THE MYELOGRAPHIC APPEARANCE OF ADHESIVE SPINAL ARACHNOIDITIS

WILLIAM B. SEAMAN, M.D., SUMNER N. MARDER, M.D.,* AND HERBERT E. ROSENBAUM, M.D.
Edward Mallinckrodt Institute of Radiology, and Department of Neuropsychiatry, Washington University School of Medicine, St. Louis, Missouri

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A review of the literature reveals a paucity of illustrations of the myelographic appearance of spinal adhesive arachnoiditis. Most of those published are of the extensive variety that cause little diagnostic difficulty. In view of the recent report of Kennedy et al. emphasizing the frequency of adhesive arachnoiditis following spinal anesthesia, it was felt that publication of the following 7 surgically verified cases would be of interest. The clinical features and therapeutic aspects have been recently reviewed by one of us, and the present communication will be limited to the radiographic findings in verified cases.

Since the diagnosis of chronic adhesive spinal arachnoiditis is frequently a difficult one to establish clinically, myelography may be a very helpful procedure. In 1929 Odin and Runström reported 14 cases of arachnoiditis and described the myelographic picture as one showing the contrast material in the form of droplets and streaks. From a study of the pathologic alterations produced by arachnoiditis, they postulated that the following alterations might occur in the myelographic appearance: a complete block to the passage of contrast material, the formation of pockets with retention of opaque substance, or the production of a filling defect in the contrast shadow. They observed no instances of complete block and most of their cases exhibited the picture characterized by streaks and droplets of contrast material.

It was probably because of these multiple possibilities that Dyke wrote that there is no characteristic picture of this condition. He mentioned complete and incomplete obstructions to the passage of opaque material as occurring in this disease as well as scattering of opaque oil in small globules over a large portion of the spinal canal. Davidoff, Gass and Grossman pointed out that a localized adhesive spinal arachnoiditis could occur following the removal of a cord tumor and simulate a recurrence by both clinical symptoms and myelographic findings. In 3 of their 5 cases a complete block to the flow of opaque oil during myelography was demonstrated.

Elkington, in a recent review of arachnoiditis, stated that myelography is perhaps the most valuable aid to the correct diagnosis. In his experience a clear-cut arrest of the contrast medium either above or below the affected segments of the cord is rare. He stated that in some cases the picture re-

* Now at the National Cancer Institute, Bethesda, Maryland
sembles the guttering of a candle or of a sheath lining the circumference
of the spinal canal in a manner difficult to explain other than by a diffuse
and partial occlusion of the subarachnoid space.

CASE REPORTS

Case 1. H.W., a 17-year-old colored gravida 1 para 1, was delivered of an ap-
parently normal child on March 28, 1950 under saddle-block anesthesia (2.5 mg.
"heavy nupercaine"). The delivery was uneventful as was the anesthetic, except
that the patient noted numbness of her body from the rib margin down in spite of
the so-called “saddle” technique.

The postpartum period was entirely normal until the 5th week, when she noted
slight numbness and weakness in her feet. This condition progressed in severity and
on July 3, 1950 she returned complaining of numbness from the waist downward,
inability to walk without support, and dysuria for the previous 2–3 weeks.

She was admitted to Barnes Hospital, with clinical findings typical of transverse
myelitis at the level of the 7th thoracic dermatome and profound sensory changes
below the iliopsoas group. There were bilateral pathological toe signs, and ankle
and patellar clonus. Routine laboratory findings and x-rays of the spine were nor-
mal. Lumbar puncture was unsuccessful on three attempts.

Myelography. A small amount of pantopaque was introduced into the spinal can-
al at the level of the 1st and 2nd lumbar vertebrae. This remained stationary and
could not be moved or down (Fig. 1).

Laminectomy. The dura mater was thickened and firmly adherent to the pia-
arachnoid. On incision of the dura mater, the entire spinal cord in the exposed area
was found to be surrounded by a dense mass of thickened adherent arachnoid,
which could not be dissected free from the pia and cord. A biopsy was taken which
confirmed the gross appearance of chronic inflammation of the meninges.

Case 2. F.L., a 29-year-old white gravida 3 para 3, was delivered of a normal
child on Jan. 3, 1949 under saddle-block anesthesia (heavy nupercaine 3.75 mg.).
The delivery was uncomplicated and the anesthetic was classical in the distribution
of hypalgesia with complete recovery in 2 hours. She remained well for 9 months,
but in September 1949 she noted numbness in both thighs and legs, slightly more