



09:102

Sports activity levels in long-term survivors of Ewing sarcoma in spine, pelvis and lower extremity

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Background:

Quality of Life and functional outcome became a field of interest in patients with Ewing sarcoma (EWS). Sports is an important part in the lives of young adults. However, currently there are no data available with regard to sports activity levels of patients with EWS.

Methods:

Sports activity levels in patients with EWS after multimodal treatment including surgical resection and radio-chemotherapy treated at a single institution with a minimum follow-up of five years were retrospectively assessed. 35 survivors (14 f/ 21 m) with an average age of 18 years and a mean follow-up time of 15,8 years following EWS were included. The tumors were located in spine (n=5), pelvis and proximal femur (n=18), knee joint and lower leg (n=12). The surgical procedures included surgical resections alone (n=16) or surgical resection with biological reconstruction (n=5) or endoprosthetic reconstruction (n=14).

Results:

One year before surgery and five years post surgery 34 out of 35 Patients (97,1%) were performing athletic activity. The most common types of sports were cycling, swimming and hiking. Depending on the location and the type of surgical procedure two different patterns of postoperative sports activity levels were found. Patients with resections in spine, pelvis and femur and biological and endoprosthetic reconstructions in the proximal femur and knee improved in UCLA Activity score from 3,9 to 6,3 points (1 year postoperative latest follow up) in Tegner activity score from 2,6-4,3 points and in modified Weighted Activity Score from 2,3-5,3 points in the course of sports activity assessments 1, 3 and 5 years postoperative. Patients who were the most active preoperatively tended to do more sports post-operatively (p=0,42). Patients with megaendoprosthetic reconstruction of the pelvis, fibula for tibia reconstructions and after resection of the fibula, sports activity remained at a low level post-operatively.

Conclusion:

Healthy long-term survivors can achieve high levels of sports activity following EWS. The localization of the tumor significantly determined the sports activity levels achieved. Preoperative sports activity levels significantly correlated with postoperative sports activity levels. This information will help surgeons as well as newly diagnosed patients when it comes to long-term expectations following EWS.

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