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Insidious rheumatic carditis and athletic activities

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ONE IS often unable to elicit any past history of definite acute rheumatic fever, or one suggesting streptococcal infection, from a patient with established rheumatic valvular heart disease. This failure to elicit a positive past history may be attributed, understandably, to the inherent defects of retrospective analysis and the fallibility of human memory. It is not sufficiently appreciated in general medical circles that acute rheumatic carditis may be present not only with little or no symptoms, but moreover in the presence of full physical activity and apparent good health. Though the insidiousness of acute rheumatic carditis in children is well documented, its co-existence with no impairment of athletic activities in a young adult does not appear to have been described before.

Case report

A young Maltese male of average build, aged 20 years old, was brought for a check-up by his mother as she felt he had been overstraining himself physically during the previous 2 months.

He had no specific complaints but admitted to mild general tiredness. There were no aches or pains. He had suffered from a mild afebrile sore throat a few weeks before. There was no past history of rheumatic fever. He attributed his mild tiredness to excessive physical activity. He had a keen interest in sport and for the past few months had been playing football and basketball regularly twice weekly. His physical activities had been particularly strenuous during the previous week as in addition

to athletics, he had been dancing nightly till 03.00 hours because of the carnival festivities. The day before, he had participated in a game of basketball and had scored 20 points; on the previous day to this he had played a full game of football as centre forward. He had also started training for cross country running.

On examination, the pulse was 80/min, with occasional missed beats. The jugular venous pulse and pressure were normal. The cardiac apex was not displaced and was of normal character. No murmurs were present at the apex or over the base of the heart. BP 120/80 mmHg. There were no other abnormalities on general examination.

In order to reassure the patient's mother and at the same time to establish the innocence of the cardiac irregularity, an electrocardiogram was carried out the next day (11 March 1967). The ECG, to one's surprise, showed partial AV block of the Wenckebach type; the shortest PR interval being 0.22 sec, increasing in the next beat to 0.26 sec and followed by ventricular asystole on the third beat, with the PR interval returning to 0.22 sec in the next beat. There were no obvious vector abnormalities nor any evidence of ventricular hypertrophy. The erythrocyte sedimentation rate was 90 mm/hr. The patient was admitted to hospital and started on a 10-day course of crystalline penicillin followed by Penadur LA 1,200,000 units i.m. once every 3 weeks. He was also started on acetylsalicylic acid 15 g orally every 4 hr, with the omission of one night dose. Investigations included: Hb 12.7 g/100 ml;

WBC 10,000/mm³ with a normal differential; anti-streptolysin O titre 500 units/ml; C reactive protein positive. X-ray of the chest was normal. The ECG tracing 2 weeks later showed disappearance of the Wenckebach phenomenon and the PR interval was now constant at 0.16 sec. His temperature throughout this period was normal. During his stay in hospital the patient had no pain or any other complaints. The patient was discharged home on 22 April 1967 to continue convalescence. His sedimentation rate, on discharge, was 4 mm/hr.

The patient has continued to attend the outpatient clinic regularly. There is at present evidence of mild mitral incompetence as shown by a Grade 2 pansystolic murmur at the apex conducted to the axilla.

Discussion

It is common medical experience that a considerable number of patients with chronic valvular heart disease do not give an antecedent history of rheumatic fever or active rheumatism. Thus 40% of patients with mitral stenosis do not have a past history of rheumatic fever, subacute rheumatism or chorea (Wood, 1956). Of 588 rheumatic children who were analysed in detail by Ash in 1948, 15% presented with isolated rheumatic carditis. It has been calculated that about one-quarter of acute cases have evidence of preexisting disease when first seen (Joint Report, 1955).

The evidence of a progressively lengthening PR interval with dropped ventricular beats (Wenckebach's phenomenon) in this patient was the important clue leading to the immediate diagnosis of carditis. Though a prolonged PR interval is one of the earliest signs of active carditis, it cannot be used as a prognostic index of the severity of the carditis (Feinstein & di Massa, 1959). The superficial clinical resemblance to the occasional innocent extrasystole in an anxious young adult can easily lead to a dangerous misdiagnosis unless an electrocardiogram be taken to clarify the cardiac arrhythmia. The isolated finding of a prolonged PR interval in a rheumatic patient is generally regarded as evidence of a rheumatic carditis, while a return of the PR interval to normal is conversely considered evidence of quiescence of rheumatic activity. Taran & Szilagy (1951) stress that the return of the AV conduction time to normal does not always mean cessation of rheumatic activity. Long-term studies of their patients showed that some patients remain permanently with a prolonged AV conduction time. Other causes of a prolonged AV conduction time, of course, must be excluded. Thus a prolonged PR interval is found in 10% of patients with atrial septal defects. One interesting new addition to the list of causes of a prolonged PR interval is its com-

mon presence in males with a 47 XYY chromosome complement (Price, 1968).

