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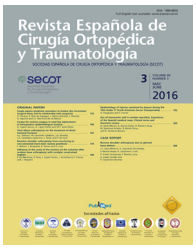

ORIGINAL ARTICLE

Analysis of the order-implantation relationship for musculoskeletal tissue transplantation☆

J. Ferraris*, P.E. Rodriguez, J.I. Albergo, L. Alonso, S. Bauque, G. Farfalli, L. Aponte-Tinao

Unidad de Procuración de Órganos y Tejidos para Trasplantes, Banco de Tejidos, Hospital Italiano de Buenos Aires, Buenos Aires, Argentina

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KEYWORDS
Order;
Implant;
Quality;
Return

Abstract
Objective: To analyze orders requested from a musculoskeletal tissue bank and to evaluate the percentage of tissue implantation.
Material and methods: Two hundred and sixty-five orders for musculoskeletal tissue were analyzed over the course of a year. Exclusions: 5 duplications and 5 orders for which there was no availability to cover the need. We analyzed the number of surgeries in which the graft was finally used.
Results: Of a total of 255 orders, the graft was used in 178 (70%), and the graft was not used in 77 (30%). Of the 178 used, there was a partial refund in 23 (10%). Of the 77 orders not used, surgery was performed in 32 (13%) without the use of bank tissue, while surgery was discontinued in the remaining 45 (17%).
Discussion: A non-utilization rate of 30% was identified, of which 17% was from surgery that was not performed and 13% from surgery that was performed, but the tissue was returned to the tissue bank, because it was not required. In a further 10% there was partial return of the tissue. Based on this analysis, we consider that it is important to have direct confirmation of the surgery to avoid sending tissue for discontinued surgeries, since in addition to the economic impact, the bank must ensure adequate temperature maintenance during transportation and storage in the transplantation centre, to avoid discarding said tissue if it is returned.

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* Corresponding author.
E-mail addresses: javier.ferraris@hiba.org.ar, javierferraris@yahoo.com (J. Ferraris).

PALABRAS CLAVE
Solicitud;
Implante;
Calidad;
Devolución

Análisis de la relación solicitud-implante de injerto para trasplante osteomuscular

Resumen
Objetivo: Analizar los pedidos solicitados a un banco musculoesquelético y evaluar el porcentaje de utilización de los tejidos.
Material y métodos: Se analizaron 265 pedidos de tejido osteomuscular en el transcurso de un año. Exclusiones: 5 duplicaciones y 5 pedidos en los cuales no hubo disponibilidad para cubrir la necesidad. Se analizó la cantidad de cirugías en las que finalmente se utilizó el injerto.
Resultados: De 255 pedidos solicitados, en 178 (70%) el injerto fue utilizado, mientras que en 77 (30%) el injerto no fue utilizado. De los 178 utilizados, en 23 (10%) hubo una devolución parcial. De los 77 pedidos de injerto no utilizado, en 32 (13%) la cirugía fue realizada sin necesidad de utilizar tejido de banco, mientras que en los 45 (17%) restantes la cirugía fue suspendida.
Discusión: Un 30% de los injertos solicitados no fueron utilizados; un 17% debido a que la cirugía fue suspendida y un 13% porque el tejido fue devuelto, ya que la cirugía no lo requirió. En otro 10% hubo una devolución parcial del tejido. Con base en este análisis, consideramos que es importante tener una confirmación directa de la realización de la cirugía para evitar enviar tejido a cirugías suspendidas, ya que además del impacto económico, el banco debe asegurar un adecuado mantenimiento de la temperatura durante el transporte y almacenamiento en el centro trasplantológico, para evitar el descarte de dicho tejido, en caso de ser devuelto.

Introduction

Musculoskeletal tissue banks are responsible for procuring, processing and distributing the needs of replacement material of the musculoskeletal system obtained from a donor. One of their fundamental missions is to guarantee maximum possible quality of the allograft to the surgeon and patient. Nowadays the great majority of tissue banks aim to adopt a quality management system for the purpose of providing safe, high quality tissues to the recipients. Due to the advance of these quality controls there is a progressive increase in the number of therapeutic uses and especially in the field of orthopaedics.[1–9] The most important causes to condition the rejection of preserved tissue in clinical use are related to serological events and contamination and infection of the bony pieces.[10–15] The percentage of graft rejection is directly related to the material and human resources each bank has and the preliminary donor selection. However, another occasional source of rejection is erroneous distribution due to the wrong order request or potential discontinuation of the surgical procedure. The aim of this study was to analyse the orders made to a musculoskeletal bank and to evaluate the percentage of usage made of the tissues.

Material and methods

265 musculoskeletal tissue orders received from a musculoskeletal bank were analysed over the course of a year. The orders were made through the SINTRA computer system—the National System of Information of Procuration and Transplant of the Argentinean Republic—regulated by the INCUCAI—National Institute Single Centre Coordinator for excision and implants. Any orthopaedic specialist or ordontologist who has been authorised by INCUCAI may request a graft. Analysis of the data base led to the exclusion of 5 duplications and 5 orders for which there was no availability at the time of order to cover the need. The duplications were made because the professional mistakenly put in the same order twice for the same patient. This left 255 orders to be analysed, of which 24 were massive bone grafts, 23 were tendons, 151 fragmented bone tissue (15,640 cc), 41 structural grafts and 16 combined. The number of operations in which the graft was finally used were analysed, as was the time between order request and surgery.

Results

The musculoskeletal specimens distributed by the bank are obtained from both live donors (head of the femur) and cadaveric donors (mainly femurs and tibias, as well as anterior and posteriors tibial tendons). All grafts are stored in sterile bags and preserved at −80 °C until their distribution. All grafts are stored and distributed as fresh and frozen.

Out of the 255 orders, the graft was used in 178 patients (70%) whilst in 77 patients (30%), it was not. Of the 178 patients in which the graft was used, in 23 (10%) there was a partial return of the initially requested tissue (3 structural [one femoral condyle + 3 diaphyses], 12 fragmented [1.500 cc] and 8 combined [3 tendons + 5 diaphyses + one extensor apparatus + 300 cc]),whilst in 155 patients (60%) the graft was used entirely (26 structural [12 wedges + 3 femoral condyles + 9 diaphyses + 2 tibial shafts], 18 massive [5 distal femurs + 3 proximal tibias + 5 distal tibias + one humerus + one distal humerus + one radium + one talus bone + one tibia], 97 fragmented (8.850 cc), 9 tendons and 5 combinations [400 cc + 4 diaphyses]). Partial returns were in no cases linked to aspects regarding graft distribution, e.g.