TERATOMA OF THE CONUS MEDULLARIS
REPORT OF A CASE

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Teratomas of the conus medullaris apparently are rare. In a search of the literature only 3 cases were found in which the tumor was located in the vicinity of the conus medullaris. The following is a report of such a case encountered at the Kaiser Foundation Hospital in Los Angeles.

CASE REPORT

Hospital No. W.349252. N.S., a female aged 44 years, was admitted to the hospital on Jan. 27, 1957, because of weakness in both legs for 3 years and loss of control of the urinary bladder and rectal sphincter for 2 years. Four years prior to admission, she had an excruciating pain radiating along the lateral side of the right lower limb down to the external malleolus. Resting in bed aggravated the pain and walking eased it. Meanwhile, the patient felt weak at both ankles, the right more than the left. The pain gradually disappeared 1 year later. Nevertheless, the weakness in both legs progressed slowly and she could hardly stand on her toes. She lost the control of her bladder. In association with orgasm during sexual intercourse, she involuntarily emptied her bladder. As time went on, she also was unable to control her anal sphincter.

Neurological Examination. There was a mild degree of scoliosis of the lumbosacral spine. Tenderness was elicited over the spinous process of D10 to D12. Her gait was limp. There was marked weakness in plantar flexion of both feet. The right was weaker than the left. There was a distinct sensory level of hypesthesia at D12 on both sides. A saddle pattern of marked hypesthesia was elicited below the level of L2 with anesthesia along the distribution of S1 on both sides. There was also impairment of temperature sensation in this area. Nevertheless, both the vibration and position sense of the lower limbs were intact. Rectal examination showed that the anal sphincters were atonic. Both knee jerks were depressed but present and equal. Both ankle jerks were absent.

Laboratory Findings. Roentgenogram of the dorsal spine showed a slight widening of the interpedicular space at D12.

Lumbar puncture revealed an initial pressure of 170 mm. of water. The cerebrospinal fluid was clear, containing 3 mononuclear cells per c.mm., and 121 mg. per cent of total protein. The manometric test showed a complete block. Myelogram disclosed a "cap-pattern" of a complete block at the level of D12.

A preoperative diagnosis of an intradural and extramedullary tumor was made.

Operation. On Jan. 30, 1957, a complete laminectomy was performed with the removal of the laminal arch of D12, L1 and partial L2. There was no pathology seen outside the dural sac. Palpation through the dura mater revealed an indurated mass at the junction of D12 and L1. A tumor, the size and shape of an olive, was found intradurally in the left ventrolateral aspect of the conus medullaris, with its upper pole pushed into the conus. It wore the conus as a cap. The roots of the cauda equina were wrapped around the tumor and were crowded to the right. There were several large and tortuous blood vessels on the dorsal aspect of the conus, as well as along some of the roots of the cauda equina. The tumor was pale in color and firm in consistency. It was cystic and encapsulated. There were three small cysts
in the rostral portion and four in the lower part of the tumor. The total content of these cysts was about 2 cc. The cystic fluid was xanthochromic in color. The cysts were evacuated and the tumor was completely removed, en masse, after it had been freed from the conus medullaris. The roots of the cauda equina and the conus were well preserved.

**Postoperative course** was uneventful. On the 6th postoperative day the patient could stand well on her toes and the weakness in the legs had practically disappeared. Two days later, she partially regained the control of her bladder and anal sphincters. Since the operation, she had been complaining of an annoying tingling sensation and frequent cramps in both legs. These subsided on the 9th postoperative day. Examination on this day still demonstrated the saddle pattern of hypesthesia, and an absence of ankle jerk on both sides. She was discharged on the 10th postoperative day.

The patient was seen again 5½ months later. There was only partial recovery of bladder function as indicated by the cystometric test. There was no weakness noticeable in the legs. Hypesthesia of the sacral distribution was minimal.

**Pathologic Studies. Gross description.** The surgical specimen was an encapsulated, ovoid-shaped lesion, 2 cm. in its greatest dimension. On cut section, the tumor was seen to be mostly solid, but it did contain several small, cystic areas. The largest cyst measured up to 4 mm. in diameter. The tumor was whitish-gray with sparse yellowish areas, and had a fibrous consistency.

**Microscopic description.** The tumor was composed of multiple kinds of tissue that are foreign to this area. Most of the solid areas consisted of nonstriated muscle which, in some places, formed the wall of the cavities. The cavities were lined by flattened columnar epithelium which was not ciliated (Fig. 1). Several small bundles of peripheral nerves were seen
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running through the tumor, and adult fat tissue was interspersed between some of the bundles of nonstriated muscle. In a few areas, there were structures having the appearance of thyroid acini with colloid in their lumina (Fig. 2).

Diagnosis. We believe that this represents a teratoma because of the presence of various types of tissue, glandular, nerve fibers, muscle, fat and fibrous elements.

DISCUSSION

This case presents a typical clinical history and findings of a lesion involving the conus medullaris and the roots of the cauda equina. The radicular pain experienced by the patient in the right leg during the early course of her illness was probably a result of pressure exerted upon the corresponding nerve by the tumor against the right side of the spinal canal. Later, as the tumor grew and the pressure increased, the pain was replaced by anesthesia in the area involved. At operation, the tumor was seen to be located in the left ventrolateral portion of the spinal canal. The roots of the cauda equina as well as the conus medullaris were displaced and crowded to the right by the tumor. This probably explains the fact that the right leg was involved more than the left.

Including the present case, only 4 teratomas of the conus medullaris have been recorded in the literature.\(^1\) In 2 of these cases, including ours, the tumor was completely extirpated.\(^1\)

SUMMARY

A case of teratoma of the conus medullaris with complete removal and recovery of the patient is described.

REFERENCES