Transplants & HBOT

nfluence of Decompression Procedure on Heart Viability after Long-term Storage using Hyperbaric Oxygen and Hypothermia
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HYPERBARIC oxygen associated with hypothermia seemed to be a valuable procedure for the preservation and storage of organs destined for transplantation, as assessed from functional studies of transplanted kidneys stored with or without perfusion1–3. This technique has been used successfully for the preservation of hearts for prolonged periods (up to 48 h) before heterotopic transplantation, unfortunately without any assessment of cardiac contractility4–6. It has also been used for shorter periods before orthotopic transplantation, with some long-term survivals7–9. Under normothermia, after exposure to oxygen at pressures of 3–5 atmospheres absolute (ATA) even for relatively short periods (1–4 h), intact mammalians showed marked and irreversible heart and lung changes10. If the toxicity of oxygen determines tissue alterations to some extent, the decompression per se must be investigated and assessed separately because it may contribute to bubble formation which is one source of tissue damage. The importance of the decompression procedure was stressed by the authors, who were trying hyperbaric oxygen in patients with myocardial infarction11. The purpose of this investigation was to compare the fate of rat heart heterotopic transplants after prolonged storage under hyperbaric oxygen and associated hypothermia when two decompression procedures were used.

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