Post-discectomy tuberculous abscess

Case report

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An unusual case of occult vertebral tuberculosis was detected after posterior drainage through a previously created lumbar laminectomy wound for removal of an L-5 disc extrusion. Diagnosis, treatment, and possible pathogenesis are discussed.

KEY WORDS laminectomy · vertebral tuberculosis · tuberculous abscess · drainage

It is common for a tuberculous abscess to drain posteriorly in the lumbar area instead of anteriorly in the inguinal area. Although vertebral tuberculosis or Pott’s disease has been discussed frequently, a search of the literature has not revealed a case similar to this one.

Case Report

In July 1967, a 31-year-old man was admitted for disabling low back and left leg pain without known antecedent trauma or serious disease; he also had had left lower abdominal, testicular, neck, and right arm pain, all of which had been relieved with cervical traction elsewhere. He had been afebrile.

Examination. The neurological examination was normal except for moderate weakness of the left extensor hallucis longus and peronei, marked limitation of all lumbar motion, lumbar muscle spasm and bilaterally diminished ankle reflexes. Complete blood count, urinalysis, cerebrospinal fluid studies, chest x-ray, and lumbar spine films were normal. Lumbar myelogram, July 11, 1967, revealed an extradural defect at the L-5 disc space on the left which extended superiorly.

First Operation. On July 13, 1967, minimal partial hemilaminectomies were performed at L-5 and L-4 on the left. A tear in the L-5 annular ligament with a large superior extrusion of degenerative disc material was found. The L-5 disc was removed with pituitary ronguers and curettes. The L-4 disc was explored and appeared intact. The microscopic diagnosis was “tissue compatible with intervertebral disc.” No other abnormalities were noted grossly or microscopically. The 7-day postoperative course was uneventful. The patient remained afebrile and he was relieved of his leg pain. The patient still had some low back pain and stiffness at his first postoperative examination August 17, 1967, but otherwise was doing well. He had lost 15 pounds as recommended. He had prominent, tight musculature. His strength and sensation were normal except for numbness of the left great toe. The ankle reflexes were diminished. He requested prescriptions by telephone for mild analgesics during August and September, 1967, because of “soreness and discomfort in his back.” On September 19, 1967, he reported by telephone that his wound seemed to be swelling and that for the past week he
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was having excessive perspiration and temperature elevation at night. At his second postoperative examination on the following day, the lumbar region was swollen, fluctuant, and warm. The laminectomy scar had divided at midpoint because of underlying pressure. There was no drainage, but subcutaneous tissue was visible. He had lost 38 pounds since surgery. Following examination he was admitted to the Baptist Hospital, Memphis, Tennessee (September 20, 1967) with a temperature of 100.6°F. Lumbar spine films were considered normal except for the partial hemilaminectomy defects. Laboratory studies were normal.

Second Operation. The previous incision was opened under local anesthesia on the night of admission. Approximately 35 cc of purulent material exuded from multiple subcutaneous pockets. Gray, rubbery tissue surrounded the purulent material. There was a very firm gray abscess wall, which was excised. The abscess seemed to arise above the lumbodorsal fascia. The wound was left open and packed with iodoform gauze. Stains and cultures for bacterial pathogens, tubercle bacilli, and fungi were negative. Because of the gross purulent appearance, staphylococcus aureus was the suspected pathogen. The patient was placed on Chloromycetin intravenously after the cultures were taken at surgery. The wound was irrigated daily with sterile solutions. The patient perspired profusely and remained febrile (101°F to 102°F), especially in the evening. No growth was seen on the cultures by the 7th postoperative day. Chloromycetin was discontinued. Microscopic studies of the abscess wall were reported as showing purulent, fibrocaseous, granulomatous tissue (Fig. 1). Stains for acid-fast bacteria and fungi were considered negative. Intermediate strength PPD skin test for tuberculosis was positive (15 mm induration). The patient was questioned at this time, and he again denied a family history of tuberculosis. He stated that he had courted a young woman in 1954 who later spent 2 years in a tuberculosis sanitorium. A histoplasmin skin test was negative. Because of persistent drainage from the packed wound, it was suspected that the origin of drainage was below the lumbodorsal fascial suture line.

Third Operation. On September 27, 1967, the lumbodorsal fascia was incised under local anesthesia, and a purulent core surrounded by cheese-like, tan-gray material was found. A firm abscess wall was excised from the left paravertebral musculature. Cheese-like material extended to the posterior part of the dural sac at the L-4 and L-5 operative sites. Copious irrigation and debridement were performed; the wound was left open to granulate. The histopathological report was "mixed granulation tissue; acute and granulomatous inflammation; no organisms demonstrated with stains for pathogens, acid-fast bacteria, fungi." The patient was then placed on Prostaphlin and streptomycin. For the next 5 days the wound was irrigated daily with Furacin. The returns from the irrigation eventually became clear. The temperature gradually decreased from 102°F to 99°F. Chest films revealed a shadow suggesting mild pneumonitis in the lingular lobe of the left lung.

