IS TOTAL HUMERUS PROSTHETIC RECONSTRUCTION SAFE IN A PATIENT WITH PATHOLOGICAL FRACTURE FROM DEDIFFERENTIATED CHONDROSARCOMA?

PASCAL C. HAEFELI², CARMEN HUEMMER², JAN ROSENKRANZ², RALF SCHÖNIGER², BRUNO FUCHS¹-⁴

Sarcoma Service, Cantonal Hospitals Winterthur¹ & Luzern², University Hospital³ / Kinderspital Zurich⁴

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INTRODUCTION

Patients with dedifferentiated chondrosarcoma (ddCHS) have a dismal prognosis. Surgery is considered as treatment of choice because no chemotherapy so far was able to show response rates. There is continued debate whether the limb with a pathological fracture on the base of a malignant bone tumor should be amputated because of oncological control, or saved. There is general agreement regarding patients with osteosarcoma and pathological fracture to keep the limb, whereas for patients with ddCHS it is not clear.

A 69 year old man noticed some discomfort in his right hand dominant upper arm for some months. 3 weeks prior to diagnosis, he developed night pain and subsequently he felt a crack. Staging evidenced localized disease. The CT-guided biopsy revealed a ddCHS, and the discussion with the patient then involved the Pro’s and Con’s of amputation versus limb-saving surgery. Imaging showed that proximally and distally, the tumor was confined to the intramedullary bone, and diaphysally, the neurovascular bundle as well as specifically the radial nerve were separated by a fine line of fat tissues from the tumor.

PATIENT & METHODS

A utilitarian incision was used from delto-pectoral interval to distal, and from there over the crease of the elbow medially to the forearm. Whereas the brachial muscle was sacrificed, the biceps muscle with the motor branch of the musculo-cutaneous nerve could be preserved to retain flexion. The deltoid diaphyseal insertion was completely involved by the tumor and therefore resected. Both shoulder and elbow joints were resected trans-articularly. Reconstruction was performed using a total humerus prosthesis, with uncemented ulnar stem fixation and using the reverse design for the shoulder part. Three months postoperatively, the patient showed overt metastases.

CONCLUSION

Pathological fractures in patients with ddCHS imply a challenging situation from the oncological perspective. While current chemotherapy may not affect survival, surgery is necessary for local control, but may neither affect overall outcome. So if amputation may likely not render a survival advantage, and if the local situation allows to save neurovascular structures, it may be one option to discuss the situation openly with the patient, thereby avoiding mutilating surgery.

HIGHLIGHTS:

There is a challenging decision making process between limb-salvage and amputation, particularly considering the potential spread.