

Improvised femoral nerve block model using everyday items: An affordable alternative for medical training

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Background:

Nerve blocks have emerged as a revolutionary approach for managing pain and reducing opioid dependence among patients. Performing nerve blocks under ultrasound guidance in the emergency department (ED) is considered an effective and minimally invasive procedure that can be performed by adequately trained ED physicians. However, the cost associated with commercially available nerve block models poses a significant challenge to widespread adoption and training. To address this issue, our research team developed an improvised femoral nerve block model using readily available everyday items.

Methods:

The prototype femoral nerve block model was constructed using chicken breasts as a simulated anatomical structure, balloons and spaghetti as tactile representations of vessels and nerves, gel as an acoustic interface, and cling wrap for creating a sterile environment.

Results:

To perform ultrasound-guided nerve blocks, it is necessary to see the fascial plane division clearly while injecting the anesthetic. This clarity was accomplished by using two layers of chicken breasts, each wrapped individually in cling wrap. Additionally, it is crucial to visualize and differentiate the nerve, artery, and vein. This was achieved by filling the balloon with different substances that served as distinct markers for each vessel. Preliminary results demonstrated that the improvised femoral nerve block model effectively simulated the anatomical and tactile characteristics necessary for nerve block training.

Conclusion:

In conclusion, our low-fidelity femoral nerve block model offers an affordable and accessible option for training healthcare professionals in ultrasound-guided nerve blocks. By utilizing everyday items, we have demonstrated that cost-effective alternatives can be developed to address the financial constraints associated with conventional training models. Further research is warranted to refine and validate this improvised model and explore its potential applications in various medical specialties.