

Cardiac bedside ultrasound: is the future now?

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The paper by Cogliati and coll.¹ is particularly topical as it focuses on an increasingly practiced and appreciated approach to patients, especially in the field of internal medicine and emergency medicine, where the need for a rapid diagnostic orientation and a consequent rapid therapeutic intervention is more urgent. As pointed out in the paper, the availability of portable or pocket ultrasound technology means that the bedside echography can actually become a powerful tool to be integrated with the traditional clinical approach based on history and physical examination.² The possibilities offered by ultrasound echocardiography in this case are numerous.³ The evaluation of cardiac contractility, volumes, wall thickness, the ability to highlight a pericardial effusion and the evaluation of collapsibility of the inferior vena cava allow to orient very quickly towards heart failure, pulmonary thromboembolism, or cardiac tamponade and to check whether the patient is congested or empty. Since time to diagnosis is key to improve prognosis, it is clear that this tool can allow a rapid application of the most appropriate therapies with a significant improvement in prognosis.⁴ Given the great complexity of patients now treated in the departments of Internal Medicine, often suffering from multiple diseases, an integrated approach with clinical examination and bedside echography is potentially able to quickly dissipate a series of questions that, in the presence of chronic or past diseases, would hardly be dis-

pelled through clinical examination only.⁵ Along with these undeniable advantages of a young and exciting procedure, I must also warn against excessive leaps forward. Sometimes one gets the impression that especially younger physicians base their approach almost exclusively on the ultrasound to formulate diagnostic hypotheses and implement the related therapies. Cogliati and coll.¹ highlight how the ultrasound techniques at the bedside are part of an approach defined as *integrated*. This means that the echocardiographic and the ultrasound examination should still be led by a traditional clinical approach based on a thorough history and a thorough physical examination. The latter is itself capable, in a significant percentage of patients, to identify one or more diagnostic hypotheses. Another significant problem concerns the ability of the physician to make a reliable ultrasound examination at the bedside. While a basic echocardiographic and ultrasound approach at the bedside does not require an extraordinary preparation and a long training, it is also true that those who approach this method, as well as having a clinical adequate preparation, must also have a clear awareness of the pitfalls concerning this type of approach.⁶ This means that there should be no hesitation to require a more exhaustive and complete examination if, after the bedside examination, there are still doubts concerning those issues that this approach has failed answer (segmental cardiac contractility, dubious valvular defects, suspected aortic dissection, *etc.*). Operators, especially young doctors who enthusiastically embrace this method, are required to have the humility necessary to know their limits and the limitations concerning the method that is being applied. Beyond these limits and the awareness required to medical users, this is certainly the future of medicine.⁷ The pocket-sized ultrasound is certainly destined to become the new stethoscope. However, it cannot completely substitute the traditional semeiology which must remain the fundamental heritage of the medical art and is, by itself, already able to guide clinicians.⁸

Even in times of scarce resources for the National Health System, the costs of this ultrasound, especially the pocket-sized one, is modest if compared to the costs of many other sophisticated pieces of equipment and is therefore more easily accessible, in con-

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sideration of its potential widespread use. The main problem concerns training.⁹ Even if there are schools and bedside ultrasound sonography courses, however within the university education, both basic and specialized, as well as in the various clinical and pathological textbooks used in its courses, this very important chapter is often omitted or neglected. This is the great challenge that those training future doctors should be able to accommodate. At the moment in our national health system non-university hospitals seem to be ahead of university clinics in the use of this technique. This is also why I think it is high time that, in a manner similar to what happens in the other major industrialized countries, non-university hospitals can really become an integral part of the training of future doctors.¹⁰

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