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Discussion

DR C. OAKLEY: That was an interesting presentation. First, is the incidence of autonomic denervation in chronic chagasic heart muscle disease sufficiently high for it to be used in the differential diagnosis between Chagas' myocarditis and chronic congestive cardiomyopathy?

DR D. AMORIM: I can use the autonomic tests only in those patients who are asymptomatic or who have minor symptoms. I cannot use the tests with strict confidence in patients who are in heart failure.

DR OAKLEY: It would not be necessary to do a Valsalva manoeuvre, but some simple procedure such as giving atropine.

DR AMORIM: Even something as simple as giving atropine, or reducing blood pressure with amyl nitrite, or increasing it with phenylephrine can be misleading in patients who are in heart failure because of the autonomic impairment of both components, regardless of the aetiology of that heart failure.

DR OAKLEY: They will show a tachycardia – at least some increase in heart rate, although much less than a normal person, which might mean only partial denervation. It might not be a good test.

DR AMORIM: If it is going to be of any use, it will be in those pre-symptomatic or asymptomatic patients.

DR OAKLEY: Secondly, am I right in understanding that in some, perhaps all the chronic Chagas' disease patients at death, in the absence of an apical aneurysm, the histopathology might not enable differentiation to be made between congestive cardiomyopathy and this known post-infective Chagas' heart disease?

DR AMORIM: It is my impression that if there is no definite apical aneurysm, it is difficult to make that differentiation.

DR OAKLEY: This is particularly interesting because some of the patients have an apical aneurysm or have been seen in the acute phase, so it is certain that they have Chagas' disease. In relation to our interest in a possible viral cause of congestive cardiomyopathy, we need not be surprised to find no evidence of a chronic myocarditis.

DR W. BECK: I hoped that you would say the opposite, that Chagas' disease would be a model for the post-inflammatory type of cardiomyopathy. When we look at these hearts histologically, there is an extensive degree of post-inflammatory fibrosis.

DR OAKLEY: There is a variable amount of interstitial fibrosis in chronic congestive cardiomyopathy, is there not?

DR BECK: In congestive cardiomyopathy it is my impression that the real, permanent unalterable fibrosis *per se* is uncommon. It is mostly non-specific oedema. The amount of fibrosis in congestive cardiomyopathy is much less than in a post-infective myocarditis or Chagas' disease.

DR OAKLEY: Dr Amorim seemed to agree that there might not be any difference. Does he think that there is always more interstitial fibrosis, if not inflammatory cell infiltration, in chronic chagasic disease than in primary congestive cardiomyopathy?

DR AMORIM: There is more interstitial fibrosis rather than myocarditis in the cardiac Chagas' patients.

DR OAKLEY: Can they always be distinguished? I do not think that they can.

DR AMORIM: Chronic Chagas' patients are not what we would call 'myocarditis' patients. We are dealing with a dysfunction of heart muscle several years after a known infection. We should continue to observe these patients throughout their lives to find out what is happening when they change from an acute myocarditis to a heart failure. That was the meaning of my experimental model.

DR H.-D. BOLTE: From what Dr Amorim told us when he visited us in Munich, I understood that there are some people with congestive cardiomyopathy who have serological evidence of Chagas' heart disease and others who have not. Are there differences between these groups of patients which have been observed and recorded?

DR AMORIM: Perhaps I did not make myself clear in Munich. If a patient has a positive serology, he is definitely a Chagas' heart patient. Is he in heart failure because of an infection or because of congestive cardiomyopathy? It is difficult to make that differentiation. Serology will not help us in that respect; but a patient with a negative serology and congestive cardiomyopathy would be labelled as congestive cardiomyopathy, if there were no demonstrable other cause.

DR OAKLEY: Given two patients with the haemodynamic abnormality which could be called dilated cardiomyopathy, one has positive serology, the other negative serology. Is there any difference in those two hearts at any level including light microscopy?

DR AMORIM: It would be very difficult to make a differential diagnosis. Even when there is positive serology it could be congestive cardiomyopathy.

DR OAKLEY: You are admitting that there may be no distinguishing features between chronic chagasic disease and primary congestive cardiomyopathy as it is seen in a non-Chagas area?

DR AMORIM: Yes, except when there is an apical aneurysm.

DR BECK: What about complete heart block?

DR OAKLEY: That is a very rare occurrence, although it can happen in our disease. It is not so very common in Chagas' disease, is it? I know that it is much higher than in our disease, but it need not be present. In fact, a considerable number of patients showed normal EGCs – not so high in Rosenbaum's experience as in the others'.

DR AMORIM: Rosenbaum has quite different results from those of Dias, for instance. The latter carried out his study in a limited population whereas Rosenbaum's study was done in Buenos Aires. How many of those patients going to a specialized hospital are early Chagas' heart patients and not just Chagas patients?

DR OAKLEY: Dr Amorim has described problems of recognition in his own country which have great relevance to our problems of recognition and differentiation here.