Undoubtedly, a significant number of patients who never had endocarditis are treated as though they had. On the other hand, great mischief can be done by failure to adequately treat infectious endocarditis.

On page 321 of this issue, Flugelman et al. [1] reports 3 cases of proven brucellosis in patients all of whom had organic heart disease. All were treated for endocarditis, although vegetations were not observed in any of them. One of the patients had previously undergone aortic valve replacement for aortic regurgitation. Blood cultures grew *Brucella melitensis* but transthoracic echocardiography failed to find vegetation, either on the prosthetic Bjork-Shiley aortic device or on the native mitral valve. Echocardiography had not come into general use when the two other patients with brucellosis, one of whom had congenital aortic stenosis and the other aortic regurgitation secondary to Marfan’s syndrome were treated.

Brucella endocarditis is an uncommon disease. In all 3 patients, the history indicated the high probability of infection with *B. melitensis* which subsequently grew on blood culture, leading to the presumptive diagnosis of brucella endocarditis and a decision to prescribe a treatment regimen suited to endocarditis rather than to septicemia without cardiac involvement. Examination by echo Doppler cardiography in the first case showed normal function of the aortic prosthesis and failed to detect vegetation. It must however be recalled that transthoracic echocardiography is a highly insensitive means of detecting vegetation in patients with a prosthetic valve. Transesophageal echocardiography has been found to be far more effective for this application.

The authors have provided a service by reminding us that endocarditis may complicate brucellosis and that failure to treat brucella endocarditis may have serious consequences and indeed prove fatal. On the other hand, one hopes that with the development of higher-resolution echocardiography and the transesophageal technique, recourse to a presumptive diagnosis will become less common, sparing the patient a more prolonged, more expensive and more hazardous treatment course. Nevertheless, there will remain patients in whom there is a strong clinical suspicion of brucella endocarditis in whom even transesophageal echocardiography fails to reveal vegetations. While each of such cases will be judged on its own merits, the advice of Flugelman et al. [1] to accord the patient the benefit of the doubt and treat for endocarditis appears sound.

Treatment for the Presumptive Diagnosis of Endocarditis. The opportunity to treat endocarditis in patients from whom the offending organism has been identified and its sensitivity to antibiotics clearly characterized, constitutes one of the more rewarding experiences in the practice of medicine. On the other hand, the diagnosis is often presumptive owing to failure, for
a variety of reasons such as the prior administration of antibiotics, to isolate the causative organism, or because of difficulty in deciding between bacteremia and endocarditis. In the case of sub-acute infectious endocarditis, the diagnosis often depends upon a syndrome comprising septicemia, evidence of valvular or congenital heart disease, embolic phenomena and manifestations of dysfunction of the immune system.

In acute endocarditis pre-existing structural heart disease may or may not be present so that the diagnosis depends in part on the recognition or the new cardiac murmur. The difficulty in such cases often turns around the question of how certain one can be that the murmur is indeed new. The murmur may be new in the patient or merely new to the physician. Thus, the patient may not have undergone a prior medical examination, or that examination may have been a cursory one, such as for induction into the Army or permission to indulge in athletic activity. The patient may have undergone previous medical evaluation in an environment such as a casualty department or an intensive care unit; these environments are not conducive to effective cardiac auscultation. Yet, the diagnosis of endocarditis not infrequently turns upon the opinion that the patient has a new murmur. Likewise, one is frequently faced with a patient who has preexisting heart disease manifest by one or more cardiac murmurs, fever and a positive blood culture. In these instances, it is usually difficult, and often impossible to determine whether the cardiac murmur results from relatively recent infection of the endocardium, or is merely a manifestation of long established heart disease without infection. This clinical presentation leads to echocardiography carried out with the aim of detecting endocardial vegetation which would establish the correct diagnosis. When serial echo-cardiography fails to reveal the suspected vegetation and there are no signs that the cardiac lesion is progressing, the clinician is reluctantly forced to make an empirical decision whether to treat the patient for septicemia for a relatively brief interval with antibiotics presuming the patient does not have endocarditis, or to submit the patient to the longer treatment course necessary for infectious endocarditis.

Reference