PERICARDITIS COMPLICATING RHEUMATOID ARTHRITIS

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The frequent occurrence of adhesive pericarditis in patients with rheumatoid arthritis has been recognized in pathological studies (Bayles, 1943; Graef, Hickey, Altman, and Rosenthal, 1948). In a study of autopsy material, Sokoloff (1953) found evidence of healed idiopathic pericarditis to be seventeen times more common among patients with rheumatoid arthritis than among other patients. Clinically, however, this condition is observed much less frequently; indeed Wood (1952) makes no reference to rheumatoid pericarditis in his textbook of cardiology.

In this communication we report three non-fatal cases of arthritis of the rheumatoid type associated with pericarditis, in two of whom L.E. cells were found in the peripheral blood.

Case Reports

Case 1, a decorator, aged 53, was admitted to hospital on 3.10.54 complaining of retrosternal pain of 4 hrs' duration. The pain, which had started suddenly, radiated to the left axilla, was accompanied by severe dyspnoea, and was intensified by breathing. Morphine sulphate gr. $\frac{1}{8}$ relieved the severe pain, but a residual retrosternal aching persisted for the next 36 hrs. In July, 1954, he had experienced a similar, but milder, attack of pain and had been treated by his own doctor for myocardial infarction.

Previous History.—At the age of 50 he had developed a progressive polyarthritis which had caused him to give up active work a few months before admission.

Examination.—He was in considerable pain, orthopnoeic, pale, sweating, and febrile (temperature 102·2° F.), blood pressure 115/80, pulse 100 and regular, apex beat in fifth left interspace 3 in. from the mid-line, heart sounds normal. Tender, soft tissue thickening of the small joints of the hands and feet with vasospasm and

excessive sweating of the fingers and toes were present (Fig. 1). Typical rheumatoid nodules were visible over both elbows and there were bilateral effusions in the knees.

Fig. 1.—Radiograph of hand (Case 1) showing rheumatoid condition of small bones.

The following day pericardial friction became audible over the whole praecordium and during the succeeding

48 hrs the cardiac dullness extended beyond the apex beat. The blood pressure fell to 90/60 and the generalized lymphadenopathy appeared.

Laboratory Investigations.—Haemoglobin 67 per cent. (Haldane) 9.9 g. per 100 ml.; Colour Index 0.87; White Blood Count 22,000 per c.mm. (80 per cent. polymorphs). Erythrocyte Sedimentation Rate 100 mm./hr (Westergren).

A mid-stream specimen of urine contained a trace of albumin and showed microscopic haematuria, but remained sterile on culture.

Serum proteins 7.25 g. per 100 ml. (albumin 3.5 g., globulin 3.4 g.), electrophoresis showed increased α and γ fractions. The sheep cell agglutination test (Rose, Ragan, Pearce, and Lipman, 1948; modified by Ball, 1950) was positive, and L.E. cells were found in the peripheral blood in significant numbers.

Serial electrocardiograms showed flattened T-waves in all leads. There was no evidence of recent myocardial infarction.

Radiography of the chest (Fig. 2) revealed a globular cardiac shadow with acute cardiophrenic angles, suggestive of a pericardial effusion.

Fig. 2.—Chest radiograph on admission (Case 1).

Progress.—Treatment consisted of rest in bed, full doses of calcium aspirin, oral iron, and local splintage of the most severely affected joints. The patient was discharged from hospital one month later, much improved, but with the pericardial rub still clearly audible; 8 months later he was still well. Examination of the peripheral blood for L.E. cells was then negative, and radiography of the chest showed an improvement (Fig. 3).

Fig. 3.—Chest radiograph after 10 months (Case 1).

Case 2, a housewife, aged 61, was admitted to hospital on 21.10.54; 5 days before she had suddenly developed severe retrosternal pain, made worse by breathing, which had persisted for 3 days.

Previous History.—In 1939, after septicaemia complicated by a lung abscess and a renal carbuncle necessitating nephrectomy, she had started to suffer from chronic rheumatoid arthritis. At the time of her latest admission to hospital she was considerably disabled by arthritis.

Examination.—She was pale, pulse 100 and regular, temperature 98° F., blood pressure 115/60. Severe destructive rheumatoid arthritis involving hands, elbows, knees, and feet.

Pericardial friction was audible down the left border of the sternum, and at the apex of the right lung signs of cavitation could be elicited.

A few small, soft lymph glands could be felt in the neck and axillae and the tip of the spleen was easily palpable.

Laboratory Investigations.—Haemoglobin 44 per cent. (Haldane) 6.5 g. per 100 ml.; Colour Index 0.71; White Blood Count 9,000 per c.mm. with normal differential count. Erythrocyte Sedimentation Rate 40 mm./hr (Westergren).

A catheter specimen of urine was normal on microscopy and remained sterile on culture.

Serum proteins 6.9 g. per 100 ml. (albumin 2.6 g., globulin 4.3 g.), electrophoresis showed an increase in all the globulin fractions. L.E. cells were found in significant numbers in the peripheral blood.

An electrocardiogram showed the typical early changes of pericarditis and elevation of the S.T. segment

Fig. 4.—Electrocardiograph on admission (Case 2).

with retention of its normal concavity in all leads (Fig. 4).

