CASE REPORT

A CASE SHOWING COMBINED FEATURES OF ACUTE RHEUMATISM AND RHEUMATOID ARTHRITIS

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'There are not two fundamentally distinct diseases to be dealt with, as certain authors fancy, but only two different manifestations of one and the same diathetic state,' wrote Charcot in 1881, but at the present day there still remain two opinions, one supporting the above-mentioned theory, the other supporting the view that acute rheumatism and rheumatoid arthritis are two distinct and independent entities.

Acute rheumatism characteristically attacks children or young adults, starting suddenly with fleeting pains in the joints which become swollen and acutely tender, soon subsiding and leaving no permanent defect. The heart shows signs of carditis, the temperature is raised, and nodules may appear on the tendon sheaths and bony prominences. In contrast, rheumatoid arthritis usually attacks older people, is more insidious in onset, involving the smaller joints of hands and feet as well as the larger ones, resulting in a diffuse peri-articular thickening and limitation of movement. The joints of the fingers acquire a characteristic spindle shape and the hands show an ulnar deviation. Ultimately the condition in the chronic stage gives rise to crippling deformities. There are no clinical signs of carditis, and nodules when they occur are more insidious in onset and more persistent (Bennett et al., 1940). Between these two very different clinical pictures numerous varieties have been described correlating the two conditions. Still (1897) described the condition in children with an associated enlargement of spleen and lymph glands and Felty's syndrome is a similar condition in adults (Weber, 1937).

There is some doubt as to the frequency of cardiac involvement in rheumatoid arthritis.

Master and Jaffe (1934) claim to differentiate acute rheumatoid (infective) arthritis in adults from acute rheumatic fever by the absence of clinical signs of organic heart disease and absence of changes depicting myocardial involvement in the electrocardiograph. Still (1897), in his original description, found physical signs of adherent pericardium in two out of twelve cases and in the only three autopsies performed found the pericardium to be universally adherent in all, these patients having given no physical signs of the condition during

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life. In the three autopsies only one showed thickening of the mitral valve. Colver (1937), in a follow up of forty-nine cases, could find no clinical evidence of valvular lesion but states 'adherent pericardium on the other hand is a recognized complication and was found in two of the autopsies and one of the surviving patients.' Four autopsies were performed.

In the pathology of the two conditions Collins (1939) points out that the gross appearances are different, the histological similarities occurring in tissues not highly differentiated and therefore liable to react similarly to a variety of agents. Bennett, Zeller and Bauer (1940) go further than this in their study of the nodules, stating 'they differ as much from one another as do syphilis and tuberculous granuloma, suggesting they may be due to different agents.'

Dawson and Tyson (1936), on the other hand, made an extensive study of the relationship from many view points and came to the conclusion that 'they are intimately related and possibly different manifestations of the same pathological process.'

In view of this difference of opinion the following case may be of interest.

Case report

History. A female, aged seven-and-a-half years first complained of swelling in her left hand and fingers in December, 1940. This cleared in twenty-four hours to be followed by swelling of the left hand and wrist. Previous to this she had been lethargic and inactive and tired easily and on one occasion had complained of pains in the knees. Recently her hair had got much thinner. There was no family history of rheumatism.

Clinical findings. When the child was first seen on December 6, one week after the swelling of the left hand, her pallor and tired appearance were striking. Temperature and pulse were normal. There were no fluctuant swellings of the joints but slight diffuse enlargement of both wrists and all the proximal inter-phalangeal joints and a tendency toward ulnar deviation of the hands. No nodules were seen or felt at this time. There was some restriction of movement of the fingers and wrists. Legs, spine and neck had full range of movement and showed no swellings.

BLOOD COUNT

Erythrocytes, 4,670,000 per c.mm.
Haemoglobin, 92 per cent.
Colour index, 0.98 per cent.
Leucocytes, 9,000 per c.mm.

DIFFERENTIAL COUNT

Polymorphs, 58 per cent.
Eosinophils, 3 per cent.
Basophils, 0 per cent.
Lymphocytes, 31 per cent.
Large mononuclears, 7.5 per cent.

