



STRUCTURAL ALLOGRAFT FOR MALIGNANT BONE AND SOFT TISSUE TUMORS

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SUMMARY

Wide resection for treatment of malignant bone tumors often leads to considerable problems of reconstruction. At present, several reconstructive options such as prosthesis reconstruction and biologic reconstruction with autograft or allograft are available. When we decide which reconstructive procedure is best suited, surgeon must consider the availability of the reconstructive materials, the level of surgical difficulty, and the morbidity and incidence of complications. The durability of the reconstruction is another important consideration factor. For the young patients, most bone tumor patients who have strenuous activities, the more durable reconstructive procedure is recommended.

Large segment structural allograft can be a good option. The advantages of allograft include the lack of donor site morbidity, the capacity to shape the tissue to actual deficit, and the ability to advance peri-articular soft tissues into the allogeneic tissue to allow for not only greater inherent stability but also greater functional recovery.

The disadvantages of allografts include the lack of donors, continued and evolving quality control issues, costs, transmission of diseases, and the high complication rates with infection, non-union, fracture and resorption. Non-union and fracture of the allograft are attributed mainly to low osteogenic capability. Allograft prosthetic composite has become the reconstruction of choice for periarticular tumors in the lower extremities. At the hip this allows reconstitution of abductor mechanism and at the knee the extensor mechanism by sewing allogeneic tissue into host soft tissue.

Bone union at the allograft/host junction often is delayed. Unlike autogenous reconstruction, allograft reconstruction mandate a longer rehabilitation program with nominal stresses being placed through the reconstruction and return to activities recommended only when radiographic evidence of union has occurred. Continued evidence of non-union often necessitates secondary autogenous bone graft, sometimes the use of vascularized bone graft.