POSTOPERATIVE SPINAL ADHESIVE ARACHNOIDITIS AND RECURRENT SPINAL CORD TUMOR

LEO M. DAVIDOFF, M.D., HARVEY GASS, M.D., AND JACOB GROSSMAN, M.D.

Departments of Neurosurgery and Neuropsychiatry, Montefiore Hospital and Columbia University College of Physicians and Surgeons, New York, N. Y.

(Received for publication April 27, 1947)

INTRODUCTION

The successful removal of a benign spinal cord tumor, which is in most instances either a perineurial fibroblastoma or a meningioma, is a gratifying procedure to a neurosurgeon, since it usually marks the conclusion of an otherwise debilitating condition. This is especially true of perineurial fibroblastomas (with the exception, of course, of multiple tumors in von Recklinghausen's disease), inasmuch as recurrences of these tumors, when grossly removed, are extremely rare. However, the disconcerting fact that occasionally a spinal cord meningioma may recur has been known at least since the days when the first such tumor removed by Cushing in 1903 recurred about 2 years after the first operation. This knowledge, in itself, would perhaps be of less concern were it not for the fact that a syndrome of progressive spinal cord compression suggesting the recurrence of a cord tumor has, in recent years, been known to be produced also by another entity, adhesive arachnoiditis. For when such a clinical picture develops in a patient who has had a benign spinal cord tumor removed, with symptoms and findings pointing to a lesion at about the same level, the differential diagnosis between recurrent tumor and postoperative arachnoiditis becomes a difficult problem.

In most instances, such a differential diagnosis cannot be made, and the patient is offered an exploratory reoperation. We have recently seen 4 patients who have undergone such a clinical course, followed by reoperation, and are presenting them in this paper, together with the complete report, including necropsy findings, on a 5th such patient obtained from Montefiore Hospital records, in order to draw attention to the problems of diagnosis and management involved thereby, and to demonstrate the clinical end results in such patients.

CASE REPORTS


History. This patient, at the age of 48, was first seen in 1930 by one of us (L.M.D.) because of a 7-month progressive history of pain in the back and both legs, urinary urgency and frequency, and difficulty in walking. Examination at that time revealed a spastic paraparesis with bilateral pyramidal tract signs, more marked on the left. A sensory level with marked impairment of all modalities existed below T-10. On manometric studies, a block was found. (Myelography was not done.) A laminectomy at T-7, 8 and 9 revealed an encapsulated tumor
lying on the right side of the cord and it was completely removed. It proved to be a psam-
momatosus meningioma. A postoperative wound infection developed which necessitated a
secondary closure a few weeks later. Within a few months a complete recovery ensued and the
wound was well healed.

She was well thereafter until 8 to 10 months prior to her 2nd hospital admission, 14 years
later, in November, 1944. At that time she had begun to complain of weakness in her legs,
more marked on the right side. This disability became progressively worse so that for 7
months prior to admission she was unable to walk without support. During the month before
coming into the hospital urinary incontinence developed. Four months prior to this admission
she had undergone an operation for gall stones, and a few days before being admitted that
wound had reopened and was draining.

The remainder of the history was non-contributory.

Examination. No pertinent findings were noted at the general physical examination, but
on neurological study at this 2nd admission she showed marked weakness and spasticity of
both lower limbs, the right being more affected than the left. Bilateral positive Babinski
signs were present. Deep tendon reflexes in the lower extremities were exaggerated. There
were slight sensory changes with a level at T-6.

Laboratory. The cerebrospinal fluid showed a strongly positive Pandy test and total pro-
tein of 188 mg. per 100 cc.

Course. A reexploration through the old laminectomy wound was done. A cord tumor was
found at the same site as the original growth, and a sub-total removal was accomplished.
Bits of tumor were left behind because of their attachment to the cord. Histologically this
recurrent tumor again proved to be a psammomatous meningioma. Her postoperative course
was uneventful. Seven weeks after the operation she was walking again, and less than a year
later she was feeling well.

Case 2. M.R. M.H. #41778. Unsteadiness and stiffness of gait, ascending numbness in her
lower extremities, and back pain for 2\(\frac{1}{2}\) years. Mid-thoracic laminectomy with total removal of
meningioma. Recovery. Well for 12 years. Recurrence of original cord compressive symptoms. Re-
operation. Arachnoidal adhesions. No tumor. Despite slight transient improvement, persistence
ultimately of neurological defect.

History. This was a 56-year-old white female, admitted to Montefiore Hospital in May,
1946, who was well until 15 years before admission, when there gradually developed slowly
progressive symptoms of unsteadiness and stiffness of gait, ascending numbness to her waist,
and severe back and right flank pain which became excruciating whenever she coughed. In
October, 1933, about 2\(\frac{1}{2}\) years after onset of symptoms, she underwent a mid-thoracic lamin-
ectomy at the hands of another surgeon, and a spinal cord meningioma was said to have
been removed from the 7th thoracic segment. No contrast medium was used for diagnosis
at that time. Within a year after the operation she was completely recovered except for a
slight residual right flank and subcostal pain.

She remained well until a year prior to admission at which time she first began to notice
steadiness, unsteadiness of gait, numbness in her feet and pain in her spine below the previous
operative site. Her symptoms became steadily worse, and at 3 months prior to admission to
Montefiore Hospital she was so incapacitated that she could do no more than take a few
steps in her home. At this time she was again hospitalized elsewhere and a sensory level at
the 8th thoracic segment with a spastic paraparesis and bilateral positive Babinski signs were
found. Although lumbar puncture showed no block, pantopaque myelography revealed evi-
dence of an obstruction to the opaque medium at the upper border of the 11th thoracic
vertebra. A laminectomy was done and the site of the previous operation as well as the entire
remnant of the lower thoracic segments was thoroughly explored. Dense arachnoidal ad-
hesions at the site of the previous laminectomy were reported present without evidence of
recurrence of tumor. Following this operation a course of roentgen-ray therapy was given to
her spine.

She has been unable to walk since the 2nd operation, even though there was, for a month