Vertebral Compression Fracture (VCF)

Vertebral Compression Fractures (VCFs) are common spinal injuries where one or more vertebral bodies collapse, most frequently due to **osteoporosis**, trauma, or metastatic disease.

Etiology and Risk Factors

<folded>Expand to see causes and risk factors</folded>

- **Osteoporosis** (most common)
- **Trauma** (e.g. fall, accident)
- **Metastatic lesions**
- Long-term corticosteroid use
- Pathologic bone conditions (e.g. myeloma)

Clinical Presentation

- Sudden onset of **back pain**, often after minimal trauma
- **Localized tenderness** over spinous processes
- **Kyphotic posture** or loss of height
- In some cases, **neurological symptoms** (if canal is compromised)

Diagnosis

- **X-ray**: Wedge-shaped vertebral body
- **MRI**: Edema in acute fractures; rules out malignancy
- **CT scan**: Fracture detail and posterior wall integrity
- **Bone scan**: Differentiates old vs new fractures

Management Options

<folded>Expand to view treatment approaches</folded> **Conservative**:

1. Pain control (analgesics)
2. Activity modification
3. Bracing (TLSO brace)
4. Physical therapy

Interventional:

1. Vertebroplasty
2. **Balloon kyphoplasty** → See procedure details

Surgical (rare):

1. Indicated in unstable or neurologically compromised fractures

Prognosis

- Good prognosis in osteoporotic fractures with early treatment
- Risk of future VCFs increases after first fracture
- Chronic pain or spinal deformity may persist if not treated

Follow-Up

- Monitor for **new fractures**
- Treat underlying **osteoporosis** or malignancy
- Encourage bone health (calcium, vitamin D, bisphosphonates)