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DEVELOPMENT OF A HUMANIZED SKIN Model in Scid Pigs

Ctudy of human keloids and hypertrophic scars has been limited by the Olack of a large animal model. While transplantation of human scars onto nude, athymic mice has been used for many years, these models are limited by the small size of mice and the major difference in the anatomy and healing of wounds between mice and humans. A severe combined immunodeficiency (SCID) pig has recently accidentally been discovered. The authors tested the hypothesis that human cadaver skin would be rapidly rejected by immune competent pigs and accepted by SCID pigs. In each of two normal and two SCID pigs, created ten partial thickness dermatomal wounds were created onto which split thickness skin grafts from human cadavers were transplanted. Wounds were followed with digital imaging and periodic full thickness biopsies for 28 days. On each pig created two additional partial thickness wounds were also created which were covered with autografts from the same pig, which served as controls. In normal pigs, all of the autografts survived throughout the entire study period while all of the xenografts were rejected, mostly by T-cells, and sloughed within 5-11 days. In contrast, all autografts and xenografts survived the 28-days study period with minimal if any inflammatory response. At the end of the study period, it was difficult to distinguish between the autografts and xenografts based on gross visual inspection. This study concluded that the SCID pig is appropriate for transplantation of human skin and are further developing this humanized skin model using keloid and hypertrophic scars.



Biography

Adam J Singer has completed his MD from Ben-Gurion University and his Residency in Emergency Medicine from Stony Brook University. He is the Vice-Chair in the Emergency Department of Emergency Medicine at Stony Brook University. He has published more than 400 papers in reputed journals and has been serving as an Editorial Board Member of repute. He has received millions of dollars in funding from the NIH, DoD and industry.

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