Management of Vertebral Compression Fractures

Variant 1: New symptomatic compression fracture identified on radiographs or CT. No known malignancy.

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**MRI spine area of interest with IV contrast**

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### Percutaneous thermal ablation

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## Variant 2: Osteoporotic compression fracture, with or without edema on MRI and no “red flags”. With or without spinal deformity, worsening symptoms, or pulmonary dysfunction.

### Medical management

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Variant 3: Painful osteoporotic compression fracture with edema on MRI. Contraindication to vertebral augmentation or surgery (eg, fitness, pregnancy, infection, coagulation disorder, etc.).
### Procedure Appropriateness Category

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### Variant 4: Known malignancy and new back pain. Compression fracture identified on radiographs or CT.

- **Tc-99m bone scan whole body**
  - Usually appropriate
  - Expert Consensus
  - Adults RRL: 1-10 mSv
  - Peds RRL: 3-10 mSv [ped]
  - Rating: 5
  - Median: 5
  - Final Tabulations: 0 1 0 1 8 3 0 2 0

- **FDG-PET/CT skull base to mid-thigh**
  - May be appropriate
  - Limited
  - Adults RRL: 10-30 mSv
  - Peds RRL: 10-30 mSv [ped]
  - Rating: 6
  - Median: 6
  - Final Tabulations: 0 0 0 0 6 4 2 1 1

### MRI spine area of interest without and with IV contrast
- Usually appropriate
- Strong
- Adults RRL: O 0 mSv
- Peds RRL: O 0 mSv [ped]
- Rating: 9
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### MRI spine area of interest with IV contrast

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May be appropriate (Disagreement)

**O 0 mSv**

**O 0 mSv [ped]**

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**Variant 5:** Asymptomatic pathologic spinal fracture with or without edema on MRI.

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Variant 6: Pathologic spinal fracture with severe and worsening pain.

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Surgical consultation

May be appropriate (Disagreement)

Expert Opinion | N/A | N/A | 5 | 5 | 0 | 0 | 2 | 1 | 5 | 4 | 2 | 0 | 0

Radiation oncology consultation

Usually appropriate

Strong | N/A | N/A | 9 | 9 | 0 | 0 | 0 | 0 | 2 | 0 | 4 | 0 | 8

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| 143 (6178497)                    | 1                  |
| 135 (17224814)                   | 2                  |
| 131 (21277118)                   | 4                  |

Systemic radionuclide therapy  | May be appropriate  | Limited  | N/A  | 5   | 5   | 1   | 0   | 1   | 1   | 7   | 3   | 1   | 0   | 0   |
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| 145 (15925817)                   | 4                  |

**Variant 7:** Pathologic spinal fracture with spinal deformity or pulmonary dysfunction.

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Variant 8: Pathologic spinal fracture with neurologic deficits.

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Appendix Key
A more complete discussion of the items presented below can be found by accessing the supporting documents at the designated hyperlinks.

Appropriateness Category: The panel's recommendation for a procedure based on the assessment of the risks and benefits of performing the procedure for the specified clinical scenario.

SOE: Strength of Evidence. The assessment of the amount and quality of evidence found in the peer reviewed medical literature for an appropriateness recommendation.

- **References**: The citation number and PMID for the reference(s) associated with the recommendation.
- **Study Quality**: The assessment of the quality of an individual reference based on the number of study quality elements described in the reference.

RRL: Relative Radiation Level. A population based assessment of the amount of radiation a typical patient may be exposed to during the specified procedure.

Rating: The final rating (1-9 scale) for the procedure as determined by the panel during rating rounds.

Median: The median rating (1-9 scale) for the procedure as determined by the panel during rating rounds.

Final tabulations: A histogram showing the number of panel members who rated the procedure as noted in the column heading (ie, 1, 2, 3, etc.).

Additional supporting documents about the AC methodology and processes can be found at [www.acr.org/ac](http://www.acr.org/ac).