

Lesson of the Week

Pathological vertebral fractures after spinal manipulation

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Manipulation of the spine without anaesthesia is a common treatment for back pain performed by doctors, physiotherapists, and other practitioners, but this is not safe if the spine is affected by a malignant process. I describe two patients who sustained fractures of the vertebral bodies compromised by a malignant process during manipulation of the spine for back pain.

Case 1

A 52 year old airline employee presented in August 1983 with a six month history of pain in the thoracic spine, which had developed suddenly while he was mending a window. Three months after onset the pain had worsened, but radiographs requested by his general practitioner were reported as showing only degenerative changes, and the haemoglobin concentration and a full blood count were normal. The specimen tube for estimation of plasma viscosity was lost. Three weeks before presentation he had undergone three sessions of manipulation of the thoracic spine by a physiotherapist. After this he had noticed that the thoracic spine was unstable and he could stand upright only by levering himself upwards with his thumbs tucked into the waistband of his trousers.

Examination showed a knuckle kyphos at the level of the ninth thoracic vertebra, and this area was tender. Straight leg raising was 90° on each side and there was no neurological deficit in the legs or other symptoms or signs of cord compression. Radiographs disclosed a pathological crush fracture of the ninth thoracic vertebral body with circumscribed radiolucent areas suggestive of multiple myeloma in the ribs and pelvis. Review of the previous films showed that these deposits were present at that time. Multiple myeloma was confirmed by examination of the bone marrow. Immunoelectrophoresis showed an abnormal band of IgG κ protein. The pain from the fracture resolved with local radiotherapy and chemotherapy with melphalan and prednisone.

Case 2

A 55 year old woman complained of low back pain and left sciatica affecting the lateral aspect of the thigh and the ankle. She consulted a lay manipulator and no radiographs were taken of the spine. She underwent a spinal manipulation at 10 am but during the day noticed progressive weakness and numbness of her legs. By 10 pm the next day examination showed that she was almost totally paraplegic with power of only MRC grade 1 in the right toes. There was complete loss of sensation to touch in the third lumbar dermatome and below, including saddle anaesthesia. Radiographs of the lumbar spine showed a compression fracture with left lateral wedging of the second lumbar vertebra. The neoplastic process could be seen to affect the pedicles also. A myelogram showed a complete block at the affected level (figure).

Urgent decompression was undertaken. A complete laminectomy of the second lumbar vertebra and partial laminectomies of the first and third lumbar vertebrae were made. Much bruising of the dura and epidural fat was uncovered, particularly on the left, but there was no haematoma anterior to the cord. The left hand pedicle was included in the malignant process and a

Spinal manipulation in a conscious patient may cause pathological fracture and paraplegia



Lateral myelogram showing complete block opposite second lumbar vertebra which is site of pathological fracture. Pedicles are also affected by tumour.

biopsy specimen showed infiltration with adenocarcinoma, possibly of renal origin. Postoperatively she made good progress, and six weeks later she had full control of her bowel and bladder and was able to walk using the left footdrop splint and a walking frame. Three months after operation she could walk unaided.

Comment

It is estimated that over a million patients a year consult their general practitioner for back pain and 0.3 million are referred to hospital, accounting for 20-35% of all new orthopaedic referrals. Long outpatient waiting lists and the personal preference of some patients cause many patients to bypass the normal referral system and some, by choice, do not consult their general practitioner. Such

patients are clearly running the risk of inappropriate treatment of their backache if this is due to an underlying pathological process. Nevertheless, the routine orthodox medical assessment of back pain has been described as imprecise and unreliable.¹ Clinical examination, even when lumbar flexion is carefully assessed, is not helpful in the diagnosis of spinal tumours, although it is more helpful in infections.² Radiography is the most commonly used screening investigation but false negative appearances may occur in 19% of cases.² Isotope bone scanning may detect pathological conditions earlier than radiography but overall has only a similar detection rate. The importance of the sedimentation rate or plasma viscosity in back pain is variously described. Estimation may be thought essential,³ but trials of manipulation in low back pain have been conducted without the investigation being performed.⁴ A sedimentation rate exceeding 25 mm in the first hour (Westergren) may have a sensitivity of only 59% and, while helpful, is not by any means reliable in excluding disease.

