Significant differences were observed in patients with mCRC who received palliative chemotherapy, with the most frequent location being in the lumbar spine. Age and osteoporosis history were significant risk factors for OF. The OF risk should be considered in patients with mCRC receiving palliative chemotherapy, especially in the elderly or those with osteoporosis history.

**Conclusions**

- Significant OFs were observed in patients with mCRC who received palliative chemotherapy, with the most frequent location being in the lumbar spine.
- Age and osteoporosis history were significant risk factors for OF.
- The OF risk should be considered in patients with mCRC receiving palliative chemotherapy, especially in the elderly or those with osteoporosis history.