

Ultrasound-Guided Cannulation Course

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BACKGROUND

Difficult IV access is not a new problem. Patients are getting larger, have more comorbidities and are staying in hospital longer. Frequent venesection and an encouragement to remove peripheral cannulae after 4 days has led to more difficulty obtaining IV access.

When access is particularly challenging the anaesthetist or intensivist is often called to help.

The use of ultrasound-guided cannulation, in theory, should make this a rarity, however it is not a skill taught in medical school and the already beleaguered junior doctor has little time to learn this skill on the job.

Our aims were two-fold - to improve the plight of the junior doctor by equipping them with the skills to obtain vascular access through the use of ultrasound, and therefore also to limit the amount of extraneous work we, as an ICU team, have to do.

With this in mind we wanted to create a course for junior doctors that would enable them to learn the fundamentals of ultrasound and allow the opportunity to practice this skill. The course needed to fulfil some fundamental criteria. It had to:

1. Be free of cost
2. Cater primarily to junior doctors
3. Be short - ideally 1hr long
4. Have practical hands-on experience
5. Provide some basics of ultrasound

We were able to provide 6 teaching sessions of 1 hour duration each in the anaesthetic department of Royal Bournemouth Hospital for up to 8 junior doctors per session.



Attendees had the chance to practice on this model

Sonotrain™ Vein model

METHODS

Lecture - the lecture was a focused 10 minute PowerPoint presentation on the principles of ultrasound. It included a video of ultrasound-guided cannulation, information about the Doppler effect and practical aspects of using ultrasound.

Introduction to the ultrasound machine - we talked through the functions of the ultrasound machine we were using - namely the Sonosite - focusing on probe usage, manipulation of depth and gain and the different planes of imaging - 'out-of-plane' and 'in-plane'.

Practice - the junior doctors then split into groups of 3 and practised identifying vessels on each other, differentiating artery from vein, and looking at how to position the probe and change depth and gain. The next step was for each doctor to try cannulating the Sonotrain fake arm (kindly donated by the education department). This vein model is perfect for sonoanatomy and it enabled the doctors to practise safely (see picture above).

RESULTS

Our aim of helping junior doctors learn and feel confident with the technique of ultrasound was assessed using pre- and post-course questionnaires. We wished to determine whether they felt more confident in using the ultrasound machine, knew how to cannulate with ultrasound and whether they would be happy to practise on their own.

All of the doctors reported an improvement in their confidence in using the ultrasound machine (30/30, 100%). 29 of the 30 (96%) said they would feel comfortable attempting ultrasound cannulation on a patient following the course.

Our second aim of limiting the number of cannula requests ICU doctors receive is more difficult to assess because it requires accurate recording of the number of requests, which despite our best efforts was not being done. We have subsequently set up a spreadsheet to record the requests and to ask whether or not the requester has attended or had any formal ultrasound teaching.

Overall feedback for the course was universally positive. All of the doctors said the faculty were knowledgeable and friendly. A selection of the comments are written below.

'Really great opportunity. Incredibly useful and well thought out delivery'

'Every junior doctor should do an ultrasound cannula course!'

'Really useful practical course. I feel much more confident to try an US guided cannula in practice now. Thank you!'

Poster advertising the Course

Free Ultrasound Cannulation Course For Junior Doctors

Are you interested in learning a new skill? Do you want hands-on practice with ultrasound? Are you fed up of calling for help with difficult iv access?

If so - then sign up for the free USS cannulation course

6 places for each session available

Practical workshop with lecture and videos.

Venue: RBH, Anaesthetic Seminar Room

Dates:
11/11/20 6-7pm
19/11/20 6-7pm
24/11/20 6-7pm
02/12/20 6-7pm

Organisers: (Anaesthetic Registrars)
Dr Robyn Lee
Dr Ben Cambers

Please e-mail benc39@hotmail.com to book a place



For correspondence please e-mail either

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During the process of creating this course we asked ourselves why basic ultrasound skills aren't taught in medical school? We are in the process of contacting local medical schools and trying to introduce a variant of this course to 4th/5th year medical students as part of their clinical skills practical teaching sessions. The aim is to have this up and running by 2022.

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