

Spinal Fracture

Spinal fractures are a serious injury. The most common types of these fractures are those that occur in the thoracic region and the lumbar region, or along the connection of these two areas.

The most common type of spinal fracture is the crush/compression fracture (sometimes known as an anterior wedge fracture). This typically results from a fall where the patient lands on their bottom or coccyx. The force fractures the vertebrae higher up in the upper lumbar spine. These fractures are often related to osteoporosis, and more common in females. This is usually a result from falling and landing on the bottom.

Sometimes these fractures occur when involved in a high-velocity accident, such as that of a car accident or falling from an elevated height.

Due to the energy required to cause these fractures, patients may have additional injuries requiring treatment. The spinal cord can end up being injured, depending upon how severe the spinal fracture is. Spinal cord injuries are of course very serious, but are caused by gross trauma, such as a severe head or neck injury. Having a spinal fracture does not necessarily mean spinal cord injury, and most spinal fractures do not involve the spinal cord.

Spinal Fracture Anatomy

The spine is composed of a number of small bones, referred to as vertebrae, which are all stacked one on top of the other. Ligaments, nerves, muscles and intervertebral discs are all additional components of the spine.

Vertebrae connects to create a canal that shields and protects the spinal cord. It is composed of three distinct sections creating natural curves in your back: chest area (thoracic), curves of the neck area (cervical) and lower back (lumbar). The lower part of the spine is composed of vertebrae fused together. Five lumbar vertebrae join the pelvis and the spine together.

When a vertebral crush fracture occurs, the front of the vertebra tends to sink inwards, creating a classic wedge shaped vertebra. This is why this injury is often known as an anterior wedge fracture (literally meaning front wedge fracture to the vertebra). The most common place for this to happen is the junction between the upper and lower back, known as the thoraco-lumbar junction. The actual vertebrae most commonly injured is T11, T12, and L1. It is possible of course to injure other vertebrae in the spine.

Very commonly, if an elderly person falls and lands on their bottom, it is possible they may suffer a crush/compression fracture to the vertebra. This is often due to underlying osteoporosis. Sometimes the fall can be quite minor, and sometimes the osteoporosis is so bad that there does not even need to be a fall, and the vertebrae collapses under the weight of the spinal cord. Being overweight, having poor nutrition, having poor health, having a family history of osteoporosis, or taking some medications such as steroids can significantly increase the risk of osteoporosis and hence a fracture.

How to Treat a Spinal Fracture:

1. Non-Surgical Treatment

Most of these types of injuries can easily be treated with a brace for six to twelve weeks at a time. Increasing physical activity gradually and engaging in rehabilitation exercises can help the majority of patients to avoid any post injury problems.

2. Surgical Treatment

Surgery is often required if you are dealing with an unstable compression fracture that has:

- A significant amount of fracture fragments
- Severe loss in the height of the vertebral body
- Significant injury to the nerve due to other parts of the vertebral body or the disc pinching down on the spinal cord
- Excessive bending forward or angulation at the site of injury

The fractures need to be surgically treated using one of either two techniques. Kyphoplasty will fill the fractured vertebra with cement to stabilize it. If there is a complicated fracture then decompression of the spinal canal may be required. Decompression often involves removal of the bone or various other structures that are compressing the spinal cord.

Problems after Compression Fracture

- The most common problem is pain in the base of the lower back, around the L5. This is because the wedge fracture forces the vertebrae to move forwards with gravity placing a lot of pressure through the muscles at the bottom of the spine. This also causes inflammation on the joints in the base of the spine which have to now support a much “heavier” spine because of the negative effects of gravity.

Tips:

- When playing sports, make sure you are wearing the proper sporting equipment to prevent any unnecessary injuries from occurring.
- Try to refrain from being involved in any high-energy accidents.
- Make sure to take all of the necessary precautions when climbing an elevated height.
- Do everything you can to stay out of harm’s way and avoid sustaining any gunshot wounds or other violent acts on your spine.



*MRI showing a spinal compression/crush fracture and kyphoplasty
(the cement is where the black bubble is)*