

# EFFECTIVE METHODS FOR SACRAL CHORDOMA TREATMENT

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**Introduction.** Chordoma is a malignant, slowly growing tumour that develops from the remnants of the notochord and is localized mainly in the sacrococcygeal segment. It occurs in 2.5-4% of cases of all primary malignant bone tumours. Men get sick 1.5-2 times more often than women. It is clinically manifested by dysfunction of the pelvic organs (intestines, bladder), sensory disturbances and paresis of the lower extremities. Tumour is often determined through rectal examination. Differential diagnosis of sacral chordoma is most often performed when chondrosarcoma and metastatic lesions are found. Surgery interventions for sacral tumours carry high risks in many aspects. Complete removal of the tumour is the basis of surgical treatment. However, due to the peculiarities of localization and its relationship with the abdominal organs and inside the pelvic organs, total sacrectomy is a very specific surgery. Angiography and occlusion of vessels feeding the tumour, to be performed before surgery, increase comfort during surgery and can minimize blood loss. Treatment of chordoma is usually surgical, although there are reports in the literature, evidencing the effectiveness of radiation therapy in the treatment of chordoma.

**Goal.** To show the effectiveness of the combined method in comparison with the surgical method in the treatment of sacral chordoma

**Materials and Methods.** 61 patients suffering from sacral chordoma were treated. The first group consisted of 35 patients who only underwent surgical treatment to the extent of resection of the sacrum with a tumour within healthy tissue at the S3 level, of which 26 patients underwent radical ablative surgery. When the sacrum is affected by a tumour at the S 1-S 2 level, the use of radical surgery is usually questionable and associated with

the risk of severe neurological disorders (dysfunction of the pelvic organs and lower extremities), therefore non-radical non-ablative surgery was performed in 9 patients. The second group consisted of 26 patients who underwent combined treatment, which included radiation therapy and surgical treatment. In the preoperative period, all 26 patients received radiation therapy for the sacral tumour at a total focal dose (TFD) of 20 Gray. The next stage was surgical treatment - sacrectomy. In the post-surgical period, 6 patients with non-ablative and 4 patients with non-radical surgical intervention received radiation therapy up to a TFD of 40 Gray per post-surgical scar.

**Results.** As a result of the surgical treatment of 35 patients of the first group, 6 (17%) patients died in the early post-surgical period due to various complications (acute cardiovascular failure, pulmonary embolism, urosepsis, and pelvioperitonitis). Therefore, long-term results were assessed in 29 patients. Recurrences of chordoma were observed within 2 to 45 months in 25 (86.2%) patients, and metastases mainly to the lungs in 12 (34.3%) patients. The three-year survival rate was  $45.3 \pm 1.8\%$ , and the five-year survival rate was  $37.7 \pm 2.3\%$ . In the second group of 26 patients who received combined treatment, 2 (7.7%) patients died in the post-surgical period, and long-term results were assessed in 24 patients. Chordoma recurrences were observed within 4 to 120 months in 9 (37.5%) patients. The three-year survival rate in the second group was  $90.0 \pm 0.8\%$ , and the five-year survival rate was  $76.1 \pm 1.1\%$ .

**Conclusions.** During surgical treatment of sacral chordoma, patient mortality is usually caused by tumour relapses with local complications and disease progression with distant metastases.

Considering the results obtained, we can say that combined treatment of patients suffering from sacral chordoma is more effective since there is a decrease in the number of tumour relapses and an increase in patient survival.