The Effect of Surface Curvature on Wound Healing in Bone

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Abstract - The time-independent nonhomogeneous diffusion equation is solved for the equilibrium distribution of wound-induced growth factor over a hemispherical surface. The growth factor is produced at the inner edge of a circular wound and stimulates healing in regions where the concentration exceeds a certain threshold value. An implicit analytic criterion is derived for complete healing of the wound.

Keywords - diffusion, surface curvature, growth factor, wound healing.