Tumors that compress the spinal cord and produce paraplegia must be removed promptly to prevent permanent damage. The ultimate prognosis, however, depends on the nature of the tumor. This paper reports three benign extradural tumors that simulated malignancy.

Case Reports

Case 1

A 17-year-old girl was admitted to the hospital on January 4, 1959, because of midback pain for 1 month and clumsiness in both legs for 2 weeks. Her past and family medical history were negative.

Examination. The neurological examination showed general weakness equal in both legs with hyperactive reflexes and positive Babinski signs. There was a zone of hyperesthesia at T-3 on both sides. Below the T3-4 level, pain, touch, temperature, and vibration sense were diminished; position sense, however, was normal. The rest of the neurological and general examination was negative. X-rays of the dorsal spine showed erosion at the T-4 pedicles, and a spinal tap gave evidence of complete block. The fluid was slightly xanthochromic with 2+ globulin and a protein content of 89 mg%.

Operation. A laminectomy from T-1 through T-5 was carried out January 8, 1959, under general anesthesia. An extradural tumor extending from T-2 to T-5 was found posteriorly and largely on the left, pushing the dura and spinal cord forward and to the right. At T3-4, the hard grayish-purple tumor was 1.5 to 2 cm thick. Below T-4 the tumor appeared to be fatty and necrotic and about 1 cm thick. At both levels the tumor merged indistinguishably with the extradural fat, and at those points the fat was only 1 mm thick. The tumor was highly vascular, and severe bleeding, generally of arterial type, occurred as it was removed piecemeal. Small bits of tumor had to be left in place because of severe bleeding. The bone did not appear to be involved by tumor.

Pathological Examination. The tumor tissue showed many mesenchymal structures in a haphazard array. Its two most prominent substructures were fat and ostceid trabeculae (Fig. 1). There was no distinct demarcation between these substructures, which tended to merge imperceptibly. A few densely collagenous zones were also present. Many of the osteid trabeculae entrapped single cells within lacunae and were focally mineralized. At their irregular margins were numerous large polyhedral cells and many irregular
Angiomyolipoma

Fig. 1. Case 1. Photomicrograph of a portion of the tumor in which osteoid tissue was prominent. Between the irregular osteoid trabeculae is a loose network of elongated cells and sinusoids. H. & E., X176.

Multinucleated giant cells. From these relatively cellular areas, there radiated loosely arranged irregular strands of elongated cells which merged imperceptibly with a meshwork of very thin-walled sinusoids containing blood.

The fat consisted predominantly of large mature cells and resembled that seen in lipomata. This tissue also contained many irregular thick-walled blood vessels. The thickening was due to the presence of increased smooth muscle, was often eccentric, and in some cases reduced the lumen to a narrow slit. Usually there was no definite adventitia but the smooth muscle merged into surrounding fat. Many vessels contained zones of poorly cellular collagen in their walls. There were no definite elastic laminae. Some vessel walls were infiltrated by polymorphonuclear leukocytes, plasma cells, and occasional mast cells. Inflammatory cells were also present in the interstices between fat cells. A few macrophages contained golden-brown granules, and there were a few aggregates of lymphocytes. Mitotic figures were extremely infrequent and, when seen, were of normal morphology.

Postoperative Course. The patient made a good recovery, with gradual diminution of neurological deficit. She was last examined by Dr. Morris D. Loffman, of Encino, California, 9½ years later. She had completed college, married, and had borne two children. She reported occasional twinges of discomfort lasting a few seconds and some loss of feeling in the left lateral chest wall and left breast, and examination showed anesthesia and analgesia at T4-5 on the left.

Case 2

A 22-year-old man in his first year of medical school was admitted on May 6, 1959, with a chief complaint of incoordination and weakness of the legs of 1 year's duration, and intermittent interscapular pain during the preceding 3 to 4 years. More recently there had been occasional loss of urinary control and on the day before admission diarrhea with bright red blood.

Examination. In the hospital the diarrhea and bleeding stopped, and proctoscopy was negative. The neurological examination showed moderate weakness in the legs, more on the right, some ataxia of gait, hyperactive leg reflexes, left ankle clonus, with bilateral Babinski responses. There was also a sensory level at T-4 on both sides, below which there was diminution of pain, touch, temperature, and vibration sense. X-ray films showed an increase in density of the fifth thoracic body and right pedicle. Spinal fluid showed a complete manometric block; the fluid was xanthochromic, the globulin 2.1+, and the protein content 499 mg%. Myelography from below revealed that the block was complete at T7-8.

First Operation. Because of rapidly increasing weakness in the legs an emergency laminectomy was carried out on May 15, 1959. From T-3 to T-9 there was a large extradural mass 1 to 1.5 cm thick. It was soft and yellowish but was interspersed with numerous large arteries and fibrous bands. The dura was depressed about 0.5 cm away from the edge of the bone. Bleeding was unusually profuse. The lower end of the tumor was exposed and removed, but the upper end was never reached. Arfonad was necessary to lower systolic blood pressure to 70 to 80