A CALCIFIED THORACIC INTERVERTEBRAL DISK WITH HERNIATION AND SPINAL CORD COMPRESSION IN A CHILD

CASE REPORT

FREMONT C. PECK, JR., M.D.*
Department of Surgery, The New York Hospital-Cornell Medical College, New York, New York

(Received for publication June 14, 1956)

Herniated thoracic intervertebral disks causing compression of the spinal cord are uncommon, comprising about 0.25 per cent of all disk protrusions. Most cases occur in the middle-age group, and the youngest patient found in reviewing reports in the literature was a 26-year-old male.1 A high percentage of herniated thoracic disks show calcification of the affected nucleus pulposus, and the presence of calcification in this location appears to increase the liability of the disk to rupture.2 The etiology of such deposits is not clearly understood, but their clinical significance differs from that of the common calcification of the annulus fibrosis seen in chronic lumbar diskogenic disease.

Calcification of the nucleus pulposus may be observed in children also, in whom it is associated frequently with clinical symptoms, such as local pain and tenderness. Twenty of these cases are recorded in the available literature, but in none of these has mention been made of compression of the spinal cord or of surgical treatment.6-9

The case of a 12-year-old boy with a calcified nucleus pulposus at T6 which had ruptured into the spinal canal, causing signs of cord compression, is, therefore, interesting because of its uniqueness. The lesion in this case was successfully excised with relief of symptoms and the objective neurologic deficit.

CASE REPORT

P.L. (NYH #726585), a 12-year-old white male, was admitted to the New York Hospital on Dec. 14, 1955, complaining of pain in the back in the mid-scapular region, which was aggravated by flexion of the neck. Seven days previously he had fallen on his right thigh, but sustained no appreciable injury. The next day he complained of aching pain in the xiphoid region, which was unrelieved by local heat or aspirin. Twenty-four hours later this symptom was replaced by nonradiating interscapular pain. Three days before admission the pain became worse, and he found that flexion of the neck greatly accentuated it. His only comfortable position was prone, with the neck extended. The pain was not increased on coughing. Walking was uncomfortable, and his gait was described as stiff and erect. No impairment of bladder function was noted. There was no history of past injuries, excessive intake of milk or Vitamin D, or previous back pain. Roentgenograms of the spine 5 days after the fall revealed calcification of the T6 nucleus pulposus with extrusion of the calcific material into the spinal canal.

Examination. The patient was a healthy appearing boy, who walked erectly with his neck moderately extended. Flexion of the neck caused pain in the interscapular area, but other motions of the neck were free and without accompanying discomfort. Coughing and jugular compression did not produce pain, and there was no tenderness over the spine. There were no motor deficits, but the deep tendon reflexes in the lower limbs were more active than those in the upper. The abdominal reflexes were present and the plantar responses were flexor.

* Present address: 47 South Lake Avenue, Albany 3, New York.

105
An incomplete sensory defect to pin and cotton existed below the costal margins bilaterally. There was no elevation of temperature.

Additional roentgenograms of the spine with anteroposterior and lateral tomograms showed a normal thoracic spine except for a circular area of calcific density in the center of the T6 intervertebral disk (Fig. 1). On the lateral projections posterior extension of the calcific material into the spinal canal was evident (Fig. 2). A skeletal survey revealed no other soft-tissue calcifications. Examination of the urine for homogentisic acid was negative.

Lumbar puncture revealed clear, colorless spinal fluid with no evidence of spinal block on manometric studies. A myelogram with 6 cc. of Pantopaque was performed. This showed anterior compression of the radio-opaque column on the lateral view and splitting of the dye in the midline as it passed the level of the calcific mass (Fig. 3). The Pantopaque was recovered, and the spinal fluid protein was reported as 27 mg. per cent.

Operation. On Dec. 19, 1955, a wide laminectomy of T6 and T7 was performed. When the dura mater was opened the cord was seen to be humped over a soft bulging extradural mass at the level of the T6 disk. After two dentate ligaments had been divided on each side, an extradural exploration was carried out. The soft mass lay outside the annulus and consisted of amorphous calcific material similar to that seen in peritendinitis calcarea of the supraspinatus tendon. About 1 cc. of this material was removed with small curettes and strong suction. The annulus had ruptured near the midline and readily admitted a staphylorrhaphy. Exploration of the intervertebral space through this opening yielded more of the toothpaste-like substance. A thorough evacuation of the interspace was not attempted because of the