Extradural spinal depositions of urates producing paraplegia

Case report

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A case of paraplegia is reported that responded to decompressive laminectomy and removal of a urate-laden ligamentum flavum compromising the cauda equina.

Key Words • paraplegia • ligamentum flavum • uric acid crystals • gout

We are describing what we believe to be the second reported case of myeloradiculopathy resulting from intraspinal compromise of neural elements by a mass of uric acid crystals, secondary to gout. According to Tkach, gout ordinarily involves the spine without significant correlation between clinical, radiological, and pathological findings. He describes radiological changes of marked osteophyte formation along the entire spine and a unique tendency for right-sided unilateral thoracic involvement, and suggests that pain results from tophaceous erosions of the spine. In his series, 16 of 100 patients were diagnosed as having "ruptured discs," but no myelographic or surgical results were given. Juvenile patients with hyperuremic gout described by Sass, et al., are the only cases to be found in which the central nervous system or its meninges were intrinsically involved by urate deposition. In his cases there was demyelinization of cerebral white matter with axonal swelling and central accumulation of granules staining positive for urates. The children were mentally retarded and exhibited choreoathetosis and self-destructive biting of the lower lip and fingers.

Case Report

A 73-year-old man with recognized gout for 25 years had a 9-year history of progressive discomfort and weakness in both legs. He had received Indocin 75 mg a day and Zyloprim 300 mg a day for a prolonged period of time, and steroids for a brief time about 6 years before admission. He had had a gastrectomy for peptic ulcer and a transurethral resection for benign prostatic hypertrophy. Blood uric acid levels ranged from 5 to 7.5 mg%, and borderline elevations of blood sugars on glucose tolerance tests had been noted.

Examination. There was generalized weakness and wasting in both legs involving...
Paraplegia due to uric acid crystals

Fig. 1. Myelogram performed by cisternal tap exhibiting complete block at L-3 with moderate defects at L1-2 and L2-3.

the anterior and posterior tibial compartments and the intrinsic muscles of the feet, hamstrings, and glutei, with absent deep tendon reflexes. There was normal perception of cotton, pinprick, position, and vibration. The plantar, abdominal, and cremasteric responses were absent. X-ray films of the lumbar spine revealed some degenerative changes, and the disc spaces at L3-4 and L4-5 contained air. During myelography the contrast material would not pass below the mid-third lumbar level, and the myelogram showed indentations at L1-2 and L2-3 (Fig. 1).

Operation. A laminectomy was performed from L-3 through L-5. At each interspace large masses of cheesy calcific material were scooped away. Each of these mounds of tissue appeared to be ligamentum flavum which was grotesquely laden with histologically confirmed crystals of uric acid. Histological sections showed fibrocollagenous and ligamentous tissue containing several small granulomatous foci with central amphophilic material, and multinucleated giant cell reaction, and a slight histiocytic proliferation (Fig. 2).
Postoperatively the patient regained sufficient leg function to permit walking with a cane.

References


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