Gout in the Spine and Sacro-Iliac Joints: Radiological Manifestations

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Abstract. It is well known that deposits of urates in soft tissues occur commonly in gout, particularly in para-articular areas and in articular cartilages of the limbs. Involvement of the spine and sacro-iliac joints by such deposits, however, has been regarded as being relatively unusual and has attracted little attention in the literature. As we were impressed by the frequency of episodes of acute back pain in our patients with gouty arthritis, established definitely on clinical and biochemical grounds, we suspected that involvement of the axial skeleton by the disorder was more common than has been believed, as we were impressed by the relatively frequent occurrence of episodes of acute back pain. A radiological investigation therefore was undertaken.

Material and Methods

The series included 54 patients, 48 male and 6 female, with chronic gouty arthritis. The duration of the disease varied from three to 20 years. The patients, at the time of the investigation, were aged between 39 and 70 years, with a mean of 55.6 years. Clinical and serum uric acid assessments were positive for gout in every case. Frontal and lateral radiographs of the spine and a 30° angled upward (Barsony) projection of the sacro-iliac joints were obtained. Uric acid arthritis was diagnosed using Cioms criteria [3].

The control group included 36 patients, 22 female and 14 male, aged between 42 and 65 years. They had neither gout nor hyperuricaemia, but all suffered from painful syndromes of the lumbar spine. Radiography of the spine was made in the same way.

Results

The clinical records established that 12 of the 54 patients (22%) had suffered episodes of acute back pain, usually of sudden onset and without apparent cause. The pain lasted for seven to 14 days and responded frequently to analgesic therapy. Three of these patients had been affected three times and two on more than five occasions. Six out of 12 patients had sacro-iliac joints affected and six patients had changes in the lumbar spine which were comparable to the roentgenological findings of urate deposits in soft tissue around peripheral joints.

The radiographs revealed a surprisingly high incidence of hyperostotic spondylitis, or diffuse idiopathic spinal hyperostosis, as shown by the presence of paraspinous ossification on the right side of the thoracic spine and on both sides of the lumbar spine.
Fig. 1. A typical example of the hyperostotic spondylosis found in 29 of the 54 patients.

Such changes were found in 29 of the series (54%). A typical example is illustrated in Figure 1. In seven patients swelling of an annulus fibrosus, sometimes containing flecks of increased density, was considered to represent a urate deposit, especially in the presence of frank soft tissue abnormalities of this type elsewhere in the same individual (Fig. 2A and B). Similarly destructive lesions in a transverse process of L5 (Fig. 3) and around a first costo-vertebral joint (Fig. 4) were interpreted as gouty tophi.

The sacro-iliac joints were affected in six patients, all of whom had suffered episodes of acute back pain. In five the lesions were unilateral (Fig. 5) and in one they were more extensive and bilateral, the appearance corresponding to that reported by Resnick and Reinke [8] (Fig. 6A). In this patient the clinical manifestations of tophi in the hands were classical (Fig. 6B).

The patients with sacro-iliac joint involvement and changes in the spine consistent with urate deposits were not receiving regular treatment and the disease had lasted more than 15 years. Radiographs revealed punched-out cystic erosions at several sites, while characteristic urate deposits were found in para-articular tissue (Fig. 2B).

Discussion

Clinical symptoms and radiological manifestations of gout occur usually in the peripheral joints. Gouty involvement of the spine has been considered to be uncommon, and lesions of the axial skeleton have been recorded only rarely [9]. The earliest report on this aspect of gout was published by Bauer and Klemperer in 1947 [2], but the pathological basis of these radiological lesions was not established until the re-

Fig. 2. A The distended annulus fibrosus (arrow) in this 62-year-old man with chronic gouty arthritis was considered to represent a tophus, particularly in view of the numerous urate deposits around the knees (B)