour the Jelly fluid in the lower part of the bowl (5 centimeters) for making the first layer.
3. Put it in the refrigerator for about 2 hours
4. Put the sheep's kidney on the first layer of jelly
5. Add the extra jelly fluid to fill the remaining 5-7 centimeters around and above the placed kidney.
6. Put it in the refrigerator for about 2 hours

Ethical consideration

This study was approved by the ethics committee of the vice chancellor of research of Guilan University of Medical Sciences.

Conflict of Interest

The authors declare no conflicts of interest.

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