Radiography of the chest confirmed the presence of a cavity with much fibrosis at the eighth apex.

Repeated examination and cultures of the sputum for tubercle bacilli were negative.

Progress.—With rest in bed, full doses of calcium aspirin, and intravenous iron therapy, her condition steadily improved. When she was seen as an outpatient 6 weeks later her haemoglobin had risen to 96 per cent. (Haldane), and the erythrocyte sedimentation rate was 7 mm./hr, but L.E. cells could still be found in the peripheral blood. At her last attendance in June, 1955, she was still well and L.E. cells could no longer be found.

Case 3, a housewife, aged 63, was admitted to hospital on 6.5.54 with severe pain in the left parasternal region, of sudden onset 3 days before, worse on breathing, and accompanied by vomiting.

Previous History.—Radiotherapy had been given for carcinoma of the uterus 13 years previously and shortly afterwards had developed a progressive polyarthritis; 11 years later a colostomy was performed on account of a recto-vesico-vaginal fistula.

Examination.—She was pale, pulse 100 and regular, temperature 100.3° F., blood pressure 120/80. Typical rheumatoid involvement of the hands, wrists, and knees. Apex beat palpable in the fifth left interspace 4 in. from the mid-line, but cardiac dullness extended 1 in. beyond the apex. Pericardial friction was audible over the whole praecordium and remained so for 5 days.

Laboratory Investigations.—Haemoglobin 63 per cent. (Haldane) 9.3 g. per 100 ml.; Colour Index 0.88; White Blood Count 14,000 per c.mm. (78 per cent. polymorphs). Erythrocyte Sedimentation Rate 78 mm./hr (Westergren). Electrocardiograms showed typical inversion of T.2 with flattened or inverted T-waves in the remaining leads.

Progress.—With rest in bed and intensive aspirin therapy her condition slowly improved. She became apyrexial after one week and her erythrocyte sedimentation rate had fallen to 77 mm./hr when she was discharged 5 weeks later. One year later she was still alive, but was unwilling to attend hospital for examination.

Discussion

Joint involvement is a prominent feature of disseminated lupus erythematosus and most observers agree on an incidence of between 64 and 85 per cent. (Tumulty, 1952; Gold and Gowing, 1953; Jessar, Lamont-Havers, and Ragan, 1953).

Whilst this symptom normally takes the form of arthralgia or a fleeting arthritis with synovial effusions, the occurrence of a chronic deforming arthritis, indistinguishable clinically and radiologically from rheumatoid arthritis, has been reported (Reifenstein, Reifenstein, and Reifenstein, 1939; Friedman, Schwartz, Trubek, and Steinbrocker, 1953; Jessar and others, 1953). In some cases this arthritis has preceded the onset of other features of the disease by considerable periods (Reifenstein and others, 1939; Dubois, 1953a, b). Pericarditis is also a well-established feature of D.L.E. with an incidence in most series of 23 to 43 per cent. (Dubois, 1953a, b; Jessar and others, 1953).

The specificity of L.E. cells in the diagnosis of D.L.E. has recently been the subject of some controversy. A case of acquired haemolytic anaemia in which L.E. cells were found was reported by Lee, Michael, and Vural (1951); it later came to autopsy and was shown to be a case of D.L.E. in which the haemolytic anaemia had been the first manifestation of the disease process.

In the same paper the authors report the finding of a solitary L.E. cell in a patient with primary amyloidosis, but the significance of a single L.E. cell found on one occasion only is open to doubt. The finding of L.E. cells in two cases of penicillin reaction was reported by Walsh and Zimmerman (1953); these patients later developed typical D.L.E. which eventually proved fatal (Dubois, 1953b). L.E. cells have also been reported in myelomatosis and in leukaemia (Fisher and Moyer, 1950).

Opinion now inclines to the view that L.E. cells are a specific finding in D.L.E. We were unable to demonstrate their presence in forty uncomplicated

cases of rheumatoid arthritis attending this hospital from January to June, 1955. Walsh and Egan (1952) found no L.E. cells in cases of rheumatoid arthritis, rheumatic fever, and periarteritis nodosa. No false positives were encountered by Dubois (1953b) in a large series of tests. It seems likely, therefore, that the cases here reported are suffering from a form of subacute D.L.E.

During a 2-year period in a busy general medical unit, only five patients with pericarditis were seen, of whom three are reported above. In two of these, the chest pain was at first thought to arise from cardiac infarction. The possibility that chest pain and pericarditis in a patient with rheumatoid arthritis may be due to the rheumatoid process should not therefore be overlooked.

Summary

- (1) Three patients with rheumatoid arthritis and pericarditis are described.
- (2) The finding of L.E. cells in two of them is reported.
- (3) The significance of these findings is discussed.

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Péricardite compliquant l'arthrite rhumatismale

RÉSUMÉ

- (1) On décrit trois cas d'arthrite rhumatismale et de péricardite.
- (2) On signale la découverte de cellules L.E. chez deux d'entre eux.
- (3) On discute la portée de cette découverte.

Pericarditis complicando la artritis reumatoide

SUMARIO

- (1) Se describen tres casos de artritis reumatoide con pericarditis.
- (2) Se señala la descubierta de células L.E. en dos de ellos.
- (3) Se discute la importancia de esta descubierta.