Endometriosis Within the Sheath of the Sciatic Nerve

Report of Two Patients with Progressive Paralysis*

GEORGE S. BAKER, M.D., WILLIAM R. PARSONS, M.D., AND JOHN S. WELCH, M.D.
Section of Neurologic Surgery, and of Surgery, Mayo Graduate School of Medicine, Mayo Clinic and
Mayo Foundation, Rochester, Minnesota

Endometriosis within the sheath of the sciatic nerve is rare, but may be painful and often is
associated with progressive paralysis of the legs. The cyclic nature of the symptoms in a woman of
carrying age should help the physician differentiate this condition from other causes of
sciatica. There have been many reports6,7,10–13
from the gynecologic point of view but few con-
nect a sciatic syndrome with the endometriosis.
Most patients1,3,5,6,7,9,14
have had pelvic implants
on the roots of the sciatic nerve. Diagnosis is made
by pelvic exploration and some form of treatment
is directed toward castration, such as irradiation,
surgical removal of the ovaries, or hormonal
suppression of uterine endometrium.

We are reporting two cases in which the im-
planted endometriosis was found within the sheath
of the sciatic nerve and required exploration of
the nerve below the sciatic notch, as is necessary
for tumors of the nerve.

Case Reports

Case 1. A 35-year-old woman was admitted to the
hospital on February 9, 1965, complaining of pain in the
right buttock and leg for 20 months. She had been ad-
mitted because of suspected endometriosis of the right
sciatic nerve. She had been married 14 years and had
two children, aged 10 and 9 years, both in good health.
She was allergic to penicillin. She had had no previous
operations. Menstruation had begun at age 14 years,
recurred at 28-day intervals, and lasted 3 days. The
flow was moderate in amount. The last menstrual
period had begun on January 4, 1965, and the previous
normal period had begun on December 13, 1964. She
had started taking norethynodrel with mestranol
(Enovid) on December 17, 1964.

The patient had been well until May, 1963, when she
began having pain and soreness in the right groin.
The pain persisted and several months later she consulted
her local physician who advised treatment with heat.
Three or 4 months later she noticed pain also in the
right buttock. It extended down the posterior part of
the thigh, over the lateral aspect of the leg and ankle,
and into the big toe. In December 1963, x-ray examina-
tion of the lumbar spine was normal. The patient was
advised to enter the hospital for traction but refused.
In February, 1964, an orthopedist made an unidentified
injection into her right hip. In June, 1964, a neurologist
advised operation for a protruded lumbar disk. A
myelogram made with the aid of iophendylate (Pant-o-
paque) was normal.

Several physicians suspected gluteal bursitis and
suggested that she keep a calendar to determine the
relation of the pain to the weather. In October, 1964,
she realized that her pain was related to her menstrual
cycle. She would be free from pain the week before her
menstrual period but would have severe pain from the
beginning of the period until a week or 10 days after
the period ended.

In December, 1964, a gynecologist thought she might
have endometriosis, and started giving her norethynodrel
with mestranol. However, thereafter her pain had been
present every day. It was aggravated by sitting, but
coughing or sneezing had no effect. One week before
admission, she was unable to bear weight on her
right leg, and was given crutches by an orthopedist. She
kept the right leg flexed. Extension caused severe pain
in the right buttock and posterior part of the thigh. She
had no sensory loss but there was increasing weakness
of the right leg. She had been taking meperidine (Dem-
eral) as often as every 4 hours for 6 months.

Examination. Blood pressure was 142 mm. Hg systolic
and 98 diastolic; pulse rate was 80 and tempera-
ture 99°F. The patient was unable to bear weight on the
right leg. The ankle jerk was graded −1 on the right.
Muscle strength (right) was graded as follows: anterior
tibial −1, toe extensor −1, peronei −1, −2 (on a basis
of −1 to −4). The straightened right leg could be
raised 10° (with severe pain) and the left one could be
raised 90°. The right buttock was tender and there was
atrophy of muscles in the anterior compartment.

The electromyogram showed mild changes in muscles
supplied by the right peroneal nerve consistent with
early denervation. The uterus was retroflexed and
the size seen at 6 weeks’ gestation. A nodule 1.5 cm. in
diameter felt on the right posterior wall was suspected
of being a fibroid. She had acute tenderness in the region
of the right sciatic notch.

X-ray findings in the chest, lumbar spine, and hips
on February 10, 1963, were normal. Three-quarter
views of the lumbar spine on February 15 were normal.
A myelogram on February 19 showed only a slight
extradural deformity at the lumbosacral interspace.

The following additional laboratory data were normal:
hemoglobin and hematocrit, leukocyte count in-
cluding the differential count, sedimentation rate, blood
sugar and urea, glucose tolerance test, serologic (Kline)
reaction for syphilis, and urinalysis. The pregnancy test
gave a negative result. Cerebrospinal fluid examination
† Complete absence of reflex activity is indicated by
maximal exaggeration of reflex by +4, normality
by 0, and intermediate degrees of activity by appro-
imate plus or minus signs.

Received for publication May 24, 1966.
* Presented at meeting of the American Academy of
Neurological Surgery, Cincinnati, Ohio, October 18,
1965.

652
showed an initial pressure of 102 mm., 27 mg. of protein per 100 ml., 5 lymphocytes per cu. mm., a non-reactive Kolmer test for syphilis and a normal response to the Queckenstedt test.

On February 23, 1965, the right sciatic nerve was explored by the Stookey approach (Fig. 1.). Just as it emerged from beneath the pyriformis muscle, the nerve was abnormally bluish along about 1 to 1.5 cm. of its length. The nerve sheath was split over this area releasing black fluid. The pathological report on the small biopsy specimen was that it contained fragments of endometrial glands. The diagnosis was endometriosis of the sciatic nerve.

**Postoperative Course.** There was grade -4 right toe extension and right foot extension immediately after operation, with sensory loss in the L-5 distribution. The wound healed well. Subsequently, abdominal hysterectomy, bilateral salpingo-oophorectomy, and appendectomy were done. There was a typical pocket sign* on the right side running over the top of the ureter posterior to the uterine artery and descending toward the

* Editorial Note. “Pocket sign” described in Ref. 9 as: “Evagination of peritoneum by intrapelvic endometrial tissue to form a pocket in surrounding retroperitoneal tissues.”