Sacral giant cell tumor

Treatment

There is no consensus regarding the appropriate treatment of sacral giant cell tumor (GCT). There are 3 main management problems: tumor control, neurological loss, and pelvic instability.

Case series

2015

Domovitov et al retrospectively reviewed the records of 24 patients with sacral GCT who underwent conservative surgery (intralesional resection/curettage) at Memorial Sloan Kettering Cancer Center from 1973 through 2012. They analyzed patient demographic data, tumor characteristics, and operative techniques, and examined possible correlations with postoperative functional outcomes, complications, recurrence, and mortality.

There were 7 local recurrences (30%) and 3 distant recurrences (13%). Three of 24 patients (12.5%) had significant neurological loss after treatment-specifically, severe bowel and/or bladder dysfunction, but all regained function within 1-4 years. Larger tumor size (> 320 cm3) was associated with greater postoperative neurological loss. Radiation therapy and preoperative embolization were associated with prolonged disease-free survival. There were no local recurrences among the 11 patients who were treated with both modalities. Based on radiographic and clinical assessment, spinopelvic stability was present in 23 of 24 patients at final follow-up.

High local and distant recurrence rates associated with sacral GCT suggest the need for careful local and systemic follow-up in managing these patients. Intraoperative preservation of sacral roots was associated with better pain relief, improvement in ambulatory function, and retention of bowel/bladder function in most patients. Fusion and instrumentation of the sacroiliac joint successfully achieved spinopelvic stability in cases deemed clinically unstable. Despite improvement in the management of sacral GCT over 35 years, a need for novel therapies remains. The strategy of combining radiotherapy and embolization merits further study [1].

2009

The clinical records of 24 patients with an average age of 35 years who had undergone conservative surgery for sacral giant cell tumor between 1996 and 2005 were evaluated retrospectively. The disease onset, tumor size, operation records, complications, follow-up status, and functional outcome were analyzed.

The mean duration of follow-up was 58 months (median, 50 months; range: 25-132 months). All the patients had a conservative procedure aided by intraoperative occlusion of the abdominal aorta. The mean estimated blood loss was 3217 mL. The mean length of the operation was 190 minutes. Seven (29.2%) patients developed recurrences. The mean time from the index surgical procedure to the first recurrence was 13 months (range: 8-31 months). The 5-year local recurrence-free survival rate was 69.6%. Seventeen (70.8%) patients retained normal urinary function and 16 (66.7%) patients

preserved normal bowel function. No patients had urinary or bowel dysfunction when both S3 nerves were preserved. Ten (41.7%) patients had complications perioperatively or during the follow-up. Seven (29.2%) patients had wound complications.

Considering the acceptable local recurrence rate, conservative surgery aided by effective control of intraoperative hemorrhage should be considered as an alternative procedure for patients with giant cell tumors of the sacrum. The advantages include lower morbidity, reduced neurologic deficits, speed and ease of the surgical procedure, reduced blood loss, preservation of spinal and pelvic continuity, and a low recurrence rate [2)].

1)
Domovitov SV, Chandhanayingyong C, Boland PJ, McKeown DG, Healey JH. Conservative surgery in the treatment of giant cell tumor of the sacrum: 35 years' experience. J Neurosurg Spine. 2015 Oct 30:1-13. [Epub ahead of print] PubMed PMID: 26516662.
2)
Guo W, Ji T, Tang X, Yang Y. Outcome of conservative surgery for giant cell tumor of the sacrum. Spine (Phila Pa 1976). 2009 May 1;34(10):1025-31. doi: 10.1097/BRS.0b013e31819d4127. PubMed PMID: 19404178.