

Computer Assisted Surgery (CAS) in pelvic bone tumors.

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Introduction

The pelvis is a complex geometrical structure; orientation and position during surgery are notoriously difficult. In bone tumors margins are crucial, but in the pelvis one often deals with marginal margins and high grade lesions. CAS provides continuous 3D image feedback during surgery and would in theory be better than fluoroscopy to determine orientation and position. The purpose of this report is to show the indications and results of CAS in pelvic tumors.

Methods

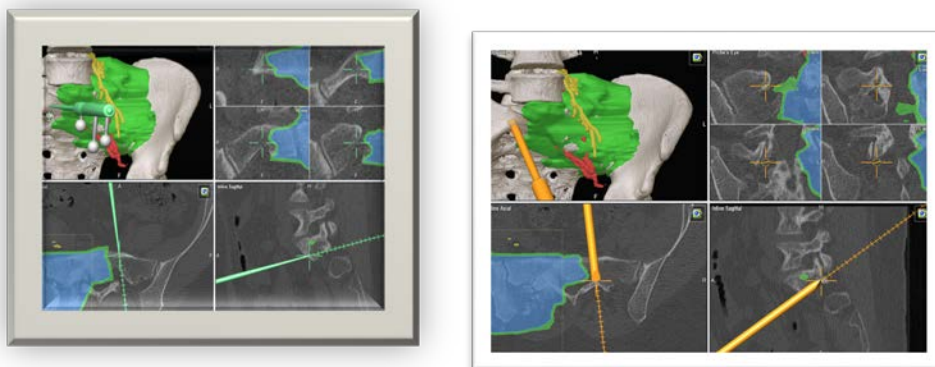
We treated 26 patients for CAS guided pelvic tumor surgery (13 male, 13 female, mean age 43 years (23 to 70). Indications, type of surgery, pathology results and follow-up were recorded prospectively in our local bone tumor database. The primary endpoint was the margin achieved. Secondary endpoints were complications and local recurrences.

Results

Indications were high grade malignant lesions in 12 cases, benign conditions in 14 cases. 20 resections were performed and 6 curettages. R0 margins were achieved in 17 cases, R1 bone margin in 1, R1 soft tissue margin in 1 and R2 soft tissue margin in 1 case. There were 4 local recurrences, 3 in chondrosarcoma, 1 in osteosarcoma. No complications occurred due to the CAS technique. Median set-up time was 7 minutes.

Conclusion

CAS improves orientation and position in complex geometry. The present series is too small to conclude its superiority over other techniques.



Figures showing the image feedback CAS provides during surgery to guide the surgeon for his bone cuts.