POSTOPERATIVE BONE CHANGES FOLLOWING LUMBAR DISC REMOVAL

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SINCE the surgical technique for the removal of protruded lumbar discs has been perfected and most aspects have been standardized, many thousands of victims of sciatica have been relieved of their misery. Fortunately, serious complications of disc surgery are rare. After more than four thousand operations performed at this clinic, there have been no deaths and when infections occurred they have been superficial. In our recent survey in which the patients were followed from 1 to 20 years, 97.6 per cent stated they were benefited by operation. A commonly accepted but unexplained fact is that far too many patients complain of pain in the back and extremity for weeks and frequently months following the most simple of disc procedures. Extenuating circumstances, such as a desire for compensation and emotional factors, are probably all too often blamed in the absence of other known causes. The pain is usually not severe, improves steadily and in most instances the patient is grateful for his operation. However, we have upon five occasions among our entire group of patients encountered painful postoperative complications of such severity as to require prolonged therapy and weeks in bed. That this complication may be postoperative inflammatory disease in the lumbar disc space, as described by Turnbull,6 has been recognized. Since the causes of osteomyelitis are multitudinous, the papers of Ghormley et al.,2 Harbin and Epton,3 Mayer,4 Smith,5 and Ford and Key1 may describe this condition adequately. However, our patients did not present the clinical picture of an acute inflammatory process. They rapidly improved once the nature of their illnesses was recognized and treatment begun. Two were reoperated upon and no evidence of infection was noted. Bacteriologic studies were negative, and upon reviewing sections of tissue, no evidence of infection was discovered. The following are short summaries of these cases.

CASE REPORTS

Case 1. #299298. A.C.H., a 59-year-old white female, was seen in consultation with the late Dr. Willis C. Campbell on Feb. 29, 1940. She complained of pain low in the back with left sciatic radiation of 6 weeks' duration.

Examination. Neurologic findings were typical of a ruptured lumbar disc—spasm of muscles in the lower part of the back, extreme pain on straight leg raising, hypoesthesia and hypalgesia over the lateral aspect of leg and foot, and diminution of the
Achilles reflex. Roentgenograms of lumbosacral spine and pelvis were normal (Fig. 1A). Blood and urine were normal.

**Operation** (Francis Murphey). On May 19, 1940, a typical ruptured 5th lumbar disc on the left side was removed by pituitary forceps and curette.

**Postoperative course** was uneventful until the 5th day when excruciating pain occurred low in the back. The slightest spinal motion accentuated the pain. Large amounts of sedation were required and a body cast was applied without improvement. A daily rise in temperature to 100°–101°F. (37.8°–38.4°C.) occurred for almost 3 weeks. Repeated counts of blood cells, however, were normal.

Roentgenogram of the spine on June 17, 1940 (29 days postoperatively) disclosed a destructive lesion involving the 5th lumbar joint (Fig. 1B). The adjacent vertebral surfaces were affected by an osteolytic process.

**2nd Operation** (Francis Murphey). On June 24, 1940, the wound was reopened. The intervertebral space was almost empty of material and no signs of infection were encountered. Only a small amount of cartilaginous material could be removed from the intervertebral space. Biopsies were taken from the vertebral bodies.

**Microscopic Examination.** The biopsy material was reviewed by Dr. Frank W. Foote, Jr. There was no evidence that the lesion was inflammatory. The lesion suggested a chordoma, but no definite conclusions could be reached.

**Postoperative Course.** Pain continued unabated. On June 29, 1940, roentgenologic therapy (300 r) was administered to the involved spine. After three such treatments her pain ceased. A total of 1500 r was given in five treatments. She was discharged from the hospital free of pain on July 27, 1940.

**Follow-Up.** On Sept. 19, 1940, 4 months after her original operation, an almost complete bony fusion of the lumbosacral joint was seen on roentgen-ray examination (Fig. 1C). The patient has remained asymptomatic. When last heard from in 1954, she felt she had been benefited 100 per cent by her operations, she no longer experienced pain in the back and only occasionally was there discomfort of the extremity. She had done all of her own housework since surgery.

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**Fig. 1. Case 1.** (A) 5-15-40. Preoperative view. (B) 6-17-40. Narrowing of lumbosacral joint space with irregularity of opposing vertebral surfaces, 1 month postoperative. (C) 9-19-40. Bony fusion of lumbosacral joint, 4 months after first operation.