REITER'S DISEASE IN PORT MORESBY, PAPUA*

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For some years polyarthritis has been a common cause of admission to hospital in Port Moresby (Campbell and Arthur, 1964). In the past, most cases were not given a precise diagnosis because they did not conform clearly to any of the common types of arthritis with which the author or other clinicians from Australia were familiar. This review of cases of arthritis admitted to the adult medical ward suggests that the common polyarthritis seen in Port Moresby is Reiter's disease.

Material

The records of 88 patients referred to the adult medical ward with a diagnosis of "arthritis" have been reviewed, and Table I records the final diagnoses. The majority fall into two groups, "Reiter's disease" and "? Reiter's disease". Criteria for inclusion in the first group was polyarthritis plus at least one additional symptom: conjunctivitis, urethritis, or balanitis. Cases with polyarthritis affecting similar joints and running a similar course, but lacking one of these additional features, were classified as "? Reiter's (or 'formes frustes')".

TABLE I
"ARTHRITIS" ADMISSIONS IN 1966

Diagnosis	No. of Cases
Reiter's Disease	25
? Reiter's Disease	21
Osteo-arthritis	10
Rheumatic Fever	5
Tuberculosis	4
Gonorrhoea	3
Rheumatoid Arthritis	2
Septic Arthritis	1
Not Arthritis	7
Not Diagnosed	10
Total	88

Clinical and Other Findings

Table II (opposite) compares the clinical and laboratory data in these two groups.

Nearly all the patients were young males. The duration of symptoms and the time spent in hospital varied widely, but some were incapacitated for months. There was a suggestion of seasonal incidence in disease Group I, more than half presenting in the middle 4 months of the year.

A history of diarrhoea was obtained in only four cases and stool cultures in nine cases grew no pathogens.

Conjunctivitis persisted only a few days after admission. Urethritis was never complained of, and was discovered by milking the urethra; this also lasted only a few days.

Balanitis was superficial and circinate, with multiple small areas of desquamation (Fig. 1). It was not painful and no patient drew attention to it, but it was frequently found when looked for. In some cases it persisted or recurred throughout the period of admission, but appeared to be unrelated to the severity of joint symptoms.

FIG. 1.—Circinate balanitis, a frequent finding in cases of Reiter's disease in Port Moresby.

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TABLE II
CLINICAL AND LABORATORY FINDINGS

Diagnosis	Reiter's Disease	? Reiter's Disease
No. of Patients	22	20
Sex	All Male	18 Male 2 Female
Mean Age (yrs)	25 (14-40)	26 (18-40)
Duration of Symptoms (days)	21 (2-100)	20 (3-90)
Season	January-April May-August September-December	5 13 4
Time in Hospital (days)	28 (12-100)	13 (3-30)
Associated Symptoms	Conjunctivitis Urethritis Balanitis	5 6 16
Joints Involved	Feet Ankles Knees Hands Arms Back	9 16 16 3 1 2
Laboratory Findings	Haemoglobin (g%) White Cell Count (/cu.mm.) Polymorphs (%) Eosinophils (%) Lymphocytes (%) Monocytes (%) Erythrocyte Sedimentation Rate (mm./hr) Rheumatoid Factor Uric acid (mg./100 ml.) Serum albumin (g./100 ml.) Serum globulin (g./100 ml.)	13.1 8,200 66 7 20 6 32 13 Negative 4.2 3.4 4.4
		12.0 8,300 62 9 22 6 34 8 Negative 5.5 2.8 4.9
		4 Weak reactive

The joints involved were mainly those of the lower limbs, ankles and knees predominating. In fourteen cases a joint was aspirated; the fluid was clear, contained a few polymorphs, and was sterile to culture in all cases. Very often the joint swelling seemed to involve mainly tissues around the joint, and there were sometimes points of marked local tenderness away from a joint, for example, at the Achilles insertion, the tibial tuberosity, and the insertion of the deltoid ligament on the calcaneum.

Laboratory Findings The haemoglobin level and leucocyte count were within the normal range for the Port Moresby population. Erythrocyte sedimentation rates were extremely variable and did not correlate well with the degree of disability. This is partly explained by the high levels of serum globulins common in Papuans (Curtain, 1966). The test for rheumatoid factor was never positive, a weak reactive result being counted as negative. Uric acid levels were within normal limits.

Cultures of *Mycoplasma hominis* were readily obtained from the glans penis in several cases of Reiter's disease and in a variety of other patients. Table III suggests that this agent is more closely associated with venereal disease than with Reiter's disease and supports the suggestion that it is best regarded as an index of sexual activity (Marmion, 1966).

