

## Spinal Fractures

Spinal fractures can be considered in 2 groups: high energy and low energy. High energy fractures occur in the presence of normal bone and are due to trauma e.g. a fall, a car accident whereas low energy fractures occur in the presence of weakened bone, the most common type cause of which is osteoporosis – and this is by far the most common group.

### ***Low Energy Fracture***

This can occur spontaneously in the presence of weakened bone, but may also be as a result of trauma. The most common cause is osteoporosis. Other rarer causes include infiltration of the bone with tumour, cysts in bone and less common metabolic bone diseases e.g. osteomalacia.

This type of fracture may be 'silent' and not cause any symptoms, but more often the presentation is of pain in the area of the fracture. In an osteoporotic fracture the vertebra loses its shape as a block and becomes wedge shaped. Sometimes the vertebra can flatten completely. In the majority of cases symptoms settle relatively quickly and no treatment other than painkillers are needed. However, it is important to ensure that there is no underlying cause and so investigation is indicated. This should be in the form of a standing xray to evaluate the shape of the bone and the deformity together with an MRI scan (and often blood tests) to ensure that there is no sinister underlying cause. If osteoporosis is suspected then a DEXA scan may be indicated.

Osteoporosis is very common and is strictly defined depending on the results of a DEXA scan. It cannot be diagnosed from an xray although clues may suggest its presence. Osteopenia is a condition that is in between normal bone density and osteoporosis. Specific treatment for osteoporosis is very individual and should be discussed with your GP as well as Mr Harding. Sometimes special medications or hormone replacement (in ladies) may be indicated in conjunction with dietary supplements.

In the event that the low energy compression fracture is very painful and/or continues to give symptoms and does not settle down then treatment is indicated. Pain usually emanates from the collapsed vertebra itself but can also come from the facet joints at the back of the spine that have been disrupted. In isolated fractures that are symptomatic kyphoplasty is an effective method of treatment and information can be found on this on the treatment and links pages on the website. Rarely, spinal instrumentation to stabilise the fracture in conjunction with kyphoplasty is required. Facet injections may help control the pain from the posterior joints at or below the level of the fracture but the long term effectiveness is unpredictable.



Figure 1 – low energy fracture due to osteoporosis treated with kyphoplasty

### ***High Energy Fractures***

These are fortunately the less common type of spinal fracture and usually present via the emergency department. Besides xrays, a CT and/or MRI scan will be requested and a decision made as to whether surgery or a brace is required. In some cases it is possible to have no brace and simply take pain killers – it depends on the fracture. In the most severe cases the spine may need to be reconstructed from behind with rods and screws as well as using a block (or cage) at the front via a further operation through the side. This may require transfer to a specialist centre e.g Frenchay hospital where specialist care and investigations can be provided.

The spinal column protects the nerves in the spine and sometimes these are damaged when the spine is fractured and in the worst case scenario this results in complete paralysis. In the cervical spine this can be fatal, but fortunately this is rare and the majority of patients with a spinal column fracture do not have a neurological injury.

Figure 2 – High energy fracture with paralysis treated with surgery and full recovery subsequently

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