Environmental effects

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As already alluded to, the shockwave of blast overpressure is modified by an enclosed or partially enclosed space. Envi ronmental variations may make marked di ff erences to injury rates and clinical presentations following blast. Higher rates of blast lung and TM rupture are seen following enclosed blast (in which both the casualty and b last are enclosed). In contrast, secondary blast injuries may be lower in number as more people are protected from energised fragments. Tertiary injury is di ffi cult to predict based on blast characteristics but a higher proportion of blunt injuries have been seen following enclosed blast. A distinct pattern of injury has been described following underbody blast against military vehicles. Underbody blast casualties have a greater range of injuries and are overall more 26 se verely injured. In addition to blunt injury sustained from displacement within the vehicle, the e ff ect of blast is mani fested by propagation of the shockwave through a solid, with both upwards deformation of the floor and a rapid upwards acceleration of the whole vehicle and subsequent decelera tion following impact with the ground. The solid b last injury 27 burden includes severe foot and ankle and pelvic injuries. Mortality from underbody blast is most commonly caused by head injury and non-compressible torso haemorrhage, includ 29 ing aortic disruption and liver laceration. Environmental effects

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