Back pain is a very common presenting complaint and usually has

a mechanical basis. In a small proportion of patients the symptoms are due to an underlying malignant or infective process. Radiological and serological investigations are not infallible, and a high index of suspicion must be maintained in all stages of the diagnostic process to ensure that inappropriate treatment is not given.

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References

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Medicine and the Media

IN THE media doctors are a seriously discriminated against minority, says Professor Alan Thompson, professor of economics at Heriot Watt University, and formerly chairman of BBC Scotland, parliamentary adviser to ITV, and a Labour member of parliament. He talks here to Dr Ian Deary, a psychiatrist who is currently lecturer in psychology in Edinburgh University, about his ideas on the presentation of medicine on television, particularly on Channel 4.

IJD: Before Channel 4 began the *BMJ* published a leading article arguing that the new channel could make a brave new start with presenting medicine on television (1980;280:504). Do you think it has succeeded?

AT: No, it hasn't lived up to its promise and responsibility to provide a voice for medical education and doctors. There have been good programmes like *Sex Matters*, but that was with the channel's usual emphasis on the humanistic and the social. I don't think it has provided doctors, an informed minority group in the community, with a platform.

IJD: Don't people hear enough from doctors already?

AT: They hear doctors being interviewed and confronted by media interviewers with challenges. They are often boxed in by the way that questions are addressed to them. I admit that doctors are well represented in the media as a whole. In drama there are few groups that get the deferential, idealised treatment that doctors receive, but this is not reflected in medical information programmes. Also, there is a tendency for rather whimsical magazine programmes where it is difficult to get an informed medical message across.

IJD: But don't most people want magazine programmes rather than something that might be perceived as didactic, heavy, and boring?

AT: I am not deriding the media expertise that chooses issues and methods of presentation that get across to the most people. I think that is a valuable expertise.

The problem is that most media people are social science trained: their background is sociology, politics, the human sciences. There are not so many of a scientific or analytic bent, which, it seems to me, would be more suited to the production of medical pro-

grammes. They look for the humanistic and social aspects of medical issues. I am not saying that these are not important, but they are over-included to the detriment of progress reports of the state of medical science.

IJD: Why have the programme makers not invited doctors to take a greater part in the choice of issues and presentation methods?

AT: The media people like to present programmes their way, and they know what will hold an audience better than the experts. But when it comes to doctors there is a more complicated attitude. The humanistic bias of programme makers make them slightly hostile to doctors' one of the last bastions of authority in British society. They still imagine the authoritarianism of the silver knob cane consultant and the pomposity with which he speaks and the deference with which it is thought he likes to be treated. We do not get the best out of doctors by constantly confronting them with the so called "health lobbyists" and the sandals and brown bread people. The latter do have many cogent points to make, but the treatment of orthodox medicine as something authoritarian and suspect (to be demolished by more free thinking and more open, liberal minded people) does not bring out the best in doctors.

IJD: Are you saying that the health lobbyists have an easy run on television?

AT: Yes, their approach is closer to the thinking of the programme makers. A doctor comes from outer space with his own internalised knowledge, and he knows the requirements of his profession. And the resulting hostility is manifestly unfair. If you consider professionals of the seniority of hospital consultants there are very few in that position in modern society who are in such close contact with their clients: they stay in the field rather than at general headquarters. I'd be surprised if directors of social work, for instance, spend anything near the amount of time in the field—and I don't think this fact is ever acknowledged. Also, we hear little of the enormous hours worked by junior hospital doctors, and there is near universal ignorance of the fact that for overtime they are paid only one third of their basic rate of pay.

In fact, there is a case for calling doctors a seriously discriminated against minority. Channel 4, rightly in my view, was set up to give a voice for minorities, and across a wide range it has done a good job. Nevertheless, it continues to concentrate on the political, ideo-