LYMPHATIC SYSTEM. Small glands were palpable in both groins, left axilla, occipital and right supraclavicular regions as well as the epitrochlear. The spleen was felt two fingerbreadths below the costal margin. Both tonsils were large and red and the corresponding glands enlarged. There were several carious teeth.

THE HEART was not enlarged clinically. The apex beat was in the fourth space, $\frac{1}{2}$ inch inside the nipple line and 3 inches from the mid line. The first sound was followed by a soft systolic murmur at apex and base. The second

sound was normal but followed by a soft blowing mid-diastolic murmur at the apex. Sinus arrhythmia was present and the sounds varied in intensity with the respiration but the murmurs never entirely disappeared.

Fig. 1.

Progress. (See fig. 1 for temperature, pulse and sedimentation rate.)

Dec. 10. Four days after admission the diastolic murmur was no longer heard, although the diffuse systolic murmur persisted.

Dec. 14. Reduplication of the second sound with return of the diastolic murmur at the apex.

Dec. 17. No diastolic murmur heard.

Jan. 1. Rheumatic nodules appeared on the back of the left hand. The diastolic murmur was heard only if the child exercised to increase the rate. The spleen was much smaller.

Jan. 22. Had sore throat and temperature for last four days. The right wrist was acutely painful and swollen with fluctuation and marked limitation of movement. Throat swab grew Lancefield haemolytic streptococcus, group A.

Feb. 5. Right wrist practically returned to previous condition with slight thickening and limitation of movement.

Feb. 21. In view of the general improvement with fall of sedimentation rate to 12 mm. and rise of haemoglobin to 96 per cent. the child was allowed up. All nodules had disappeared except one on the third left knuckle (fig. 2).

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March 17. Complained of headache and sore throat and vomited once. Temperature raised to 100.4° F. No joint pains but right tonsil increased in size and inflamed.

HEART. Apex beat 1 inch inside the nipple line and 2½ inches from the mid line; that is, it had moved in half an inch. Systolic murmur still present at base and apex but no diastolic murmur heard.

March 23. Small crop of nodules appeared on second and fourth left knuckles and third right knuckle. None on legs, spine or occiput.

April 12. Tonsillectomy performed. No exacerbation of symptoms.

Fig. 2.—Left hand showing the persistent nodule proximal to the second left knuckle and remains of acute nodules on the other knuckles.

X-RAY OF HEART (March 21). Slight general enlargement with a tendency to pear-shape.

X-RAY OF WRISTS AND HANDS. Generalized osteoporosis.

X-RAY OF SINUSES. Clear.

ELECTROCARDIOGRAM. Low voltage in all leads most marked in lead 3. P-R interval normal. Left axis deviation. T waves upright in leads 1 and 2, invisible in lead 3.

Treatment. Rest with splinting of painful joints. Aspirin 5 grains four-hourly was given for seven days during the first pyrexial period with a resultant fall in temperature.

Discussion

Clinically, this is one of those uncommon cases seen in children presenting the features both of rheumatoid arthritis (the spindle-shaped fingers and enlargement of lymph glands and spleen) and of acute rheumatism (fluctuant swellings of the wrists, acute rheumatic nodules and cardiac murmurs). It is difficult to visualize the pathological condition underlying the murmurs. There are three possibilities—cardiac dilatation, endocarditis or pericarditis. A low-grade pericardial inflammation is suspected, the end result of which is not uncommonly seen at autopsy in cases of Still's disease. The pear-shaped heart, inconstant murmurs, and electrocardiogram are suggestive of this occurrence. In regard to the rheumatic nodules, there was a persistent one on the left

third knuckle such as occurs in rheumatoid arthritis, and there were two crops of acute nodules lasting only a short while, more like those seen in acute rheumatism (fig. 2). The comparatively low sedimentation rate is interesting, with a late rise after the first crop of nodules but no significant rise after the

Fig. 3.—Both hands showing the spindle-shaped fingers.

second crop. This is contrary to the usual findings in rheumatoid arthritis when the sedimentation rate is commonly maintained at a high level in active stages of the disease.

This case is presented as an example of rheumatic infection in a child combining the features of acute rheumatism and of rheumatoid arthritis.

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