Prolongation of the QT interval or duration of electrical systole as evidence of carditis is of controversial significance. Some authorities (Abrahams, 1949) regard it as a sensitive index of carditis, while others (Pader & Elster, 1959) deny its value.

The initial ECG abnormality, high sedimentation rate, positive C-reactive protein test, high ASO titre and the response to salicylates clinched the diagnosis in favour of acute rheumatic carditis in this patient. It is nowadays customary to base the diagnosis of acute rheumatic activity on the criteria first enunciated by Jones (1944) and later modified by the American Heart Association (1955) and the 'Ad Hoc' Committee of the American Heart Association (1965). It is logical to put more emphasis on supporting evidence of recent streptococcal infection, as usually shown by a high ASO titre as has been stressed by Stollermann and his colleagues (1956).

It is not sufficiently appreciated that acute rheumatic fever may occur in adults. Wilson & Lim (1957) found that less than 3% of their rheumatic patients showed a recurrence of their carditis after the age of 20. The incidence of acute rheumatic fever in the over-30 age group with previous rheumatic valve damage was found by Wee & Goodwin (1966) to be 2.5% in their patients. However, only two of their patients had no past history of one or more attacks of rheumatic fever resulting in valvular damage. Their study supported the theory that subclinical rheumatic activity may be more frequent in adults than usually suspected. Studies on military recruits in the Second World War have noted the mild clinical symptomatology found with an active underlying rheumatic process (Rosenberg, 1946; Friedberg, 1959). The dramatic association of asymptomatic rheumatic carditis with such a degree of unimpaired strenuous physical activity as illustrated by this patient, however, does not seem to have been described before in adults.

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Sarcoma at the site of previous trauma in Paget's disease

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MCKENNA *et al.* (1964) in their review of osteogenic sarcoma in Paget's disease referred to four cases in the literature in which there was good evidence of previous trauma at the ultimate site of neoplastic change. The following case report describes a similar coincidence.

Case report

A 61-year-old man attended hospital in 1952 complaining of pain in the left shoulder following a fall a few days previously. No bony injury was found, but the changes of Paget's disease were noted in the left humerus and scapula. His symptoms settled without any specific treatment (Fig. 1).

In 1956 he fell down stairs and suffered a closed fracture of the surgical neck of the left humerus (Fig. 2). This was treated by a plaster of Paris U-slab and sling, and it healed solidly with some overriding (Fig. 3); 3 months later he was back at work as a carpenter. Over the next 10 years he was seen occasionally with backache due to his progressing Paget's disease and was also treated for moderate high-output cardiac failure.

In November 1967 he attended, complaining of increasing pain and swelling of the left shoulder.

On examination he was emaciated, and had a gross dorsal kyphosis, enlargement of the head and bowing of his tibiae. The left shoulder was swollen,

red, warm and tender, and had no passive or active range of movement. The radiological appearance of the shoulder was difficult to interpret due to the gross change of Paget's disease, but there was a suspicion of erosion of the lateral cortex of the head of the humerus.

Biopsy of the shoulder was performed and showed the whole region of the deltoid muscle to be invaded by a soft, friable grey tumour. Treatment in this old and weak man was limited to strong analgesia. His condition deteriorated rapidly and he died on 14 December 1967, 1 month after his presentation at hospital.

Necropsy

The presence of widespread, gross osteitis deformans was confirmed, and the surgical neck of the humerus was found to be fractured at the lower border of the tumour (Fig. 4). The tumour had extended into the superior scapular region, but no remote metastases were found. The parathyroid glands appeared grossly normal, but histologically showed predominance of chief cell types, although occasional oxyntic cells were present, and loss of fat.

Sections of the tumour revealed a markedly anaplastic lesion, with little matrix formation, the best defined of which was cartilaginous. Wide areas