RHEUMATIC FEVER IN MALTA:

A CLINICAL NOTE

BY

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Preliminary inquiries made by the Empire Rheumatism Council before the outbreak of the present war had indicated that rheumatism was not a serious problem in Malta. Undulant fever, on the other hand, was prevalent. The latter disease, although clinically similar to rheumatic fever during the acute stages, is not causative of cardiac lesions. It is, however, followed by a long period of debility during which the resistance of the patient to other infections appears to be lowered.

Cardiac Lesions among Recruits

One of us, while for a period Chairman of the Medical Recruiting Board, was impressed by the number of candidates rejected with established cardiac lesions. Ninety out of the first 15,000 conscripts medically examined were rejected on account of endocarditis, and approximately a further 30 were subsequently discharged from the army with a similar diagnosis. The case incidence of proved endocarditis was thus approximately 8 per 1,000 among the Maltese male recruits aged 17½ to 38 years. Of 90 cases rejected by the Medical Recruiting Board 20 had an aortic and a mitral lesion, 69 a mitral lesion, and 1 an aortic lesion.

ASSOCIATION OF UNDULANT FEVER WITH RHEUMATIC FEVER

A careful analysis of the history of the above cases revealed that an undiagnosed rheumatic infection might in many instances have followed upon a recorded attack of undulant fever. A positive serological diagnosis of undulant fever had been obtained in 23 cases, and of these all but 2 gave a suggestive history of acute rheumatic fever subsequently. A further 13 cases gave a history of a clinical attack of undulant fever followed by repeated attacks of joint pains. It is of course possible that the latter, which were not confirmed serologically as undulant fever, were in fact cases of rheumatic fever.

Serological confirmation of the diagnosis of undulant fever is the usual practice for hospital cases in Malta, but in the non-hospital cases, the diagnosis may be made on clinical grounds alone, and a patient's statement that he has suffered from undulant fever cannot necessarily be accepted as evidence of his having had the infection, as there is a tendency for the laity to call any prolonged febrile

illness undulant fever. Until reliable confirmation as to the frequency and degree of the anamnestic reaction for melitensis in the Maltese is available, the differential diagnosis in Malta between rheumatic fever and a relapse of undulant fever cannot be made with certainty.

Two brief case notes of recruits diagnosed by the Medical Recruiting Board as having mitral stenosis illustrate the possible association between undulant and rheumatic fever.

Case A.—Aged 18 when seen by Medical Board and established mitral stenosis diagnosed. At 14 suffered from an attack of undulant fever, proved serologically in hospital. Two years later at the age of 16 further attack of fever; since when he has had periodical attacks of joint pains.

Case B.—Aged 20 when seen by Medical Board and established mitral stenosis diagnosed. History of undulant fever confirmed serologically at age of 10. Eighteen months later had an acute attack of fever believed at the time to have been a relapse of the undulant fever but which responded to salicylates. Since then has always been liable to attacks of joint pains characterized by their flitting from joint to joint but never sufficiently severe to confine him to bed.

A study of the histories of a small series of children selected subsequent to the recent siege provided further evidence that undulant fever may predispose to and/or accelerate a secondary rheumatic infection. The following 2 cases were selected from among 10 similar cases seen at the outpatient department of the Central Hospital through the courtesy of Prof. J. J. Debono.

Case C.—Aged 8. Rather fair-haired, well-nourished child who for the last four months complained of dyspnoea, and after playing with other children for a few minutes would return home and lie down, giving no reason for this.

The child's history during the siege was as follows: During first months frightened during raids, but not unduly so, and after that did not seem to mind them much. Family was living in a rock tunnel in the higher part of the town. This was well above the sea level and fairly dry, and was shared with several other families. During the third month two of the children of the other families went sick and were diagnosed as having undulant fever; the normal "rheumatic" pains occurred in the third week. A week or so later the patient also developed undulant fever, which was clinically typical (Debono), and

gave a positive blood serum reaction. On the twenty-fourth day pain settled in the left hip-joint and soon became very severe, keeping her awake for several nights; it did not respond to aspirin, and morphine had to be used. After ten days this pain transferred to both knees in rapid succession, and also affected the neck for a few days. She was treated with "brucelline," which appeared to have a good effect, and at the end of six weeks from the onset she complained of no further pain, but seemed still very weak and "quiet." A week later the pains recurred—a rather unusual event in undulant fever—but this time in both knee-joints and the right wrist, all these joints suddenly becoming reddened and swollen, unlike the previous attacks. She developed $T. 104^{\circ} F.$ and seemed very ill. Brucelline was again tried with no effect on the temperature or pain, and was not persisted with as the pains now responded to aspirin. The pain, after remaining in these sites for four days, began to flit from these to other joints every few days in a manner which in retrospect seems typical of rheumatic fever. The child was ill for a further six weeks, and then gradually recovered.

At the time of examination one year later a well developed condition of mitral stenosis was present. Records of the previous illness showed that no cardiac lesion had then been present.

One of the other children who had developed undulant fever in this cave was traced, and her subsequent history as given by the mother was very similar although less severe:

Case D.—Aged 10. The mother complained that the child had never fully recovered after a first attack which was proved to be undulant fever, eighteen months previously, and frequently suffered with pains in various parts of the body, chiefly the knees, which made her cry, but never lasted long. On examination the child was thin and pale and obviously "highly strung." The heart appeared to be enlarged, and this was confirmed on radiographic examination. There were pre-systolic and systolic murmurs heard at the apex.

INFLUENCE OF SIEGE CONDITIONS

With the children the possibility of siege conditions having been a predisposing factor must also be considered. During the period 1941–43 continual aerial attacks increased the overcrowding on the island. The population of the towns and villages neighbouring upon the harbour and upon the aerodromes were compelled to live in shelters hewn out of the soft limestone rock. The rock had many faults and dampness was a feature of many shelters. The dietary of the poorer section of the population was reduced to the minimum consistent with life—approximately 1,500 calories. Avitami-

nosis was observed in the civilian population—mainly deficiencies due to lack of the vitamin B complex. Vitamin A was also lacking, but no increase in disease attributable to this was reported. Vitamin C alone remained in moderate supply since fruit and green vegetables are the common produce of the island. This is of interest in view of the considerable literature which has centred around the supposed association of vitamin C shortage and the prevalence of acute fevers, including rheumatic fever (Rinehart, 1943).

The abnormal conditions of the siege prevented the Government from fulfilling their plans to pasteurise the milk supply of the island, so that undulant fever, always common in Malta, has increased in severity and frequency during the war years. Prof. Debono (1945) has also observed an increased incidence of juvenile rheumatism. In view of the suggested association of the two diseases there appears to us to be a problem not only of clinical but also of colonial importance awaiting fuller investigation.

Summary

Evidence is submitted to show that rheumatic fever is not so rare in Malta as is believed. Medical examination of recruits aged $17\frac{1}{2}$ to 38 years revealed a case incidence of 8 per 1,000 with rheumatic endocarditis.

It is considered that the presence of rheumatic fever may have been overlooked in many cases in the past owing to the prevalence of undulant fever, the clinical course of which may resemble that of rheumatic fever.

Examination of the clinical histories of cases with established rheumatic endocarditis yielded suggestive evidence that undulant fever may predispose a patient to a subsequent attack of rheumatic fever.

The recent siege conditions and the increased prevalence of undulant and rheumatic fever among the juvenile population affords clinical and administrative problems worthy of further investigation.

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