Service Priorities and Programmes

Electronic Presentations

Convention ID: 170
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Quality assurance of point-of-care ultrasound (POCUS) in Emergency Department (ED)

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Keywords:
Point of care ultrasound
Emergency department
Quality assurance

Introduction

Point-of-care ultrasound (POCUS) often plays a pivotal role in emergency medicine diagnosis. The scope of POCUS in emergency department (ED) is ever expanding. However, POCUS is operator dependent, and its quality assurance in Hong Kong is still on the way of development.

Objectives

For continuous quality improvement of POCUS in ED, which aims to enhance interests of staff and accuracy in performing POCUS.

Methodology

Medical staff of ED in Prince of Wales Hospital was encouraged to save images or video clips after performing POCUS. Those can be saved in any one of the three available ultrasound machines. The respective findings were documented on designated “ultrasound quality assurance (QA) forms”, which are stocked near the ultrasound machines. The forms contain 11 emergency ultrasound applications and has simplified format to aid recording of findings. Two associate consultants in the department who have particular interests in emergency ultrasound reviewed the collected ultrasound QA forms and images/ videos regularly. We perform internal QA (appraisal of image acquisition quality and whether diagnosis can be made from recordings) and external QA (comparison of POCUS findings versus findings from ultrasound or computed tomography done by Department of Radiology). The findings were discussed with respective doctors in a friendly manner. Interesting cases were also shared in department meeting for educational purposes.

Result

The program started since August 2014. In a five-month period (till end of December

2014), 21 completed ultrasound QA forms with corresponding images/ videos were available and processed. 76% of the scanning and QA forms were completed by non-specialists/ trainees while 24% were by ED specialists. Nearly all of the 11 ultrasound applications were involved. 80% of the scans had positive POCUS findings while 20% scans were negative. The recorded findings correlated well with Department of Radiology or in-patient diagnosis. Concerning internal QA, 90% of the saved images/ clips were sufficient for diagnosis while the rest were technically limited studies. Three-quarter of them had optimized images/ videos. Performing ultrasound QA in a busy ED is rewarding to all. It could gather momentum in POCUS utilization and allows continuous quality improvement in performing POCUS.