hemorrhage remains of minor proportion. In the case presented here, however, a slow ooze continued, leading to a progressive displacement of the eyeball and compression of the orbital contents. It is tempting to compare this situation with a gradually developing extradural hematoma.

The clinical syndrome was characterized by gradually increasing exophthalmos, chemosis, exposure keratitis, impairment of vision with papillitis, extra-ocular palsies, and severe orbitotemporal headaches. In the differential diagnosis, one has to consider traumatic arteriovenous fistula of the carotid in the cavernous sinus (pulsating exophthalmos), thrombosis of the orbital veins, and finally, orbital cellulitis caused by infection. As to treatment, it is advisable to adopt at first a conservative course since minor extraperiorbital hemorrhage is self-limited and resorbs spontaneously. If, on the other hand, the exophthalmos progresses and endangers the cornea and vision, surgical steps should not be delayed until irreversible damage occurs. Lateral decompression of the orbit (Krönlein’s operation) is an effective and safe procedure which may be easily carried out under local anesthesia. It is essential not to traumatize the upper branches of the facial nerve since weakness of the orbicularis oculi may cause further damage to the protruded eye by exposure and thus necessitate tarsorrhaphy. Splitting of the periorbita probably assures a better decompression of the orbital contents.

SUMMARY

A case is reported of progressive extraperiorbital hematoma following fracture of skull and orbit. The clinical symptomatology consisted of progressive exophthalmos, extra-ocular palsies, optic neuritis with visual loss, and severe frontotemporal pain. The condition was cured by lateral decompression of the orbit with removal of the hematoma.

REFERENCES


INTRASPINAL EPIDERMOID TUMOR

CASE REPORT AND DISCUSSION

WILLIAM W. MOORE, M.D.,* AND EXUM WALKER, M.D.*

Atlanta, Georgia

(Received for publication October 4, 1950)

Epidermoid and dermoid tumors of the spinal canal, together with teratoids, teratomas, and communicating dermal sinuses, form a rarely occurring but clinically important group of intraspinal lesions. They are considered together because of their somewhat common origin from an embryonal accident.

In 1949 Sachs and Horrax1 published an exhaustive review and tabulation of the

* 139 Doctors Building, Atlanta 3, Georgia.
cases reported in the literature. They added a case of their own along with an unpublished case of Furlow. Their review brought the total of published cases to 61 of epidermoids and dermoids and 25 of teratoids and teratomas. It was pointed out that 14 of the entire group had an associated dermal (pilonidal) sinus passing through the dura and communicating with the tumor. For detailed features and a complete bibliography of the subject, the reader is referred to their paper. Our own report will serve to emphasize the salient clinical features of this group of lesions, and to record another case of intraspinal epidermoid tumor.

The nomenclature used by Sachs and Horrax is a pathological one, but from a practical clinical standpoint all of these tumors can be conveniently grouped together.

The clinical picture of these tumors is generally that of long-standing symptoms of spinal cord or nerve root compression, frequently dating from childhood. The incidence is higher in males, in the younger age group. The diagnosis is most frequently made in the first 4 decades, although a case in the 8th decade has been reported. Radiographs of the spine generally show widened interpedicular spaces, and may show irregular areas of calcification. Frequently associated anomalies of the vertebrae are present. An intermittently draining midline sinus may have been noted.

The results of surgical excision have been generally good, although conservatism is advised in attempting complete removal of the tumor capsule, since further cord

![Pros. 1 and 2. Views of patient to show atrophy of legs. Note clubbing of right foot.](image-url)
damage may result. The benign character and slow rate of growth of the dermoids and epidermoids make complete removal unnecessary to obtain a satisfactory result.

The following case is of particular interest because of the long-standing history (42 years), the size of the lesion, and the satisfactory result.

CASE REPORT

H.G.B., a 52-year-old businessman, was first seen Mar. 19, 1949, complaining of recurring cramps in the left great toe of at least 20 years' duration. Upon questioning, it was revealed that at the age of 10 some difficulty involving the right foot was first noted, and a diagnosis of poliomyelitis was made at that time. There had been disability of the right leg and foot since then, it having never grown in size or length as the left and having acquired an inversion deformity. Numerous local operative procedures had been performed in an attempt to correct the inversion and to stabilize the ankle. Since childhood, ulcerations had appeared intermittently over pressure points of this foot. He had had recurrent attacks of left sciatic pain since 1931. The cramps in the left foot had grown worse during the past 5 years. Local nerve resections about the ankle and foot had been done without relief. No sexual difficulties had been noted.

