Benign Osteoblastoma of the Spine with Multiple Recurrences
Case Report

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Benign osteoblastoma, an infrequently occurring tumor of bone, has been previously reported in the neurosurgical literature by Otis and Scoville. This case is of interest because of the symptoms produced, the technical problems involved in its management, and, more particularly, because it has recurred, necessitating operation on four occasions since the patient was first seen.

Case Report

The patient was first seen at the age of 19 years at the Henry Ford Hospital in August, 1965, with complaints of pain in the right testis, right side of the penis, and numbness with weakness of the right leg. He had been well until March, 1965, when he had fallen approximately 3 feet during a gym class, striking the lumbar region. Three weeks later low back pain developed, and he was examined in another hospital, including myelography which was allegedly negative; no additional studies were carried out. He was placed in traction, which provided some relief after 2 weeks of hospitalization. Intermittent sciatica was present thereafter, but significant pain and alteration in his complaints did not develop until 2 weeks prior to his first admission here. Coughing and sneezing increased the pain as did walking and other normal activity.

First Examination. There was tenderness over the upper lumbar spine and marked restriction of forward bending because of pain. Weakness was marked in the right ileopsoas, hamstrings, and plantar flexors. Moderate weakness was present in extension of the foot, and slight weakness in the quadriceps. Loss of sensation to pin prick and touch extended over the anterior and lateral thigh and leg. There was distinct sacral sensory loss over the right buttock with absent perineal reflex on the right. There was no alteration of sensation in the left lower extremity. The abdominal reflexes as well as the cremasteric reflexes were present. The patellar reflex was absent on the right, 2 plus on the left. The Achilles reflexes were bilaterally 1 plus, and the plantar responses down-going. The gait was disturbed, with limping and a tendency to drag the right leg; he was unable to walk on the right heel or toe. Straight leg raising on the right was painful at 70°, with pain referred particularly to the hip. On the left no pain was present at 90°.

X-ray studies (Fig. 1) of the lumbar spine revealed a destructive lesion of the right lateral portion of the vertebral body at L-3. There was calcification extending to the right of the body of L-3, as within a mass. A myelogram showed an extradural defect at L-2 and L-3 with complete block, the dye having been introduced from above. Additional laboratory studies were normal.

First Operation. A lumbar laminectomy was done on August 18, 1965, from L-1 through L-4. Remarkable bleeding ensued from a tumor extending from L-2 through L-4. Friable, red-brown, and hemorrhagic, the tumor peeled from its lower extent over the dural sac with relative ease. Bleeding interfered with attempts to completely remove the tumor. A frozen section diagnosis of hemangioendothelioma also discouraged radical removal. Final pathologic diagnosis was benign osteoblastoma.

First Postoperative Course. The patient made a rather uneventful recovery and received a course of Cobalt 60 teletherapy following the procedure because it was known that the tumor had not been completely removed. There was pronounced neurological defect, and for some months he required the use of foot-drop braces bilaterally. This deficit receded and by March, 1966, he wore a brace on the right foot only intermittently.

In August, 1966, pain again developed, gradually became more and more severe, and was associated with increasing numb-
essentially had tension of radiation through the weak tissue. Admitted large sided. of ettes. There was the weakness. Fro. growth again, to be walked. A dense overgrowth of fibrous tissue was present in addition to bony overgrowth that had occurred at the L-3 level. Again, extensive bleeding was present. A large mass of the tumor was removed. Curettes were used. The tumor mass extended to L-4, and a clip was placed at the lower level of tumor removal, but this was not thought to be the lowest extent of the tumor growth.

Second Postoperative Course. The patient had an uneventful recovery. Back pain subsided. Straight leg raising was not painful. Dorsiflexion of both feet was strong, but extension of the right great toe remained weak. The patellar and Achilles reflexes remained absent on the right. A mild hypesthesia persisted over the dorsum of the right foot.

In May, 1967, the patient again began to have significant pain with or without activity. There was flattening of the lumbar curvature and soreness to percussion. Hypesthesia was present over the S-1 dermatome, as described previously, and sensory loss had recurred over the sacral dermatomes on the right side.

Third Operation. The patient was readmitted to Harper Hospital and re-explored without myelography on June 14, 1967. Again, the blood loss was profound. The operation now extended from L-1 through L-5. The lower as well as the upper limits of the tumor were completely removed. The source of the tumor mass at the L-2 and L-3 level was curetted after the tumor had been removed from a position overlying the dura. Retraction of the dural sac enabled curettage to be carried out beneath it after the overgrowth of bony proliferation which had developed at the L-3 and -4 level had been removed, and the point from which the lower-most tumor extension had been removed marked with a silver clip.

Third Postoperative Course. Again, recovery was satisfactory, but this time another course of radiotherapy was instituted.

From July, 1967, to March, 1968, the patient had no difficulty. There was mild residual weakness of the dorsiflexors of the right leg. The pain was present in the back with radiation into the right leg posteriorly and into the calf, with the numbness following essentially the same distribution as before.

There was no weakness of the iliopsoas, quadriceps, or hamstrings. However, some weakness was present in the dorsiflexors of the right foot, and particularly the extensors of the great toe. The patient was able to walk on his toes, but not on his right heel. The patellar reflexes were 1 plus bilaterally. Both Achilles reflexes were absent. There was hypesthesia over the anterolateral calf and dorsum of the foot on the right. He was admitted to Harper Hospital where myelography again revealed a block at L-2.

Second Operation. On September 23, 1966, exploration was carried out from L-1 through L-4. Dense overgrowth of fibrous tissue was present in addition to bony overgrowth that had occurred at the L-3 level. Again, extensive bleeding was present. A large mass of the tumor was removed. Curettes were used. The tumor mass extended to L-4, and a clip was placed at the lower level of tumor removal, but this was not thought to be the lowest extent of the tumor growth.

Second Postoperative Course. The patient had an uneventful recovery. Back pain subsided. Straight leg raising was not painful. Dorsiflexion of both feet was strong, but extension of the right great toe remained weak. The patellar and Achilles reflexes remained

Fig. 1. Post-laminectomy films showing bone lesion. Left: Anteroposterior view. Right: Lateral view.

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