TABLE III
ISOLATION OF *MYCOPLASMA HOMINIS*

Diagnosis	No.	Contam- inated	Positive	
			No.	Per cent.
Donovanosis	24	1	17	71
Reiter's Disease and ? Reiter's Disease	10	1	3	30
Gonorrhoea	6	—	2	33
Controls	23	—	4	17

Following the report of Schachter, Barnes, Jones, Engleman, and Meyes (1966), isolation of *Bedsoniae* was attempted from joint fluid (two cases) and balanitis scrapings (four cases), but all were negative. Complement-fixation tests using a psittacosis group antigen were also negative.

Radiological Findings X rays were available in 36 cases, but there was rarely a complete series for any one patient.

Table IV (overleaf) lists the cases in which a particular finding could be assessed, and the number of times it was found. The most consistent feature was soft tissue swelling, noted most often about the ankle and knee.

TABLE IV
RADIOLOGICAL APPEARANCES IN
36 CASES OF REITER'S DISEASE AND ? REITER'S
DISEASE

Finding	No. X-rayed	No. Found Positive
Calcaneal Erosions or Sclerosis ..	24	17
Calcaneal Spur	24	5
Tarsal Erosion	30	15
Tarsal } Soft Tissue Swelling ..	32	28
Ankle }		
Knee Soft Tissue Swelling ..	23	16
Hands Soft Tissue Swelling ..	17	10
Hands Bony Erosions	17	0
Sacro-iliac Sclerosis	17	3

Almost as frequent were changes at the insertion of the Achilles tendon on to the calcaneum. Sometimes this was limited to a small area of sclerosis, but in others marked erosions were present (Fig. 2). Rarefaction was also often seen in the sites where the deltoid ligament inserts over the medial side of the tarsus. In reviewing the series, these changes in the calcaneum and the tarsus seemed almost diagnostic, and were much more consistently present than either calcaneal spurs or sacro-iliac sclerosis.

Electrocardiographs These were taken in thirteen cases and abnormalities were found in two of these. One man had extrasystoles, and a boy aged 14 years had an A-V dissociation which resolved when the arthritis had subsided. Pericarditis was not noted.

Treatment

This began in all cases with rest and aspirin, and in successive weeks butazolidin and then chloroquine was added if the response was slow. Some received 1 g. tetracycline daily for 5 days, but this did not appear to influence the symptoms. Three persistent cases also received corticosteroids. Response to treatment was never dramatic, even with steroids, and one is left with the impression that the disease runs its course unaffected by treatment.

Discussion

This series of cases from Papua has much in common with other descriptions of Reiter's disease (Csonka, 1958). Some features, such as a skin rash or anterior uveitis, which did not occur in these patients, were seen in other cases during 1965 or 1967.

The unusual feature is the predominance of Reiter's disease as a cause of arthritis. Reiter's disease has been variously regarded as an infection or as an allergic process. On simple epidemiological grounds the frequency of Reiter's disease in Port Moresby favours the suggestion that the disease is infectious and may be venereally transmitted (*Brit. med. J.*, 1966).

Port Moresby is a rapidly growing town which attracts young men from the villages. All but one of

FIG. 2.—Marked erosion of the calcaneum at the Achilles tendon insertion in a chronic case of Reiter's disease.

the patients included here were immigrants from outside the Port Moresby area. Most diseases seen in Port Moresby are infectious (Campbell and Arthur, 1964), and venereal diseases (gonorrhoea and donovanosis) are common among immigrant males. Syphilis has not been seen. Many years ago, vigorous campaigns were conducted against venereal disease in Papua, with the aid of strong legal sanctions. To-day even obvious cases of venereal disease usually deny sexual contact, and no reliance can be placed on a sexual history. However, five men had both donovanosis and Reiter's disease, and two both gonorrhoea and Reiter's disease.

Summary

Reiter's disease is the commonest type of arthritis in cases admitted to hospital in Port Moresby, and occurs most frequently in young immigrant males from rural areas.

The disease may be due to an infectious agent met for the first time in the town, possibly through sexual intercourse.

Thanks are due to Dr Bertina Wentworth who came to Port Moresby to collect specimens for examination for *Bedsoniae*, to Professor Marmion for performing antibody studies, to Mrs M. Cahill for carrying out isolations of *Mycoplasma hominis*, and to the Director of Public Health, Port Moresby, for permission to publish this paper.

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La maladie de Reiter à Port Moresby, Papua

RÉSUMÉ

La maladie de Reiter est la cause la plus commune d'arthrite chez les malades admis à l'hôpital de Port Moresby, et est rencontrée plus fréquemment chez les jeunes immigrants venant des régions rurales.

Cette maladie pourrait être causée par un agent infectieux rencontré pour la première fois en ville et transmis peut-être par des rapports sexuels.