

Reply

The role of echocardiography in diagnosing carditis in the setting of acute rheumatic fever

Dear Sir,

We thank John Lawrenson and his colleagues for the interest shown in our article.¹ All of their suggestions are well taken, except for their comment on our proposed system for scoring. Based on our experience of treating more than 1000 cases of acute rheumatic fever in the last few years, we continue to press for the need for such a scoring system to permit early and accurate echocardiographic diagnosis of carditis and subclinical valvitis. If, as they suggest, significant mitral regurgitation in isolation, with a score of 2 rather than the minimum of 6 as we recommended, was used as the criterion, we submit this would result in the over-diagnosis of carditis. In the past, many patients without rheumatic disease, but with significant mitral regurgitation, such as those with aortoarteritis, dilated cardiomyopathy, and prolapsing myxomatous mitral valves, were wrongly diagnosed as carditis in the setting of fever, arthralgia, a cardiac murmur on auscultation, a raised erythrocyte sedimentation rate, and a positive test for C-reactive protein. Such patients would have one major, and three minor, criteria according to the Jones' approach, but echocardiographic interrogation would reveal thin and redundant myxomatous leaflets permitting prolapse of the third grade. Such findings using our system would give a score of 4 (Fig. 1a and b). The illustrated patient, using our system, would not be subjected to unnecessary prophylaxis with penicillin. Compare this situation to a 12 year-old girl with acute rheumatic fever with no auscultatory murmur, in whom interrogation in the apical four chamber view (Fig. 2a) showed trivial mitral regurgitation, pericardial effusion, prolapse of the mitral valve, thickened mitral valvar leaflets, cordal tear, and beaded appearance shown on the zoomed image in the short axis (Fig. 2b; see also a video-clip available on-line at www.journals.cambridge.org/jid_CTY). All these features score at 2 in our system, giving an overall score of 10, thus confirming the diagnosis of acute rheumatic fever. This second patient definitely requires prophylaxis.

Hence, we submit that our proposed system for scoring was designed on the basis of our past experience. Its efficacy was tested in our reported prospective double-blinded study, which showed clearly that it permitted not only the precise diagnosis of carditis, but also the diagnosis of subclinical carditis in patients with acute rheumatic fever. Lawrenson and his colleagues suggest correctly that the system can be used appropriately for detection of subclinical rheumatic cardiac disease in populations known to be at high risk of rheumatic fever. In this respect, we have already begun the third phase of our project to detect, manage, and

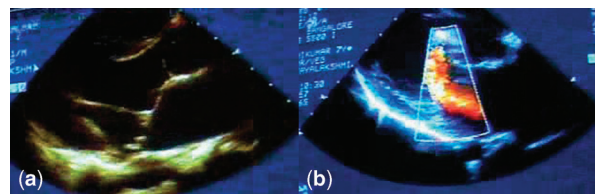


Figure 1.

Panel a shows a myxomatous mitral valve prolapsing at the third grade. Panel b shows regurgitation across the valve. Using our proposed system for scoring, the prolapse and regurgitation would each receive 2 points, giving a total score of 4. The patient has non-rheumatic mitral regurgitation.

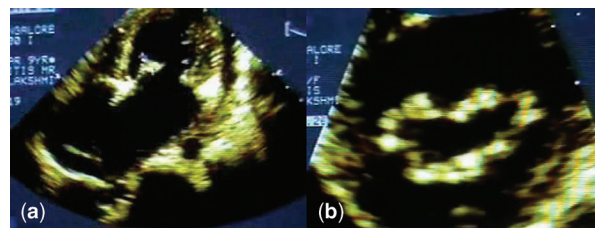


Figure 2.

These images are from a 12 year old girl of acute rheumatic fever. Panel a, taken in the apical four chamber view shows a pericardial effusion, prolapse of the valvar leaflets, trivial regurgitation across the valve, thickened leaflets, and a cordal tear. Panel b, a zoomed picture, shows the beaded appearance of the leaflets of the mitral valve in the short axis. Each of these features garners 2 points in our system, giving a total score of 10.

prevent rheumatic fever and control rheumatic cardiac disease in the state of Karnataka, India. Over the last 16 years, from 1992 through 2008, we have admitted 13,382 patients with rheumatic heart disease to our Institute, accounting for one-tenth of total admissions. We have performed surgical procedures on the cardiac valves of more than 2000 of these patients, and performed over 10,000 balloon valvoplasties. Reparative surgical repairs on the mitral valve in more than 100 cases have shown excellent results, thus avoiding the complications of anticoagulation. In total, the equivalent of more than 10 million United States dollars has been spent on the management of rheumatic cardiac disease at our institute alone. The cost of suffering, human misery, and death is unfathomable and incalculable. Hence, we hope that more widespread use of our proposed system of scoring during mass screening of school children in

endemic areas, and at high risk of rheumatic fever, will detect in timely fashion those with acute rheumatic fever. In this way, we hope to detect a greater proportion of those with subclinical disease, thus capturing more children in the net of secondary prophylaxis.

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Reference

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