The behaviour of autologous spongiosa transplants from the iliac crest with and without fibrinadhesive in the canine femoral epiphysis. [German]

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Publication Date: 1982

Abstract:

Two holes of 6 mm diameter and 10 mm depth were bored into the distal portion of the femoral epiphysis approached from the femoropopliteal joint surface in 16 adult dogs of mixed pedigree. The resulting defect was filled with either pure spongiosa from the ipsilateral ilial crest or with spongiosa mixed with fibrinadhesive (the ratio of spongiosa to fibrinoadhesive being 10:1). The animals received Technetium 99-methylenediphosphonate i.v. three hours prior to killing. After the first week, the scintillation counter distribution patterns obtained in the bore holes displayed an earlier activity peak in the spongiosa plus fibrinadhesive group (Xchi<inf>1</inf> = 5.25) as opposed to the simple spongiosa transplantation group (Xchi<inf>2</inf> = 4.47; p<0.005). Maximum activity was reached in the simple spongiosa transplantation group after four weeks (Xchi<inf>2</inf> = 5.15) at which time the activity in the spongiosa plus fibrinadhesive group had already decreased significantly (x = 3.51; p<0.005). This phenomenon could also be demonstrated at eight weeks if the basal activity was initially low (Xchi<inf>1</inf> = 1.86; Xchi<inf>2</inf> = 2.95; p<0.0025). No remaining differences in activity patterns could be detected 12 weeks post op. The scintimatic assessment confirmed the above results. We attributed the rapid elevation and early decline in activity of the spongiosa plus fibrinadhesive group to being an indication of an accelerated revascularization in a low-dose fibrin environment.