Fibrin sealant in bone transplantation. No effects on blood flow and bone formation in dogs.

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Abstract:

To study bone formation and regional blood flow following the use of fibrin sealant in autologous cancellous bone transplantation, a dog model was developed. In 18 dogs, a standardized defect in both tibiae was filled with an autologous iliac crest graft. On one side, the bone chips were mixed with fibrin sealant while the other side served as control. After 1,2 and 3 weeks the blood flow of the transplant was calculated and the new bone formed evaluated histomorphometrically. Generally, the highest blood flow rates and most intensive new bone formation were observed at 2 weeks postoperatively. Fibrin sealant did not alter blood flow or new bone formation, but a tendency to diminished new bone formation was found in some grafts. Our study does not support the application of fibrin sealant in ordinary cancellous bone grafting.