DUPLICATION OF THE SPINAL CORD
(DIPLOMYELIA)

AN ACCOUNT OF A CLINICAL EXAMPLE WITH A
CONSIDERATION OF OTHER REPORTS*

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(Received for publication November 18, 1948)

On Dec. 3, 1946, a 14-year-old girl (B. P., R. I. H. 414450) was admitted to the Neurosurgical Department of the Rhode Island Hospital, complaining of pain and numbness in the right leg and foot, with disability in walking. Her family history was not remarkable. She had had an enlarged thymus, scurvy, and cyclic vomiting as an infant. At 10 years of age she began to limp and walked with the right foot turned in.

Examination showed a small, short right foot with high arch and persistent inversion, with atrophy and general weakness of the muscles of the entire right leg; there was anesthesia to light touch on all the toes on the right, with hypesthesia to touch and pinprick up to the knee, and normal temperature sense. Reflex findings were normal except for an absent knee jerk and a sluggish ankle jerk on the right. Roentgenograms of the skull and right foot were normal; the spine showed flattening and deformity of the 10th, 11th and 12th dorsal bodies, with narrowing of the interspaces, partial absence of the 11th and 12th dorsal neural arches, and complete absence of the 1st lumbar arch. Lumbar puncture findings were normal except for a protein content of 62 mg. per cent.

Pantopaque myelography (Fig. 1) was done by Dr. Thomas McOsker; and Dr. Lawrence Martineau, the roentgenologist, reported a split in the oil column at the level of the congenital defect, with a large irregular defect at the 10th dorsal body without complete obstruction; he felt that this appearance was consistent with a tumor mass of undetermined origin, but that it might

be associated with or be a result of congenital deformity. Dr. Ernest Burrows of the Neurological Department then saw the child in consultation; he believed that she was suffering from a developmental anomaly of the spine and cord, but that she was entitled to exploration to rule out the presence of tumor.

Operation. On Jan. 16, 1947, an incision was made centering on the 10th dorsal spine, and the spines and laminae from the 9th to the 12th dorsal vertebrae were exposed. The spine of the 9th appeared to be normal; that of the 10th was composed of two fused bulbous masses; and the neural arches of the 11th and 12th were incompletely closed. The spinous process and laminae of the 9th vertebra were removed, and the fused mass representing the spinous process of the 10th was then carefully rongeured off. As this mass was being removed it became evident that there was a ventral projection of bone impinging on the dura and its contents. The incompletely fused arches of the 11th and 12th vertebrae were therefore removed to give better exposure, and the removal of the spine and laminae of the 10th was then completed.

The ventral bony projection, which had at first been thought to be somewhat in the nature of a stalactite, was found to pierce the membranes and the cord and to be firmly attached to the underlying vertebral body. The dura was opened above the bony spur and this exposed an apparently normal cord which divided to pass around the bony partition (Fig. 2). Opening of the dura below the obstruction showed that the split in the cord continued, with obvious separation of the two parts, for at least 2 inches. At this point the parts of the cord came to lie in apposition but did not ap-