Case Reports and Technical Notes

Intramedullary Spinal Abscess as a Complication of a Congenital Dermal Sinus

Case Report

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Congenital dermal sinuses result from a failure of separation of the cutaneous epithelial ectoderm from the neuroepithelial ectoderm during the first month of intra-uterine life. Moise 10 was the first to report a case of meningitis in an 18-year-old boy with a discharging sacral sinus. Since that time, many other authors 8,9,11-16 have reported cases of infection of the central nervous system in which the pathway of infection was along the track of a dermal sinus. Most of the infections which have arisen in this way have taken the form of meningitis or subdural abscess. In only three previous cases 11,14,16 has the infection resulted in the formation of an intramedullary spinal abscess. We report here a fourth case of this unusual complication.

Case Report

A 16-month-old boy was admitted to the Infectious Diseases Unit at Rush Green Hospital on August 8, 1966, with a 7-day history of fever, restlessness, and irritability. He showed signs of meningism, and a clinical diagnosis of pyogenic meningitis was confirmed by lumbar puncture. The cerebrospinal fluid showed 1,300 white blood cells per cu mm (90% polymorphs), and B. proteus was grown on culture. The child’s previous medical history had been clear, but it had been noted at birth that he had a small dimple with an underlying sinus in the skin in the midline over the lumbosacral region. He was treated with penicillin, sulphadiazine, and chloramphenicol, and made a rapid and full recovery from his meningitis.

On September 28, 1966, he was seen in the Neurosurgical Out-Patient Clinic at Oldchurch Hospital at the request of his physi-

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Operation. The afternoon of October 13, vertical incision was made over the lumbo-
sacral swelling. A ragged abscess cavity was
found in the subcutaneous tissues containing
5 ml of pus. This abscess did not appear to
penetrate the lumbo-sacral aponeurosis.
However, a dermal tube was found passing
depth from the sinus and entering a defect
about 5 mm in diameter in one of the verte-
bral arches to become continuous with the
dura mater. There was no epidural abscess.
The neck of the dermal tube was ligated
on the dura and its superficial part ex-
cised. The wound was closed with drainage.

There was no change in his clinical condi-
tion over the next 24 hours and a cisternal
myelogram was carried out under general
anesthesia to gain more information as to
the cause of the paraplegia. The contrast
medium descended freely to C-8 (Fig. 1.)
and after prolonged tipping a small amount
trickled down as a thin layer on each side of
the spinal canal as far as D-12.

Second Operation. On October 15, 1966,
a laminectomy from D-12 to L-2 was car-
rried out. There was no epidural pus. The
dura was tense and showed no pulsation;
when it was opened, the cord appeared swol-
len and uniformly pink throughout the expo-
sure. There was no subdural pus. A midline
incision 1.5 cm in length was made over the
dorsum of the cord centered at D-11. At a
depth of 5 mm a large abscess cavity con-
taining thick yellow pus was entered. Some 5
ml of pus drained from this cavity. A fine
rubber catheter was introduced cranially into
the abscess cavity and passed upward for a
distance of 7.5 cm. A similar myelotomy
was carried out at L1-2, and an identical ab-
scess cavity was found. Fine rubber catheters
were left in the abscess cavity for drainage
and instillation of antibiotics. The dura was
left open, and the superficial tissues closed in
layers.

Over the next 3 days, there was an im-
provement in the child's general condition
but no recovery of the paraplegia. Systemic
antibiotics were given in large doses, and
local antibiotics were instilled into the ab-
scess cavity after aspiration of all available
pus. On October 19, 1966, 4 days after
myelotomy, the child was found to have de-
volved a severe flaccid paresis of both
arms, more marked on the left, with a left
Horner's syndrome.

Third Operation. Later the same day, a
laminectomy from D-1 to D-9 was carried
out. The intramedullary abscess was found to
have extended throughout this portion of the
cord. Further dorsal myelotomies were
carried out at D-2 and D-7 with findings
identical to those at the D11-L1 level. A
catheter was found to pass upward in the ab-
scess cavity to the mid-cervical level. Drain-
age was established as after the previous op-
eration.

Following this operation, there was a slow
but steady improvement in the child's gen-
eral condition. There was a rapid and full re-
covery in the function of the right arm in the
course of 2 weeks. Recovery in the left arm
was much slower and took place over a pe-
riod of many months. The child has been left
with a mild weakness of the intrinsic muscles
of the left hand. There has been a return of
a flicker of movement in the right leg but no
recovery in the left leg. At 18 months after
the onset of his illness, the child remains for
all practicable purposes completely paraple-
gic and anesthetic up to the D-3 level.

Discussion

Intramedullary spinal abscess is a rare
condition. The disease was first described in
1830 by Hart. In 1944, Arzt reviewed the
40 cases previously described in the litera-