Allograft bone

Acquired through organ procurement agencies. Primarily frozen or freeze dried. Donor sites include: ilium, tibia, fibula, femur, rib.

1. PROS: eliminates risks associated with harvesting autograft

2. CONS: a) small but real risk of disease transmission

b) provides only osteoconduction (lacks osteoinduction and osteogenesis)

c) availability may vary from time-to-time

3. subtypes a) tricortical block,bicortical plug,or unicortical dowel

b) cortico cancellous: matchsticks, crushed

c) cancellous: cubes, block, crushed, bone powder

4. uses: allografts are acceptable for structural grafts such as in anterior spinal interbody fusion, where compressive forces are applied to the graft. However, for onlay grafts such as for posterior cervical fusion, the lack of osteoinductive and osteogenetic properties is a critical shortcoming

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Allograft bone, like autogenous bone, is derived from humans; the difference is that allograft is harvested from an individual other than the one receiving the graft. Allograft bone can be taken from cadavers that have donated their bone so that it can be used for living people who are in need of it; it is typically sourced from a bone bank. Bone banks also supply allograft bone sourced from living human bone donors (usually hospital inpatients) who are undergoing elective total hip arthroplasty (total hip replacement surgery). During total hip replacement, the orthopaedic surgeon removes the patient's femoral head, as a necessary part of the process of inserting the artificial hip prosthesis. The femoral head is a roughly spherical area of bone, located at the proximal end of the femur, with a diameter of 45 mm to 56 mm in adult humans. The patient's femoral head is most frequently discarded to hospital waste at the end of the surgical procedure. However, if a patient satisfies a number of stringent regulatory, medical and social history criteria, and provides informed consent, their femoral head may be deposited in the hospital's bone bank.

There are three types of bone allograft available:

Fresh or fresh-frozen bone

Freeze-dried bone allograft (FDBA)

Demineralized freeze-dried bone allograft (DFDBA)