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Surgical resection of sacral chordoma: an update of the Rizzoli experience on 71 cases.

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Background. The treatment of choice in sacral chordoma is surgical resection. Wide margins obtained at initial surgery are the primary factor to improve survival. Our aim was to analyze the outcome in a large series of patients with sacrococcygeal chordoma at long-term followup, in order to help to define the role of previous inadequate surgery, surgical margins and the relationship with local recurrences.

Methods. We retrospectively reviewed 71 patients with sacral chordomas treated with surgical resection. Forty-eight resections were proximal to S3, 23 below or at S3. Proximal resections required an anterior and posterior approach with the exception of the 8 patients treated with a new technique using a posterior approach only, as well as 3 cases of distal resection. Eleven received previous intralesional surgery elsewhere. Three reconstructions were performed.

Results. Margins were wide in 44 resections, wide but contaminated in 11, marginal in 9 and intralesional in 7. Patients previously treated had wide margins in 7 cases, wide but contaminated in 2, marginal and intralesional in one each. Three patients died for postoperative complications and were excluded from further analysis. Overall survival was 92%, 65% and 44% at 5, 10 and 15 years respectively. At a mean follow-up of 9.5 years (min 0.5, max 32 yrs) 37 are NED (54.4%): 27 continuously NED, 5 NED1, 1 NED2, 4 died of different disease. Twenty-three died with disease (33.8%) and 8 are alive with disease (11.7%). Relapses included 15 local recurrences, 6 distant metastases, 17 both. Local recurrence rate was strictly related with margins.

Local recurrence rate was significantly higher in patients that received previous intralesional surgery ($p=0.0217$). Factors that influence local recurrence rate were margins other than wide ($p=0.0339$) and tumor volume at different cut-offs ($p<0.01$), whereas level of resection was not significant ($p=0.5883$). Multivariate analysis confirmed the role of tumor volume. Complication rate was high (80.9%) with an infection rate of 41.2%.

Conclusion. The most prominent adverse factor for local recurrence was previous intralesional surgery. Local recurrence rate was related with inadequate margins and tumor volume. Oncologic outcome of major resections is comparable to minor.

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