Neurosurgical Classic—XV

ROBERT H. WILKINS, M.D.

Division of Neurosurgery, Duke University Medical Center, Durham, North Carolina

Rupture of the annulus fibrosus of the intervertebral disc with herniation of the nucleus pulposus is a common entity of disease which was not recognized as such until approximately 30 years ago. Consequently, the surgical treatment of this lesion has been a relatively recent development.

In contrast, the presence of the intervertebral disc and the occurrence of sciatic pain have been known for centuries.\textsuperscript{12,16} Vesalius described the human intervertebral disc,\textsuperscript{3} and the signs and symptoms of sciatica were mentioned in the works of Hippocrates.\textsuperscript{18} The term sciatica, however, was used by the ancients to denote a syndrome produced by a variety of causes.\textsuperscript{15} In 1764, sciatic pain finally was related to disease of the sciatic nerve by Cotugno.\textsuperscript{15,27} Further characterizations of sciatica were made in the nineteenth and early twentieth centuries by Lazzarevic, Lasègue, and Dejerine.\textsuperscript{16,38,40}

The occasional occurrence of traumatic rupture of the intervertebral disc also has been recognized for many years. Single cases were reported by Virchow (1857),\textsuperscript{33} Wilkins (1888),\textsuperscript{42} Kocher (1896),\textsuperscript{14} and Middleton and Teacher (1911).\textsuperscript{19} Despite these observations, herniations of the nucleus pulposus usually were diagnosed and treated as extradural chondromas.\textsuperscript{1,4,6,7,9,11,15,21,25,26,39}

The true nature of herniations of the nucleus pulposus gradually became apparent in the present century. Goldthwait\textsuperscript{12} proposed in 1911 that herniations of the intervertebral disc might cause compression of the cauda equina, producing symptoms of sciatica and low-back pain. Between 1927 and 1934, important pathological observations were made by Schmorl,\textsuperscript{26–30} Andrae,\textsuperscript{2} and Mauric,\textsuperscript{17} and clinical evidence in support of Goldthwait's hypothesis was provided by Petit-Dutaillis and Alajouanine,\textsuperscript{2,3,23} Dandy,\textsuperscript{8} Sashin,\textsuperscript{24} Peet and Echols,\textsuperscript{25} and others.\textsuperscript{25}

However, it remained for William J. Mixter, neurological surgeon, and Joseph S. Barr, orthopedic surgeon, to definitely establish in 1934 the degenerative etiology of herniation of disc and its relation to sciatic pain.\textsuperscript{20,33,34,41} Their classical work is reproduced below.

References

13. KEYES, D. C., and COMPERE, E. L. The normal


**RUPTURE OF THE INTERVERTEBRAL DISC WITH INVOLVEMENT OF THE SPINAL CANAL**

*By William Jason Mixter, M.D.,† AND Joseph S. Barr, M.D.‡*

During the last few years there has been a good deal written and a large amount of clinical work done stimulated by Schmori's investigation of the condition of the intervertebral disc as found at autopsy. His work

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† Mixter, William Jason—Visiting Surgeon, Massachusetts General Hospital. Barr, Joseph S.—Orthopedic Surgeon to Out-Patients, Massachusetts General Hospital. For records and addresses of authors see "This Week's Issue," page 294.
‡ Reprinted from The New England Journal of Medicine, 1934, 211: 210–214, with the kind permission of the Editor.