Allograft Bone Banking Experience in Pakistan

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Abstract

To share our experience of establishing a bone bank in Pakistan, and the clinical use of these indigenously produced bone grafts. We retrospectively reviewed our experience of the procurement, processing, and storage of bone grafts at a bone bank in Karachi, Pakistan, the first bone bank to be established in a public sector hospital in Pakistan. The bone bank was established at Sindh Institute of Urology and Transplantation (SIUT), Karachi, in collaboration with Department of Orthopaedic Surgery, Dow University of Health Sciences/Civil Hospital, Karachi (CHK) in May, 2015. Since then, a large number of bone grafts from the tissue bank have been used for various orthopedic procedures. This paper describes the problems and challenges faced in establishing and running a tissue bank in a Muslim and a developing country and the progress of the bone bank over the first 4 years. A total of 93 bone grafts were retrieved and preserved in the bone bank over the 4-year period. Among these, 56 (60.2%) bones were retrieved from male donors and 37 (39.8%) from females. The mean age of all donors was 55.9 ± 15.34 years (range: 16–90 years). All bone donors were living patients. No c bones were obtained from deceased donors. Types of bone grafts included: femoral heads, 68; head with neck of femur, 19; radius and ulna, 1; lower femur, knee joint, lower leg and foot bones, 4; and skull bone, 1. All grafts were subjected to aerobic and anaerobic bacterial cultures, as well as fungal cultures. Microbiological contamination was observed in 18/93 (19.35%). All culture positive bones were discarded. Bone grafts issued from the bank and transplanted were 51/93 (54.8%) in all. Bone grafts were used in a variety of tumor and non-tumor orthopaedic procedures in CHK. Nine bone grafts were donated to the other hospitals to be used for revision total hip replacement and tumor surgeries. There were no service charges. Two patients (3.92%) developed infections postoperatively, one superficial and one deep. No other complications were noted. This is the preliminary report on the establishment and functioning of a bone bank in a public sector hospital in Pakistan. The favorable outcome has inculcated confidence in orthopedic surgeons for greater use of bone allografts for a variety of indications in this country.

Keywords

Allografts Bone bank Femoral head Transplantation Bone defect.