

The Stethoscope has Passed Away. Long Live Handheld Echocardiography!

To the Director

I have read with great interest the editorial comment by Miguel A. García on “the death of the stethoscope...” (1) I was impressed by the critical, intelligent and accurate approach of the distinguished invited reviewer, who honors our Journal.

But I also write these lines to express some degree of dissent. Personally, in more than 30 years as cardiologist, I have been especially interested by cardiovascular images, which I consider extremely valuable for the clinical cardiologist. But I can't image doing a ward round or seeing patients in the office without a stethoscope. I believe the stethoscope will still continue to be useful in the future. Relevant personalities of Cardiology, as Valentín Fuster are of the same opinion, (2), as well as experts in our setting, as commented by the editor Jorge Thierer (with his usual clarity) and others on the website page of our Society. (3-4)

In addition to being an icon of Medicine in general, and particularly of Cardiology, the stethoscope is a very useful tool for cardiovascular diagnosis. It is true that, compared with echocardiography, it has lost transcendence in the diagnosis of valve diseases. From the criticism to young cardiologists for their lack of interest in cardiac auscultation (they clearly prefer echocardiography to semiology), we have now turned to the extreme of declaring that the stethoscope is a museum piece.

However, the stethoscope is the key tool that generates echocardiography and also checks its results when they are inconsistent with the clinical condition.

Obviously, when comparing their diagnostic ability, the primitive stethoscope is very inferior to handheld echocardiography. But the same could be argued of the “ultrasound stethoscope” compared with its elder siblings, the 3D transesophageal echo, and this in turn with magnetic resonance imaging.

The great advantages of the stethoscope are its simplicity, portability, availability, reliability (it does not break or run out of battery), low cost (no small issue in our setting) and the test of time (useful for 200 years).

Moreover, some weak points of echocardiography may become weaker with handheld echocardiography: thus, the operator's quality, training and experience, added to the lack of recordings, forcing us to trust in the impression of who has performed it, are facts to consider. And if we must resort to conventional echocardiography to confirm the data of handheld echocardiography, we should contemplate the added costs.

If we are assisting to the death of the stethoscope, nothing else remains but to dedicate, in its bicentennial anniversary, our most sincere tribute to a diagnostic tool of enormous value for the physician, and especially for the cardiologist. But I think that the stethoscope has not passed away and that the images of handheld

echocardiography should complement and not replace the information derived from heart auscultation. It is our responsibility as mature cardiologists, to continue training the younger generations to be enthusiastic in the use of the stethoscope, defending it when the time comes, as we do it today.

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Authors' reply

I wish to thank Dr. Marcelo Trivi for his comments on the editorial I have recently had the honor to write for the prestigious Argentine Journal of Cardiology. (1) This commentary states opinions which I subscribe and 100% endorse. I agree that “the stethoscope is the icon of Medicine and cardiology that identifies us”, I agree that “it has lost transcendence in diagnosis compared to echocardiography”, I agree with “its diagnostic ability is very inferior to that of echocardiography”, I agree “with paying tribute to the stethoscope” for what it has meant to the cardiologist. However, the topic is more complex, technology is moving us at great speed to unimaginable grounds, where we must use new criteria of action and resort to our imagination to overcome old concepts which become completely outdated before these surprising scenarios. A classic in the history of Medicine is the rejection of new advances; with this controversy, we are certainly reliving the history.

The acquisition of new knowledge cannot be based on passion or feelings, but on the results obtained with scientific methods, that is, in the rationale of tests. As I commented in my editorial, the information based on scientific accuracy, stating that the stethoscope fails to obtain adequate data in more than 50% of confirmed diseases is absolutely spectacular, much more than we had assumed! If I may say so, this percentage error is simply outrageous. Whether we like it or not, it is a reality based on the analysis of high-level publications. (2-5)

That eminent cardiologists, as manifested by Dr. Trivi, still advocate auscultation instead of handheld echocardiography, indicates, in my opinion, that they are moved by passion and not scientific knowledge. What they have to do in order to convince us is very easy: publish studies showing the superiority of the classic auscultation method compared with the extended

assessment with handheld echocardiography. Use the scientific method (as handheld echocardiography); the rest are simply opinions, obviously important depending on who expresses them, but in the end just opinions.

I have been practicing cardiology for over 35 years, systematically examining my patients, as my fellows know very well, before performing an echocardiography. I consider myself a descendant of the best school of cardiology examination, as the INC school of Mexico, where my teachers come from; I humbly think that I examine my patients very well. That is why I routinely confirm, day after day, what is appallingly reported in numerous studies (studies that do not express opinions but employ the scientific method!): auscultation fails, confounds us, and in addition, in alarming numbers. Undoubtedly, its use is justified as there were no other alternatives at the patient's bedside. During a long period of almost 200 years, the stethoscope has been our main powerful tool and that is why we love it with such passion, but as the famous phrase attributed to Erasmus of Rotterdam says: "In the kingdom of the blind, the one-eyed is king". It is time to look with all our power of vision. I have no doubt that the change is here and that the old king is agonizing.

Handheld echocardiography will be a reality when its price becomes reasonably low to compete with the stethoscope. This seems to be the aim of current technological development. I do not know how long it will take for its incorporation as routine equipment, but when this moment arrives (probably sooner than we think) I am convinced that using solely the stethoscope will be considered malpractice. That is the reason why many schools of Medicine are starting to permanently incorporate it in their educational programs.

The near future, which is already landing, is extended cardiac assessment (classical evaluation aided by a handheld echocardiography study), where handheld echocardiography plays a fundamental role, reducing diagnostic errors, inadequate hospitalizations and expenses generated by a poor evaluation of the patient. Nevertheless, we will not be the greatest beneficiaries of this practice, but our patients, who will profit from the reduction of errors, sometimes of extraordinary diagnostic and prognostic importance. I have no doubt that these patients, core of our reason of being, will be grateful.

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