

Mine Blast Injuries – Our Experience

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Abstract

Background: The sudden increase in incidence and magnitude of mine blast injuries prompted us to highlight the problem and its management.

Methods: The cases of mine blast injuries occurring during mining and demining in a particular geographical area were analysed. Total 27 cases of mine blast injuries occurred during mining or demining operations in a period of 13 months.

Results: Various body regions were involved in the mine blast injuries but the main brunt was borne by feet and legs followed by multiple body regions due to splinters. 14 patients underwent below knee (BK) amputation while 4 patients required through knee (TK) amputations. The effect of blast was so severe that most of the cases required 2 to 5 times wound debridements. The initial aggressive debridement / open stump amputation saved the limb and life of all patients.

Conclusion: A mine blast causes extensive injuries and psychological trauma. Management is needed urgently, surgery is difficult, and amputation is often inevitable. Maximum lives and limbs can be saved with aggressive debridement, repeated inspections and dressings under anaesthesia and definitive closure at optimum time.

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Key Words: Amputation; Antipersonnel mine; Crush syndrome; Debridements; Mine blast injury; Secondary missiles; Shrapnel

Introduction

Incidence of fatalities with mine blast injuries are very high. They usually occur while handling a device, stepping on a device or falling onto a device. Incidents with anti tank mines are rare, but have invariably killed the deminer initiating the mine [1]. The most common activity at the time of an incident is “excavation of mines” “handling” or “victim inattention”. The missed-mine risk is real and generally results in a severe injury. We share our experience of managing 27 mine blast injuries in the northern sector of the country.

Material and Methods

We received 27 cases of mine blast injuries while mining or demining land mines in a period of 13 months. Out of these injuries, only 3 cases occurred during demining operations. All anatomical details were lost in most of the cases. The tissues were deeply impregnated with dust, cloth pieces, shrapnel's, splinters and were grossly contaminated. The wounds were ghastly looking with traumatic amputation in certain cases. In one of our patients who sustained injuries due to explosion of antitank mine Mark 5HC, resulted in severe life threatening injuries. The limb or their parts were blown off, the bone was pulverized with soft tissue loss and the demarcation of dead from living tissue was difficult. He required above elbow amputation of left arm, excision of little and ring fingers of right hand, through knee amputation on

right side, evisceration of right eye and primary suturing of multiple wounds all over the body (Fig 1 & 2). He was almost exsanguinated when he reached this hospital. This patient required multiple redebridements before definitive closure. The management of these injuries was a formidable challenge. The surgical treatment consisted of thorough wound debridement and irrigation or open stump amputation. The post-operative regimen consisted of frequent wound inspection and dressing / debridement under anaesthesia only. Comprehensive broad-spectrum systemic antibiotics were started from beginning. It consisted of third generation cephalosporin, aminoglycoside and an agent against anaerobic organisms. Pain control was provided with Baxter pump infusion, epidural or intravenous. To prevent thrombo-embolic complications prophylactic anticoagulant (low molecular weight heparin) was given in each case and psychological support was offered in the form of regular counseling. There was no fatality and average hospitalization was 3 weeks. Patients with well-healed and matured stumps were sent to Artificial limb center (ALC) Pune for application of prosthesis.

Results

The youngest victim in our series was son of a serving soldier, 14 year old who accidentally picked up the mine while playing and sustained mine blast injury of right eye and left hand. The oldest patient was an ex-serviceman, 48 years old who lost his lower limb due to stepping over drifted anti

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Fig. 1 : Shows amputation of left forearm due to explosion of antitank mine Mark 5HC.



Fig. 2 : Shows grossly contaminated and shattered right leg due to mine blast injury. The tissues were deeply impregnated with dust, cloth pieces, sharpnells, and grass fibers.



Fig. 3 : Shows ghastly, severely crippling mine blast injury of the foot with missing bone and flesh from the foot and ankle.

personnel mine while ploughing his field (Fig 3). The mean age was 30.37 years (SD 6.021). Young men suffered the



Fig. 4 : Shows involvement of multiple body regions in mine blast injuries.

highest rate of injuries (Table 1). Various body regions were involved in the mine blast injuries (Table 2) but the main

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