PARAPLEGIA CAUSED BY SPONTANEOUS SPINAL EPIDURAL HEMORRHAGE*

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Paraplegia resulting from spontaneous spinal epidural hemorrhage is rarely encountered. Review of the literature from the first reported case of Bain¹ in 1897 to the case of Svien, Adson, and Dodge³ in 1950 reveals a total of 12 cases. Ver Brugggen¹⁰ reviewed the first 7 of these and pointed out the paucity of information on spinal epidural hemorrhage to be found in current textbooks. He emphasized the importance of prompt recognition of spinal epidural hemorrhage and recorded the only case in which early surgical removal of an epidural blood clot from the cervical region resulted in prompt recovery from quadriplegia. Kaplan and Denker⁶ in 1949 summarized the previous literature and reported 2 cases of their own in which the lesions were treated surgically. It was their belief that spinal epidural bleeding was of venous origin caused by a rupture in the weak, vascular wall of a pre-existing abnormal epidural venous plexus. They admitted the lack of convincing pathological evidence. Chavany et al.² added another case of lumbar epidural hemorrhage. Svien and co-workers⁶ called attention to the clinical similarity of epidural hemorrhage and the lumbar disk syndrome. Our own recent experiences corroborate this.

Spontaneous spinal epidural hemorrhage is poorly understood. We have little doubt that undiagnosed cases occur frequently. Neurologic findings may be transient and bizarre, depending upon the amount of hemorrhage. When the hemorrhage is small, little or no neurologic changes ensue, and the usual symptomatic treatment of back pain suffices. There is presumptive evidence that recurrent episodes of back pain may result from repeated spinal epidural hemorrhage. When massive hemorrhage occurs, marked motor and sensory impairment follow. Only by recognition of the pathology and prompt surgical removal of the clot can satisfactory neurologic recovery be anticipated. Recently, we have had the opportunity to treat 4 patients with massive spontaneous spinal epidural hemorrhage. Our purpose of reporting these cases is to re-emphasize this grave neurologic lesion and to

* The statements and conclusions published by the authors are the result of their own study and do not necessarily reflect the opinion or policy of the Veterans Administration. Case 4 was reviewed in the Veterans Administration and published with the approval of the Chief Medical Director.
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encourage others to record their experiences. It is our belief that only by the reporting of individual cases will a better comprehension of the etiology and treatment occur. Furthermore, we wish to emphasize that spontaneous spinal epidural hemorrhage is apparently more common than we have heretofore believed.

Case 1. #63810. F.G.G., a 24-year-old white apprentice printer, was seen by one of us (A.C.J.) Dec. 6, 1951. According to his physician, Dr. T. F. Walker, Jr., of Great Falls, Montana, he had been in good health until the previous evening when he experienced severe, stabbing pain in the upper thoracic spine about 1 hour after heavy lifting. Flexion of the trunk aggravated the condition. Later during the night, pain radiated anteriorly in a distribution more or less corresponding to the 5th thoracic dermatome bilaterally. An analgesic was given. By morning he experienced numbness and weakness of the legs, progressing to a complete paraplegia with a transverse sensory level in the upper thoracic region.

Examination, 18 hours after onset of symptoms. He was a well-developed and nourished male, alert, oriented, and cooperative. Normal motor power was present in the upper extremities. The lower extremities were flaccid, although the deep reflexes were present, equal, and active to slightly increased. Voluntary motion had been affected in the right lower extremity initially, and on this side there was a Babinski sign. On the left this sign was absent. Deep sensation on pinching the small toe was still present on the right side but absent on the left. There was a complete loss of superficial sensation as high as the 5th thoracic dermatome on the right and the 6th on the left.

The clinical impression was that this patient had an acute transverse myelopathy, apparently originating from the right side of the spinal cord at about T5 cord level (T3 vertebral level). The two most likely possibilities appeared to be an acute extrusion of the nucleus pulposus or a spinal epidural hematoma. In either event immediate decompressive laminectomy was indicated. Because of the rarity of herniation of the nucleus pulposus at the level indicated in this case, some doubt was cast on this possibility, though it was also recognized that a spinal epidural hematoma is a very rare occurrence, at least in the absence of known specific trauma.

Roentgenograms of the upper dorsal and lower cervical spine revealed no evidence of fracture, dislocation, or erosion.

Spinal puncture at the 4th lumbar level yielded normal-appearing fluid. There was a complete block to the Queckenstedt test. One cc. of pantopaque (ethyl iodo-phenylundecylate) was inserted into the lumbar sac. With the fluoroscopic table tilted down to approximately 60° from the horizontal, there was evidence of a complete block with a concave "tumor cap" type of defect corresponding with the lower level of the 3rd thoracic vertebral body. A small specimen of CSF contained 50 mg. per cent of protein and no cells.

Operation. The patient was immediately taken to surgery, where under endotracheal anesthesia a complete laminectomy of the 2nd through the 4th thoracic vertebrae was carried out (A.C.J.). As soon as the removal of the laminae was begun a moderately large, dark, "currant jelly" epidural clot was disclosed lying dorsal over the dural sac and markedly compressing it to a depth of about 1 cm. at its deepest portion. After removing a portion of this for pathologic study, the remaining hematoma was completely removed by suction and irrigation. Complete relief of the block was immediately evident by the development of normal pulsations of the dura