



An interview with Dr. Simon Elliott

At around one tenth of the price of their cart-based counterparts and with comparable image quality, point of care (POC) ultrasound systems can make a genuine difference to hospital working practices and patient care. Here, we talk to Consultant Radiologist, Simon Elliott, about how the SonoSite® 180PLUS hand-carried ultrasound system has transformed radiology at the Freeman Hospital, Newcastle.

"When we first acquired a portable ultrasound system from SonoSite, we estimated that the scanner would be able to perform around half of our portable ultrasound work in a busy teaching hospital environment," explains Dr. Elliott. "However this figure increased rapidly when we discovered the quality and versatility of the unit."

With the enhanced features of the SonoSite 180PLUS system, which included spectral Doppler, the vast majority of the hospital's portable ultrasound needs are now met by the system. Simon continues, "The only thing we really lacked previously was spectral Doppler capability, since on a daily basis we need to service a supra-regional renal and liver transplant service, along with several high dependency units. In addition, the scanner is used daily in the operating theatre and interventional radiology rooms for localization of kidneys for PCN, biliary dilatation and various fluid collections."

The true portability of the SonoSite 180PLUS system has transformed Freeman Hospital, freeing up sophisticated machines for the full studies that are really needed. "Before we had the SonoSite, we had to unplug one of our large cart-based machines and wheel it along the corridor, into the lift, inside the cubicle and round a bed. This meant making a specific booking and shutting down a busy list in the radiology department," explains Dr. Elliott.

"The SonoSite 180PLUS system has enabled us to use our time much more efficiently and means that we no longer have to cancel lists while we take the large cart-based machine to ITU or theatre."

The hospital's examination times have been substantially reduced and, as a result, overall efficiency has increased. "On average we carry out around half a dozen cases a day with the SonoSite, and while that may not sound like very much it can be a considerable amount of time, as three cases on ITU can take 40 minutes and theatre can easily take a couple of hours," comments Dr. Elliott.

Simon has found that the image quality of the fully digital, high-resolution broadband imaging in 2D, M-mode, color power Doppler compares very well with cart-based machines that cost ten times as much: "We are using it mainly for work outside the department and we have found the quality satisfactory in almost all cases. In fact, we were keen to check the reliability of the SonoSite when we first started using it and so we took a cart-based system to compare the images side-by-side. In around 30 comparisons, the SonoSite compared very well to the system that cost ten times as much. In particular, we were concerned about the measurement of the hepatic artery flow in the liver, but we found that we could definitely trust the SonoSite.

The advanced color Doppler features found on the SonoSite are particularly important for transplantation, as it is vital that there is a good blood supply from the arterial and venous supplies if the operation is to be successful. The color power Doppler on the upgraded 180PLUS system is important when needing to determine the direction of blood flow, particularly in the portal vein of the liver. I have also made several side-by-side comparisons of Doppler sensitivity and accuracy in liver transplant patients, and have found that in skilled hands, the 180PLUS system provides diagnostic B-mode and Doppler imaging

in critical care situations, such as suspected hepatic artery thrombosis."

The hospital is also starting up a new service using the SonoSite in a routine kidney outpatients clinic, meaning that patients no longer have to come to ultrasound to be scanned: "This is better for the patients who no longer have to wait around, it frees up time in the department and it means that the doctors have the information in front of them during the consultation. We are so convinced of the value of the system that we have bought another one for the anaesthetics department and we are now running a training course in association with SonoSite to train anaesthetists and intensivists to scan. Training is vital as a lot of people are concerned that anyone can buy a system and scan people and that is causing a lot of controversy."

Despite any misgivings concerning non-radiologists using the system, the benefits of having anaesthetists and other staff trained to use the system may prove extremely beneficial in the long run.

"Over half of our work is in intensive care, looking at transplant patients, pleural fluid and collapsed lung. By giving the anaesthetists information about what is going on in the chest, we can wean ITU patients off ventilators more quickly, freeing up beds for patients from anywhere in the region and potentially save tens of thousands of pounds."

