RUPTURED INTERVERTEBRAL DISC

REPORT OF A CASE WITH A DEFECT IN THE ANTERIOR ANNULUS FIBROSUS

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There are 2 cases reported in the literature in which vascular complications occurred as a result of disc surgery. Linton and White2 in 1945 reported a case of an arteriovenous fistula between the right common iliac artery and the inferior vena cava which followed operation upon a ruptured lumbosacral disc. The patient had shortness of breath, an enlarged heart and an abdominal bruit, and the diagnosis of arteriovenous fistula was made 8 months later. The vascular lesion was subsequently operated upon and was thought to have resulted from the disc surgery. Holscher2 in 1948 reported a case of vascular injury caused by disc surgery. This patient had a ruptured intervertebral disc on the left at the 4th lumbar level. It was stated that the surgeon was very careful when he palpated the anterior annulus fibrosus with a closed pituitary rongeur. His instrument slipped with surprising ease through the interspace. After the rongeur was removed, there was a copious welling-up of dark blood. The bleeding was controlled by packing. Subsequently an abdominal bruit and thrill developed, and a diagnosis of arteriovenous aneurysm was made. Six months later corrective vascular surgery was carried out. A 3 cm. arteriovenous aneurysm was found between the right common iliac artery and vein.

The authors have learned of 8 fatalities resulting from vascular injury at the time of disc surgery. The deaths were caused by massive, intra-abdominal hemorrhage. Holscher,2 in his report, said that he knew of 4 other unpublished instances of vascular injury resulting from disc surgery. It is our opinion that many more than 14 patients have had vascular complications attributable to intervertebral disc operations. Probably in most of the known complicated cases the operations were performed by neurological surgeons. It seems likely that the emphasis that Dandy1 placed on removing "the entire vertebral disk" precipitated the more radical trend resulting in these complications. The case to be reported indicates that the great vessels anterior to the lumbar vertebrae could be injured as a result of abnormality of the anterior annulus fibrosus.

CASE REPORT

A 34-year-old white male oil-worker was admitted to the Houston Veterans Administration Hospital on July 23, 1950. He complained of episodes of low back pain of 2 years' duration with pain radiating down the back of the right leg into the heel. This pain was made worse by straining, coughing or lifting.

Examination. He had a positive Naffziger test, a positive straight leg raising test and a positive Lasègue sign. His right ankle jerk was absent and there was hypesthesia of the right S1 dermatome.

Roentgenograms of the lumbar spine and sacrum showed that there was no narrowing of the intervertebral spaces. The lordotic curve was normal and there was scoliosis with the

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convexity to the right. The sacro-iliac joints appeared normal. A diagnosis of herniated nucleus pulposus of the 5th lumbar disc on the right was made.

Operation. On Aug. 2, 1950, under spinal anesthesia, a midline incision was made over the lumbosacral area to expose the right lumbar disc interspace. The interlaminar space was enlarged slightly with the rongeur and then the ligamentum flavum was excised. The 1st sacral root and dural sac were retracted medially, and a large piece of loose nucleus pulposus was grasped and removed with the pituitary rongeur. When the closed pituitary rongeur was placed into the annulus defect it passed into the interior of the intervertebral disc, and then fell farther with minimal pressure and with no additional rongeuring. With the thought that a fissure through the anterior annulus fibrosus had been entered, 2 cc. of pantopaque were dropped without pressure into the posterior annulus defect.

To complete the removal of the nucleus pulposus adjacent to the defect, care was exercised not to enter the anterior fissure. After routine wound closure the usual anteroposterior and lateral roentgenograms were made to determine the position of the iodized oil. The lateral film shows best the anterior position of the pantopaque (Fig. 1) which appears to be in front of the anterior longitudinal ligament.

Course. The patient made a prompt recovery. He left the hospital on leave on Aug. 9, 1950, and was discharged 2 weeks later.

Fig. 1. Lateral and anteroposterior roentgenograms of the lumbosacral spine, showing the position of the pantopaque after it passed through the anterior annulus defect. The lateral film indicates that the oil lies in front of the anterior longitudinal ligament.

Comment. The major vessels anterior to the vertebral column have been injured in the past by excessive surgical effort. The possibility of an anterior defect in the annulus fibrosus must prompt caution in the use of sharp instruments within the intervertebral disc.