



Aspirating a Knee Joint: A Simple Approach to Acquiring Core Medical Competencies

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Context

A swollen painful joint is a common clinical presentation, with a wide range of differential diagnoses including septic, inflammatory or crystal arthritis. Presentation with a painful joint requires rapid diagnosis in order to achieve the best patient outcomes. Knee aspiration is an important skill for a medical trainee to be able to perform confidently and independently.

Reason for the idea

Diagnosis is often delayed because of an inability to aspirate the affected joint. Acquiring and practicing competencies as a core medical trainee can be challenging, and therefore emphasis is placed on obtaining the 'essential skills' first. A potential issue with achieving competence is that knee aspiration is only a 'desirable' skill on the core medical training (CMT) curriculum (1).

Methods

A joint aspiration and injection skills session was organized and delivered to eight core medical trainees at the Harefield Hospital by a competent second year core medical trainee. In order to assess their knowledge and experience with knee aspiration, simple feedback forms were completed by each trainee before and after the simulation. Trainees had the opportunity to aspirate a knee effusion on a manikin designed for this purpose (2).

All trainees were able to correctly answer clinical questions on the differential diagnosis for a swollen joint, indications and contraindications for aspiration, and specific laboratory tests for the joint fluid aspirated. Trainees were questioned on their experience and knowledge of knee aspiration and injection before and after the session. Initial responses to experience with joint aspirations were: None (12.5%), I have seen / read but not attempted (37.5%), could perform with supervision (50.0%), completely independent (0.0%). 100% of the core medical trainees agreed that this skill should be an essential competency.

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Evaluation

It is important that the trainees are proactive and take advantage of the numerous teaching resources that are available. This was a simple and cost effective learning method. The total session cost (re-useable manikin and manual) was £1214.99. The total session time (preparation and delivery) was 165 minutes.

Providing all trainees with the opportunity to practice aspirating a knee effusion on the manikin in a simulation environment doubled their confidence (increased from 40% to 80%). The trainees felt significantly more confident in explaining this procedure to a colleague, therefore also fulfilling the teaching aspects of their curriculum. However any teaching would require formal supervision from a competent assessor to ensure validity. Individual trainee feedback included practice with a range of joints and incorporating the use of ultrasound.

A simulated joint aspiration within a safe learning environment provides educational benefit to core medical trainees, as well as rheumatology trainees. Knee aspiration and injection will now be included as part of the core medical training competency skills session at Harefield Hospital, alongside chest drain and central line insertion, lumbar puncture and blood culture taking to provide formal certification of competence within a laboratory setting.

Reference

1. Joint Royal College of Physicians Training Board. Specialty training curriculum for core medical training: 2009. Available from: <http://www.jrcptb.org.uk/sites/default/files/FINAL%202009%20CMT%20Curriculum%20%28AMENDMENTS%20Aug%202013%29.pdf>
2. Limbs and things UK. Knee for Aspiration Mk 2: 2014. Available from: <https://www.limbsandthings.com/uk/products/categories/joint-injection>