



SEGMENTAL ALLOGRAFT RECONSTRUCTION FOR DIAPHYSEAL BONE DEFECT AFTER TUMOR RESECTION

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ARTICLE INFO

Published online: 26th
August 2018
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KEYWORDS

Bone Neoplasms;
Allograft;
Diaphyses

SUMMARY

Objective: To evaluate the outcome and complications of segmental allograft reconstruction for diaphyseal defects after tumor resection. **Methods:** we retrospectively analyzes 67 cases for segmental allograft reconstruction, 32 cases located at femur, 23 cases at tibia and 12 cases at humerus. Segmental allograft was preserved by deep fresh freezing, and the average length was 16.5 cm (8-30cm). The allografts were fixed by plate and screws, or interlocking intramedullary nail, or by both. We followed up the patients and analyzed the union and complications of the allograft. **Results:** all the patients were followed up 12-182 months, the average follow-up was 50.2 months. Five patients were died of the diseases. The allografts were removed out in 7 cases. The 5 year survive rates was 86%. The bone union rate was 68.8%. The average union time was 16.8 months (6-48 months). The union rate was 86.2% when the junction located at the metaphyseal region, which was higher than the one (63.6%) when the junction at the diaphyseal region. Nine of the nonunion cases received surgery again and the bone union were achieved. The mean MSTS score was 24.3(17-30), 18 to 28 for upper limbs and 17-30 for lower limbs. **Conclusions:** Segmental allograft is one of the main reconstruction methods for long bone defects. It could be long-time used with good function when bone union achieved. For those patients underwent nonunion, bone union could also be gained after surgical intervention.