

Bywaters E G L, Dixon A S J & Scott J T. Joint lesions of hyperparathyroidism.

*Ann. Rheum. Dis.* 22:171-87, 1963.

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Patients with hyperparathyroidism and less commonly those with osteomalacia may suffer crush lesions of juxta-articular bone with a traumatic type of synovitis manifest by effusions and disability. Later, osteoarthritis occurs. Some of these cases may mimic clinically and radiologically cases of rheumatoid arthritis. However, calcification in the synovial membrane and cartilage, common in these cases, is never seen in rheumatoid arthritis. It is important to recognize such presentations and to proceed to appropriate treatment. [The SCI® indicates that this paper has been cited in over 155 publications since 1963.]

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"'Accident' is how we describe the way things start. The background of our paper on the joint lesions of hyperparathyroidism was a result of a long-term interest in rheumatoid arthritis starting for me in 1936. By 1939, I was responsible for rheumatology at the British Postgraduate Medical School at Hammersmith Hospital, London, and, over the course of years, had many talented and later famous colleagues training in that fabulous environment of medical advancement headed by Jack McMichael. But in those early days, we had no support in rheumatology from the pathologists and little from radiologists (until Robert Steiner came in the late 1950s). We had to do our own pathological and radiological interpretations.

"Against this background, we were referred, more or less by accident from the orthopaedic surgeon, a woman aged 66 with 'rheumatoid arthritis.' Although polyarticular, the surgeon contemplated doing knee arthrodeses on the grounds of incapacity. She had been unable to walk be-

yond the house for two years. Examination showed multiple joint swellings with pain. At our regular weekly session with the radiologists, we reviewed the knee X rays and initially concurred in the diagnosis of 'erosive rheumatoid arthritis' and indeed there were multiple severe erosions as well as other rather bizarre lesions. The hand X rays, however, showed not only carpal wrist and styloid erosions but also characteristic sawtooth subperiosteal erosions of the phalanges. Despite removal of the parathyroid adenoma, the patient died of renal failure 16 months later, vaguely aware to the last that she had been a patient of more than usual interest, although perhaps not appreciating her precise role in the advancement of clinical knowledge.

"We studied in detail the bone pathology of this and another case, as well as the X rays of 17 other cases and ten with osteomalacia. We were in a very fortunate position because Russell Fraser, chief of endocrinology, and his renowned team had a special interest in metabolic bone disease. Calcific deposits in cartilage were likened to the chondrocalcinosis described by Zitnan and Sitaj in 1963,<sup>1</sup> although they had not yet been characterized as due to calcium pyrophosphate dihydrate.

"The mimicry of rheumatoid arthritis (despite normal sedimentation rate and absence of rheumatoid factor) was, we thought from the pathological studies, due to bone collapse and the development of a 'traumatic' synovitis. This was important to recognise early because progress could be halted with appropriate treatment.

"In addition, urate metabolism was studied in this group of patients.<sup>2</sup> Hyperuricaemia was found to be common, attributable only partly to general renal failure: it was suggested that there was a certain type of renal lesion associated with calcium deposition in those parts of the tubule concerned with uric acid secretion.

"The frequent citation of this paper is due probably to previous neglect of such combined clinical, pathological, and radiological studies in the field of skeletal disorders. More recent studies in metabolic joint disease from this pathological viewpoint include accounts of haemachromatosis,<sup>3</sup> acromegaly,<sup>4</sup> and ochronosis<sup>5</sup> reviewed in Sokoloff."<sup>6</sup>

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3. Bywaters E G L, Hamilton E B D & Williams R. The spine in idiopathic haemachromatosis. *Ann. Rheum. Dis.* 30:453-65, 1971.
4. Bluestone R, Bywaters E G L, Hartog M, Hohl P J L & Hyde S. Acromegalic arthropathy. *Ann. Rheum. Dis.* 30:243-58, 1971.
5. Bywaters E G L, Dörfling J & Sutor J. Ochronotic densification. *Ann. Rheum. Dis.* 29:563, 1970.
6. Bywaters E G L. The pathology of the spine. (Sokoloff L, ed.) *The joints and synovial fluid.* New York: Academic Press, 1980. Vol. 2. p. 427-47.