Intervertebral Disk Space Infection Following Translumbar Aortography

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After 1,748 translumbar aortograms three cases of intervertebral disk space infection were observed over a five-year period, for an incidence of 0.15%. Cultures suggested that the intervertebral disk had been inoculated with digestive tract organisms by the needle used to puncture the aorta. Diagnosis of this complication can be made early by retrieval of the responsible organisms from the intervertebral disk under CT control. Treatment consists of prolonged immobilization associated with appropriate antibiotic therapy for at least three months. (Ann Vasc Surg, 1986, 1, 382-385).

KEY-WORDS: Intervertebral disk space infection. — Translumbar aortography.

Aortography by direct puncture of the abdominal aorta was introduced by Dos Santos more than 50 years ago (1934). Because of some of the associated complications and shortcomings, this method was gradually abandoned in favor of percutaneous femoral catheterization. The complications of translumbar aortography are rare and usually secondary to the aortic puncture and the extravascular injection of contrast medium. Cases of septic needle inoculation of the intervertebral disk are very rare. We report here three personal observations of vertebral disk infection.

CASE REPORTS

Case 1

A 44 year-old man had a translumbar aortogram for lower limb rest pain. The puncture of the abdominal aorta, made under general anesthesia, was difficult because the abdominal aorta was small and several attempts were necessary before a successful puncture was achieved. Upon awakening the patient experienced lumbar pain. On the following day, his temperature was 38.3°C. A retroperitoneal hematoma was ruled out by sonography. Pain was relieved with analgesics.

Five weeks later, the patient complained again of lumbar pain. Pain was provoked by palpation of the 2nd and 3rd lumbar spinous processes. Alpha-2 globulins and the erythrocyte sedimentation rate were elevated. Conventional roentgenograms of the lumbar spine were normal. Technetium and gallium scans showed uptake at the level of the 2nd and 3rd lumbar vertebral. This diagnosis was confirmed by tomography of the spine which showed a narrowed L2-L3 disk, symmetrical punched-out lesions and condensation in the adjacent vertebrae. CT scan confirmed the destruction of the L2-L3 disk. There was increased uptake of contrast medium in the paravertebral soft parts, suggesting inflammation. The patient refused a percutaneous...
biopsy. Because of the extent of lesions, surgical curettage of the L2-L3 disk was performed. Bacterial culture of the debris recovered during surgery grew *Escherichia coli* and Enterococcus. Recovery required after three months of antibiotic therapy and two months' rest.

**Case 2**

A 42 year-old man underwent translumbar aortography for intermittent claudication. In the following hours, he experienced abdominal pain. Ultrasonography was normal. A laparotomy was carried out and the diagnosis of acute pancreatitis was established. One month later, the patient was hospitalized for left lumbar and groin pain associated with moderate spinal pain without fever. The erythrocyte sedimentation rate was elevated but the leukocyte count was normal. Diagnosis of L2-L3 intervertebral disk infection was eventually made six weeks after aortography. Plain roentgenograms showed erosive lesions on the upper and lower end plates. Technetium and gallium scans demonstrated increased uptake at this level. Cultures of the specimen obtained from the disk grew coliform bacteria. Recovery was achieved after eight weeks of antibiotic therapy and bed rest. An aortofemoral prosthesis was inserted a few months later. The postoperative course was uneventful.

**Case 3**

A 57 year-old man had a translumbar aortogram for intermittent claudication. On the films, the needle was seen to be correctly placed and there was no extravasation of contrast medium. A right aortofemoral bypass procedure was performed via the retroperitoneal route one week later. The postoperative course was uneventful. Shortly after being discharged and three weeks after the aortography, the patient complained of lumbar pain associated with constipation and low-grade fever. Ultrasonography was normal. Roentgenograms demonstrated that the end plates of the 3rd and 4th lumbar vertebrae were altered (Fig. 1). A technetium scan revealed abnormal uptake at this level. The percutaneous puncture of the disk yielded pus which, after cultures, grew *Escherichia coli*. The CT scan showed a disc abscess which did not communicate with the prosthesis (Fig. 2). Recovery was obtained by antibiotics and immobilization in a plaster shell cast for two months.

**DISCUSSION**

The rate of intervertebral disk space infection is rising continuously due to the increase in the frequency of invasive diagnostic procedures. Seror et al. [1], reported that 20 % of intervertebral disk space infections, due to common bacterial agents, belong to this category. In a national study, Caroit et al. [2] recorded all cases of inoculated intervertebral disk space infections. Surgery of the intervertebral disk was responsible for 58 % of cases. The rate of complications, after arteriography, is far less than that reported after disk radiography which is estimated at 13 %. Of 1 748 examinations performed in the Service Central de Radiologie of the Centre Hospitalier Regional in Nancy, France, we only know of three cases of intervertebral disk space infection, a rate of 0.17 %. These cases form the basis of our report.