Sacral chordoma treatment

Surgical en bloc resection is the primary treatment for sacral chordoma. Carbon ion therapy is used when it is difficult to obtain wide surgical margins. Due to morbidity and the disabling sequelae of surgery, adrotherapy may be considered an alternative to high (above S2-S3) sacral chordoma resections [1].

An en-bloc resection might not be possible if the tumor has extended into the neck, chest, or behind the abdomen. In this case there may be tumor tissue left behind, and radiation following surgery should be considered. Sometimes radiation may be recommended before as well as after surgery, especially when an incomplete resection is likely. If your tumor is located where surgeons cannot reach it or if the side effects of surgery are very serious and unacceptable to you, radiation may be recommended as the only treatment instead of surgery.

After surgery to remove the tumor, plastic and reconstructive surgery will likely be required to repair or replace bone or tissue lost during surgery. This should be planned at the time of initial surgery to reduce complications. Metal implants used to stabilize the spine can interfere with radiation, so a radiation oncologist should be consulted when surgery is planned if stabilization is required [2].

Surgery

Sacral chordoma surgery

Radiation therapy

Best results were obtained with en bloc excision (even if marginal), sometimes combined with high-dose XRT [3] [4] , (conventional XRT did not prevent recurrence when incorporated with palliative or debulking surgery [5] , but it did lengthen the interval to recurrence). Early radiation was associated with longer survival [6]. Higher XRT doses can be used in the sacrococcygeal region (4500–8000 rads) than in the cervical spine (4500–5500 rads) because of concerns of radiation injury to the spinal cord. IMRT and stereotactic radiosurgery have also been used [7].

Proton beam therapy

[8] , alone or combined with high-energy x-ray (photon) therapy [9] [10]. may be more efective than conventional XRT alone. However, proton beam therapy requires travel to one of a very limited number of facilities with a cyclotron (in the U.S.: Boston, or Loma Linda, California) which may be di cult to arrange for what is typically ≈ 7 weeks of fractionated treatments.

Chemotherapy

Imatinib (Gleevec®) (a tyrosine kinase inhibitor) has some antitumor effect in chordoma [11].

1)
Colangeli S, Muratori F, Bettini L, Frenos F, Totti F, D'Arienzo A, Campo FR, Scoccianti G, Beltrami G, Campanacci DA, Capanna R. Surgical Treatment of Sacral Chordoma: En Bloc Resection with Negative Margins is a Determinant of the Long-Term Outcome. Surg Technol Int. 2018 Nov 11;33:343-348. PMID: 30204925.
2)
https://www.chordomafoundation.org/treatment/new-diagnosis/mobile-spine-and-sacral-tumors/#:~:text=Sacral%20tumors,avoided%20if%20at%20all%20possible.
3) , 5)
Boriani S, Chevalley F, Weinstein JN, et al. Chordoma of the Spine Above the Sacrum. Treatment and Outcome in 21 Cases. Spine. 1996; 21:1569–1577
4)
Klekamp J, Samii M. Spinal Chordomas - Results of Treatment Over a 17-Year Period. Acta Neurochir (Wien). 1996; 138:514–519
6)
Cheng EY, Özerdemoglu RA, Transfeldt EE, Thomp- son RC. Lumbosacral Chordoma. Prognostic Factors and Treatment. Spine. 1999; 24:1639–1645
7)
Jiang L, Liu ZJ, Liu XG, Ma QJ, Wei F, Lv Y, Dang GT. Upper cervical spine chordoma of C2-C3. Eur Spine J. 2009; 18:293–298; discussion 298-300
8)
Hug EB, Loredo LN, Slater JD, et al. Proton Radiation Therapy for Chordomas and Chondrosarcomas of the Skull Base. J Neurosurg. 1999; 91:432–439
9)
Suit HD, Goitein M, Munzenrider J, et al. Definitive Radiation Therapy for Chordoma and Chondrosar- coma of Base of Skull and Cervical Spine. J Neuro- surg. 1982; 56:377–385
10)
Rich TA, Schiller A, Mankin HJ. Clinical and Patho- logic Review of 48 Cases of Chordoma. Cancer. 1985; 56:182–187
11)
Magenau JM, Schuetze SM. New targets for therapy of sarcoma. Curr Opin Oncol. 2008; 20:400–406