

Vertebral Compression Fractures: Diagnosis and Treatment

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Editorial

Vertebral Compression Fractures (VCFs) of the thoracolumbar spine are common in the elderly, with 1.5 million VCFs occurring each year in the general population of the United States. In the United States, almost a quarter of all postmenopausal women suffer from a compression fracture at some point in their lives. This condition becomes more common as people get older, reaching 40% by the age of 80. VCFs affect 10.7 out of 1000 women and 5.7 out of 1000 males, according to population studies. Compression fractures are also more common in men over the age of 65. Their risk, however, is significantly lower than that of women of the same age. Asian women are just as likely as Caucasian women to suffer from vertebral compression fractures, while African-American women are less likely.

VCFs, while less serious than hip fractures, can result in significant physical limitations. Chronic back pain, which is linked to certain types of fractures, causes severe disability and functional restrictions. Multiple contiguous VCFs can cause increasing kyphosis of the thoracic spine, which can lead to a variety of complications, including decreased appetite, poor nutrition, and diminished pulmonary function. In individuals with VCF, the steady loss in health status is expected to lead to greater morbidity and death when compared to the general population. VCFs can raise medical expenditures significantly: the estimated annual cost of VCFs in the United States is \$746 million.

VCFs are most commonly caused by osteoporosis, however they can also be caused by trauma, infection, or malignancy. Because of hormonal changes that might contribute to osteoporosis, postmenopausal women are at the greatest risk. Because osteoporosis disturbs bone microarchitecture and changes the content of non-collagenous proteins in the bone matrix, bone mineral density is reduced. Fragile bones are prone to fractures as a result of the tissue's structural degradation. Approximately 44 million Americans have osteoporosis, and another 34 million have low bone mass, according to estimates.

According to studies, having one VCF raises the chance of subsequent VCFs. According to Lindsay et al, having one or more VCFs increases the patient's risk of experiencing another vertebral fracture by a factor of five, regardless of bone density. According to other research, having one compression fracture raises the risk of having another by 5 times, while having two or more compression fractures increases the risk of having another by 12 times. Reduced bone mineral density also raises the relative risk of developing VCFs: if bone mineral density is reduced by two standard deviations, the risk of developing a VCF increases by four to six times.

The flexion compression mechanism of injury is present in compression

fractures of the thoraco-lumbar spine. The first column is frequently involved in this procedure (anterior longitudinal ligament and anterior half of the vertebral body). Because this type of fracture does not entail the retropulsion of bone fragments into the spinal canal, neurologic deficits are rather uncommon. In patients with severe osteoporosis, compression fractures of the vertebral bodies are especially dangerous. Fractures can occur in these people as a result of seemingly insignificant activities such as raising a light object, coughing or sneezing vigorously, or turning in bed. It has been proposed that fractures in vertebral bodies develop as a result of increased strain on the spine caused by paraspinal muscular contraction. According to some estimates, over 30% of compression fractures in individuals with severe osteoporosis occur when they are in bed. Falling off a chair, stumbling, or attempting to move a large object can all cause moderate osteoporosis patients to harm their spine. Severe trauma, such as a car accident or a fall from a great height, is the most common cause of a spinal compression fracture in people who do not have osteoporosis. When patients younger than 55 years old come with compression fractures, cancer should be ruled out as a probable cause [1-5]

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Conflict of Interests

None.

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