Decompression laminectomy at L4 to L5 was performed in January 1993. The ligamentum flavum was severely thickened and the epidural space contained a white toothpaste-like material. The patient was relieved of her symptoms immediately after the operation. Tissue obtained from the spinal canal revealed crystals typical of calcium pyrophosphate when viewed by polarised light (Fig. 3).

**Discussion.** Stenosis of the spinal canal is most common in the lumbar region. It has been well described by Wilte et al (1984). The most common cause is degenerative arthritis but this usually results in a lateral recess or foraminal type of stenosis. Central lumbar spinal stenosis can be congenital as in achondroplasia or acquired as in post-traumatic deformity and osteoarthritis, Paget’s disease, fluorosis or any cause of epidural infiltration.

Intermittent claudication with strong peripheral pulses is typically seen in central lumbar stenosis and neurological claudication of this type begins and intensifies with walking and is not completely relieved by rest. CT is used to demonstrate and measure canal diameter in central stenosis; in this case it showed ectopic calcification. Spinal decompression gave immediate and complete relief of symptoms.

No benefits in any form have been received or will be received from a commercial party related directly or indirectly to the subject of this article.

**REFERENCE**


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**THE FIRST USE OF STREPTOMYCIN FOR BONE TUBERCULOSIS: A 47-YEAR FOLLOW-UP**

**MARK B. COVENTRY**

On 12 June 1946 a six-year-old girl was seen at the Mayo Clinic with a six-month history of pain in the right wrist. The dorsum of the wrist was swollen, tender and red and there was fluctuation, local warmth and pain on movement. Radiographs showed severe lysis of the carpal bones and the bases of the metacarpals (Fig. 1). A chest radiograph revealed no evidence of tuberculosis, but a Mantoux test was positive.

The patient’s mother had had ‘pleurisy with effusion’ four years earlier, with a positive tuberculin test, and had been treated with chemotherapy for pulmonary tuberculosis in a sanitorium. The child had occasionally visited a neighbour who had active tuberculosis, and had also drunk unpasteurised milk.

Aspiration of the wrist obtained cloudy, blood-stained fluid, but direct smears, cultures and guinea-pig inoculations were negative. Histological examination of an open biopsy specimen, however, showed caseous tuberculosis.

At that time, streptomycin had just been made available for guinea-pig experiments in the Mayo labora-
Figure 1 – Radiographs taken in 1946 showed diffuse destruction of the carpus and the bases of metacarpals two to five. Figure 2 – Eight months after completion of chemotherapy there was some reconstitution of bone and the periosteal reaction had subsided.

Figure 3 – In 1953, seven years later, there was complete fusion of the radial carpus to the second, third and fourth metacarpals. Figure 4 – In 1993, 47 years after the initial treatment, there had been little change.

tories of Drs William H. Feldman and H. Corwin Hinshaw, and its use had been authorised for patients with pulmonary tuberculosis. The author received permission from Dr Hinshaw to administer streptomycin to the patient. She was admitted to hospital and received 800 000 units of streptomycin daily, by intramuscular injection in four divided doses, from 10 September 1946 to 4 December 1946. She was then discharged from hospital, wearing a wrist splint.

Follow-up at three months, eight months, and 14 months revealed slow improvement, and after 14 months she was allowed to discard the splint. Radiographs taken one year after her first attendance, and eight months after cessation of treatment, showed healing with reconstitution of the affected bones (Fig. 2). At seven years’ follow-up the radiographs showed fusion of most of the carpal and carpometacarpal joints (Fig. 3).

In 1993, when she was 53 years old, the patient sustained a minor injury and was seen by Dr Gerald R. Herrin, of Pierre, South Dakota. She was working hard managing a restaurant and although she was right-hand dominant, she denied any real problems with her wrist. Radiographs were essentially unchanged since 1953 (Fig. 4). The carpometacarpal joint of the thumb was function-
ing and the fifth carpometacarpal joint was visible but narrowed. The second, third, and fourth metacarpal bones were united to the adjacent radial carpal fusion.

This patient is probably the first to have received streptomycin for the treatment of skeletal tuberculosis (Hinshaw and Feldman 1945, 1946; Hinshaw, Feldman and Pfuetze 1946; Walker, Hinshaw and Barnwell 1949; Hinshaw, personal communication, 1993). At 47 years’ follow-up she has only minimal functional disability.

No benefits in any form have been received or will be received from a commercial party related directly or indirectly to the subject of this article.

EARLY FAILURE OF METAL-BACKED PATELLAR ARTHROPLASTY

NIELS LEVI, HAKON KOFOED

Baech and Kofoed (1991) reported an 11% incidence of early failure of metal-backed patellar prostheses and anticipated that this was likely to be only the tip of an iceberg.

Patients and methods. From March 1987 to September 1990, a total of 151 AGC 2000 total knee replacements (Biomet Corp, UK) were inserted into 136 patients for osteoarthritis of the knee. Lateral release was never used: there were no severe valgus deformities. All components were fixed with bone cement. Suctions drains, continuous passive motion and prophylactic antibiotics were used in all cases.

Radiographs were taken within two days of operation and after three months, one year, and the onset of any complication. We have reviewed these for changes in the position of the prosthetic component and the hip-knee-ankle (HKA) angle. The mean follow-up was 39 months (18 to 60).

Results. The metal-backed patellar component failed in 14 of the 151 cases after an average time of 18 months. All 14 patients presented with pain and swelling, but radiography, including skyline views, showed abnormalities in only eight. The average HKA angle was 175°.

Discussion. Our results are very similar to other reported series (Table I). For all nine reports the average failure rate was 8.5% at an average time of 16 months. The results of the review suggest that most of the 8% to 11% failures occur within two years and that this rate does not increase with longer follow-up.

No benefits in any form have been received or will be received from a commercial party related directly or indirectly to the subject of this article.

REFERENCES


Hinshaw HC, Feldman WH, Pfuetze KH. Treatment of tuberculosis with streptomycin: a summary of observations on 100 cases. JAMA 1946; 132:778-82.


Table I. Results in nine studies

<table>
<thead>
<tr>
<th>Author</th>
<th>Follow-up (mth)</th>
<th>Failure rate Number</th>
<th>Per cent</th>
<th>Mean time to failure (mth)</th>
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<td>Stulberg et al (1988)</td>
<td>19</td>
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<td>Sutherland (1988)</td>
<td>?</td>
<td>2/7</td>
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<td>14</td>
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<td>Felmet, de Nicola and Springorum (1989)</td>
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<td>Andersen, Ernst and Frandsen (1991)</td>
<td>14.5</td>
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