

Point of care ultrasound in general practice

by Alexandra Gauci

Ultrasound is one of the most commonly used diagnostic imaging techniques. In the past, like other imaging techniques, ultrasound was performed only by radiologists and even though, with time, the role was extended to radiographers, it still remained within the domain of the radiology department.¹ Nowadays however, its use is being adopted by an ever increasing variety of professionals.¹

Advances in ultrasound technology have resulted not only in better resolution of images but also in the production of smaller equipment for less cost.² Supported by the fact that ultrasound is non-invasive and produces immediate, real-time results, this has allowed diagnostic ultrasound to infiltrate into many specialties of medicine, changing the ways many diseases are diagnosed and managed.²⁻⁴ In fact various authors have labeled ultrasound scanners as the stethoscope of the future, replacing audio by visual data.⁵⁻⁷ Moreover some authors have also pointed out that sonography has changed the approach to diagnosis of disease from the interpretation of signs and symptoms to interpretation of sonographic signs.² Evidence shows that the use of ultrasound imaging is shifting from a domain of solely imaging specialists, which comprises radiologists and radiographers, to that of non-imaging physicians who are utilizing this tool to enhance their practice.^{1, 8-10}

With the development of primary care, health reforms and the reassignment of healthcare responsibilities to primary care, the clinics of family doctors are being equipped in a manner that enables them to expand their diagnostic services and cater for conditions which previously were attended to only in secondary care.^{2,10} There are many reasons which drive physicians to obtain ultrasound skills and invest in equipment. Apart from the restricted access to ultrasound imaging, the main driving force is the wish to improve patient services by creating a one stop service with a more efficient management.¹ However this does not mean that the presence of an ultrasound scanner in the practice completely eliminates the need for consultation with radiologists. The family physician is still under the obligation to know his limits of competence and consult or refer when necessary. The use of ultrasound as a tool for diagnosis does however affect the ways a family physician manages his patients.¹¹ Research has shown that the presence of an ultrasound scanner in practice does change the way a practitioner looks at acute and chronic diseases and can have a positive impact in case management outcomes.^{2,12}

Since family doctors are the point of contact of patients with health care, they are the gatekeepers to health services and therefore any clinical procedure they know or learn to do competently will be of benefit to their patients.^{9,13} Physicians use focused ultrasound examinations mainly to help them in their diagnoses, monitor, screen or to guide invasive clinical procedures.^{1,12} The ability to get quicker diagnostic information decreases unnecessary referrals to secondary care. This

may well be both cost-effective for the health system, since it avoids the more expensive inpatient management, as well as more convenient for patients who either get managed in house or else get more timely referrals when required.^{9,14} In addition to this, family doctors also benefit from the situation since apart from giving better services to patients, who in turn are more compliant, they enhance their technical abilities, are intellectually stimulated and more satisfied in their profession.^{7,9} In addition to the mentioned facts, focused imaging by physicians give informed diagnosis and therefore a safe and effective patient management.¹

The studies evaluating the family doctors' use of diagnostic ultrasound in general practice are very few and the variables they evaluate are different.^{10,11,14-16} Head-to-head comparison of their findings is therefore not possible. Generally speaking however, it emerges from the studies that both doctors and patients benefit from office based imaging.^{11,14} It has been shown that in family practice the four main areas where diagnostic ultrasound can be applied are obstetrics and gynecology, abdomen, cardiology and small parts.^{9,17} A number of studies have evaluated use, accuracy and teaching methods of obstetric and gynecological ultrasound in family practice and in general, positive conclusions in favour of family doctors have been reached.^{7,17-21} In a policy paper the American Academy of Family Physicians considers diagnostic ultrasound as a requirement for proper management of women's health. Abdominal ultrasound in general practice has been shown to be of value in the diagnosis of aortic aneurysm, gall stones, abdominal masses, renal pathology and ascites.^{9,23} Referrals to secondary care were also shown to decrease as a result of abdominal ultrasound done by family doctors.²³ Other areas benefiting from such use include evaluation of superficial masses, thyroid, prostate, breast and musculoskeletal conditions.^{8,9,24}

The issue of suitability of diagnostic ultrasound in the hands of family doctors has been many times a topic for debate.^{5,25,26} One of the main concerns was the adequacy of training since no legal restrictions to the use of ultrasound by physicians exist.^{9,25,27} In itself ultrasound is harmless to patients if used appropriately, however apart from the fact that some practitioners do not adhere to safety guidelines, patients may be harmed by misinterpretation of ultrasound images resulting in excess false positives and false negatives.^{8,27} To address this concern, the Royal College of General Practitioners and Royal College of Radiologists, in a joint effort, established a set of standards for ultrasound training for general practitioners. Studies evaluating the competency of family doctors in performing diagnostic ultrasound have shown that training improved performance.²¹

However although getting training is of utmost importance, this is not enough. There is a general agreement that competency must be maintained.¹ The key issue is that ultrasound imaging requires both expertise and experience.⁸

References

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