

28th Annual Meeting of the European Musculo-Skeletal Oncology Society 16th EMSOS Nurse and Allied Professions Group Meeting

April 29th - May Ist 2015 Athens, Greece



PP-055

Allograft-prosthesis composites after resection of a malignant bone tumor: a systematic review of the revision rates, complications and functional results

J.-C. Aurégan¹, R. Pietton¹, T. Bégué¹, P. Anract², D. Biau²

¹ Antoine Béclère Hospital, AP-HP, Paris Sud University, Clamart, France

² Cochin Teaching Hospital, AP-HP, Paris Descartes University, Paris, France

Introduction: The use of allograft-prosthesis composites for joint reconstruction after resection of a malignant bone tumor is widely reported in the literature. However, large variations exist in the surgical techniques and they could have an impact on the results.

Objective: Our objective was to conduct a systematic review of all the surgical techniques of allograft-prosthesis composites for joint reconstruction after resection of a malignant bone tumor in order to assess the revision rates, complications and functional results.

Material: A protocol of systematic review was specified in advance and recorded on 01/26/2014 in a specific database. Medline via PubMed, Embase and the Cochrane Library were systematically searched with the following search terms: allograft AND (prosthesis OR replacement) AND (hip OR knee OR shoulder OR elbow OR wrist OR ankle OR femur OR humerus OR tibia). Only studies presenting the results of allograft-prosthesis composites for joint reconstruction after malignant bone tumor resection were considered.

Method: After inclusion, two authors identified the relevant data using a predetermined form that was priory tested on the first 10 studies included. The primary outcome was the survival of the reconstruction evaluated by a revision for any reason as the event of interest. Secondary outcomes included post-operative complications, results (revision for mechanical reasons or for infection) and function.

Results: The search yielded 3153 citations. Among those, 34 papers met the inclusion criteria: 9 studies about reconstructions of the acetabulum, 9 about the proximal femur, 3 about the distal femur, 4 about the proximal tibia and 9 about the proximal humerus. The overall rate of revision of each joint was 0.29 (SD 0.24-0.35) from 0.38 (SD 0.26-0.52) for pelvic APC, 0.31 (SD 0.24-0.38) for proximal femur APC, 0.35 (SD 0.14-0.63) for proximal tibia APC and 0.16 (SD 0.10-0.25) for proximal humerus APC. The overall rate of complications of each joint was 0.52 (SD 0.42-0.61) from 0.70 (SD 0.59-0.78) for pelvic APC, 0.46 (SD 0.36-0.58) for proximal femur APC, 0.80 (SD 0.45-0.95) for proximal tibia APC and 0.27 (SD 0.19-0.37) for proximal humerus APC. By cons, large variability in the rates and types of complications was observed between the different anatomical sites where allograft-prosthesis composites were used. However, we found that the infection rate was 0.10 (SD 0.06-0.16) when fresh allografts were used and 0.26 (0.19-0.36) when irradiated allografts were used. Finally, the normalized function at last follow-up was good after humeral and proximal femoral construct but fair after pelvic construct.

Conclusion: Allograft-prosthesis composites for joint reconstruction after malignant bone tumor resection are reliable in term of survival rates, complications and functional results. However, large differences exist between the surgical techniques and some aspects could improve the results in the medium and long term.