Examination. He was of short stature, with an obvious disproportion between the length of his trunk, which was that of a larger person, and the legs, which appeared abnormally short and poorly developed. Obvious atrophy of both legs below the knee was noted, and

Fig. 3 (left). Retouched X-ray showing widening of spinal canal and erosion of pedicle.  
Fig. 4 (right). Showing erosion of the bodies of the vertebrae.
relative atrophy of the right thigh as compared to the left (Figs. 1 and 2). The right leg was considerably shorter than the left and the right foot was fixed in an inversion deformity. Healed trophic ulcers were present over the heel and opposite the distal end of the 5th metatarsal bone on the right foot. The left foot appeared normal, but numerous attacks of involuntary muscle spasm appeared, with associated dorsiflexion of the toes.

The abdominal reflexes were present, but diminished when tested over the 12th thoracic and 1st lumbar dermatomes. The cremasteric responses were brisk during the testing of the abdominal reflexes, but absent upon stroking the thighs. The right knee and ankle jerks were present and hypoactive, while the left knee and ankle jerks were totally absent. Total anesthesia of the left foot in the distribution of the 5th lumbar and 1st sacral dermatomes was present. Hypesthesia and hypalgesia in the other sacral dermatomes were present, but as the lower sacral dermatomes were approached, sensation became normal. The same type of sensory pattern was present in the right lower extremity, except that there was no total loss of sensation at any place. Marked weakness of the muscles of the calves was present bilaterally, although the strength of the thigh muscles, both anterior and posterior groups, was normal.

As he stood, there was a striking scoliosis of the spine, apparently compensatory to the tilt of the hip, incident to the shortened right leg. No tenderness over the spine was present.

X-rays of the spine (Figs. 3 and 4) revealed marked widening of the interpedicular spaces at L 2-4, and in the lateral view, erosion of the dorsal surfaces of the bodies of L 1-4 was noted. Irregular areas of intraspinal calcification were noted in this region.

Operation. On April 1, 1949 the spines and laminae of T 12 through L 4 were removed, exposing the widened spinal canal and noticeably thinned dense dura, through which a whitish appearing tumor could be seen, extending from L 1 through L 4. Above this the dura appeared its normal bluish color and pulsations could be seen. There was no pulsation opposite or below the tumor mass. The dura was opened in the midline, and due to close adherence of the tumor to the dura, the tumor capsule was also opened along most of its course. The tumor was found to extend from an abnormally widened and flattened conus to the 4th lumbar level, with the nerve roots passing anteriorly and laterally on both sides (Fig. 5).

The interior of the tumor contained cheesy, amorphous degenerate material, generally of a yellowish color, but in the peripheral portions, appearing pearly white, with a definite satiny sheen. The material was removed by spooning, irrigation, and suction leaving behind a glistening, thin, avascular membrane, whose interior was irregularly conted with calcific plaques. Due to the obvious dense adherence of the nerve roots to the capsule anteriorly and laterally, no attempt was made to dissect these free. A portion of the free-lying capsule was removed for pathological examination. The thinned dura was closed carefully, and in one place, a 1 cm. defect was closed by a mattress suture incorporating a small stamp of gelatin foam. The wound was carefully closed in layers.
INTRASPINAL EPIDERMOID TUMOR

Pathologic Report. "The debris forming the greater part of the tumor is composed entirely of keratinized and degenerate epithelial cells. The capsule of the tumor (Fig. 6) shows it to be formed by an orderly layer of stratified squamous epithelium with proliferation of keratinized cells into the tumor cavity. Outside of this there is a thin zone of fibrous tissue. No definite hair follicles, sebaceous or sweat glands are noted."

Microscopic Diagnosis. Epidermoid of spinal canal.

Fig. 6. Photomicrograph of tumor capsule.

The postoperative course was relatively uneventful with the exception of a spinal fluid leak which was controlled by some deeply placed sutures. There was difficulty in voiding for approximately 10 days. The patient had considerable relief of the leg and foot pain of which he had complained, although he continued to have occasional cramps. A subcutaneous spinal fluid lake developed which was repaired 5 months after his initial surgery, without recurrence. There has been a vague but definite subjective improvement in sensation in his legs, although objectively this cannot be demonstrated. There is no evidence of any increase in his neurologic disability since surgery.

SUMMARY

A brief discussion of the features of various intraspinal embryonal tumors is made.

The importance of consideration of these lesions in the diagnosis of long-standing cases of spinal cord involvement is emphasized.

An additional case of intraspinal epidermoid tumor is presented, bringing to 62 the number of cases now recorded.

REFERENCE