

Hyperbaric Medicine In Soft Tissue Trauma

Trauma, July 2001, vol. 3, no. 3, pp. 133-141(9) Cosgrove H. [1]; Bryson P. [2] [1] A & E Department, Torbay Hospital, Torquay, UK [2] DDRC, Hyperbaric Medical Centre, Tamar Science Park, Research Way, Plymouth, UK.

ABSTRACT: Severe crush injuries of the soft tissues can result in tears of the large vessels and destruction of the microcirculation. This produces ischaemia and tissue necrosis and contributes to the development of oedema and compartment syndromes. All these factors compromise tissue survival. Immediately following a crush injury some areas of tissue are obviously irreversibly damaged, and others undamaged. It is common to have a 'grey area' between these, where there is uncertainty as to what will survive. Management of crush injury must involve surgical repair of vessels and soft tissues, debridement of obviously dead tissue, and bone stabilization.

At the same time tissue perfusion must be maintained by manoeuvres such as fluid replacement and diminution of oedema, and when necessary fasciotomy. It has been proposed that hyperbaric oxygen therapy has a role, as an adjunct, in the maintenance of tissue oxygenation under these conditions, and will improve survival of tissues in the grey area, and thus minimize tissue loss. Hyperbaric oxygen therapy involves breathing 100% oxygen at pressures greater than one atmosphere. Presently, the pressures most often used are in the range 2-3 atmospheres absolute.

Keywords: crush injury; hyperbaric oxygen; white cell function