
JOURNAL ARTICLE

Development of an osteogenic bone-marrow preparation

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The osteogenic effect of bone marrow was tested in rabbits, using chambers that had been implanted in the peritoneal cavity (ectopic site) and in a delayed-union model (orthotopic site). Osteogenesis was accelerated in both sites after concentration of marrow elements by centrifugation, but not after unit gravity sedimentation. Chambers that were implanted with marrow that had been processed by simple and isopyknic centrifugation demonstrated a more pronounced increase in deposition of calcium compared with whole-marrow implants of equal volume (101 compared with 193 per cent). Orthotopic grafting of a rabbit delayed-union model with whole marrow and marrow that had been processed with simple centrifugation significantly increased osteogenesis, as measured biomechanically and biochemically. Significantly improved healing was evident radiographically at five weeks after grafting with bone marrow that had been concentrated by simple centrifugation.

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