Fourth Operation. October 3, 1967, under general anesthesia, additional fragments of the thickened capsule of the granulomas

Fig. 1. Photomicrograph of tuberculosis lumbar granuloma with abscess formation showing caseous material surrounded by macrophages, collagenous material, and Langerhans giant cells. H & E, ×200.
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were removed from the lumbar muscle and extradural region. The disc space explorations at the L-4 and L-5 levels revealed no grossly visible granulomatous tissue anterior to the dural sac. The L-4 disc was normal. The wound was irrigated well. Two No. 8 French catheters with multiple openings were placed at the level of the hemilaminectomies. The wound was closed loosely with mattress sutures which incorporated the muscle-fascial layer and the skin. Two Penrose drains were placed in the subcutaneous tissue. The catheters and the Penrose drains were withdrawn some each day and removed on the 4th postoperative day. The wound healed satisfactorily, but the temperature remained in the range of 99°F to 100°F. Prostaphlin and streptomycin were discontinued October 6. Again, there was no growth noted on culture. Three blood cultures yielded no growth. Repeat chest films October 6 were considered normal.

A medical consultant from the West Tennessee Tuberculosis Hospital pointed out that the patient had had the "flu" during March, 1967, at which time he had chills and fever for a few days followed by prompt, complete recovery. The consultant also elicited a history that the patient had consumed non-pasteurized milk as a youngster on numerous occasions. The patient denied cough, hemoptysis, chest pain, previous significant respiratory disease. The consultant's medical examination on October 6 was normal. Fungus serologies, febrile agglutinins, 24-hour urine culture, and repeat chest films were normal. The consultant stated that he strongly suspected tuberculosis, but he noted that other granulomatous infections should be ruled out. The afebrile patient was dismissed from the Baptist Hospital October 13, 1967, with previous arrangements having been made for institution of therapy with isonicotinic acid hydrazide (INH), para-aminosalicylic acid (PAS), streptomycin.

Fifth Operation. The patient was admitted to the West Tennessee Tuberculosis Hospital on October 13, 1967, when the wound was incised, drained and cultured. Following the culture the patient was started on 300 mg of INH, 12 gm of PAS daily, 1 gm of streptomycin daily. On October 30, 1967, a culture obtained September 27, 1967, revealed that acid-fast bacteria (neutral-red positive) were growing on special media. Subsequently, acid-fast bacteria were reported on the culture obtained October 3, 1967. No acid-fast bacteria were grown from the urine culture. In December, 1967, the original granuloma specimens were reviewed in detail by a pathologist at the West Tennessee Tuberculosis Hospital, and tubercle bacilli were found in the granuloma specimen; the same pathologist found no evidence of inflammation or acid-fast bacteria in the original disc specimen of July 13, 1967. Chest and spine films were normal in February, 1968.

The patient was discharged from the West Tennessee Tuberculosis Hospital, February 7, 1968, and returned to work in May, 1968. The patient reported in September, 1971, when he was examined for a flexion-extension injury of his neck and lumbar spine, that he had done well without signs of recurrence of tuberculosis or significant back pain since February, 1968, when he stopped taking antituberculous medications (against medical advice). Cervical and lumbar films in September, 1971, revealed no evidence of tuberculosis of bone such as vertebral destruction adjacent to a disc space, vertebral collapse, bone sclerosis, or evidence of a psoas abscess. At no time was tomography performed.

Discussion

The author has been unable to find a previously reported case similar to this one. In this patient apparently the hemilaminectomies and/or curettement of the L-5 disc space led to the clinical appearance of occult tuberculous infection in the low lumbar region; the infection once activated drained posteriorly into the wound tract.

The literature is replete with cases of Pott's disease or tuberculosis of the spine associated with abscesses which indolently come to the skin. The tuberculosis abscesses usually drain anteriorly down the psoas muscles from the lower thoracic and upper lumbar vertebrae. The point of exit of these draining "cold abscesses" is usually in the groin, rather than in the lumbar area posteriorly. Tuberculous spondylitis is apparently much less common in the lower lumbar region. Trauma to a vertebra has been mentioned as a possible contributing factor in the
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activation of tuberculous spondylitis.® Curettage of a disc space must be considered a form of trauma.

The possibility that the tuberculous infection was introduced from an external source at the time of initial surgery could be considered, but this seems unlikely since there was no evidence that either the personnel or instruments involved had been contaminated with tuberculosis.

References

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