

A Unique presentation of Unexploded Ordnance in a Patient

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ABSTRACT

Rocket injuries in the war are common, but the retained unexploded rocket injury is quite rare and uncommon. We report an unusual case of unexploded rocket in knee area that required removal with unique safety measures, so as to prevent patient from potentially catastrophic situation.

Key words Unexploded rocket, Retained ordnance, Explosives.

INTRODUCTION:

Injuries in soldiers at war are common. Most of them are gunshot wounds, splinter injuries, flame burns and blast injuries.¹ Injuries resulting from rocket propelled grenades, antipersonnel mines and rocket attacks are usually fatal.² The effect can be devastating when these devices are used as antipersonnel weapon, producing large blast injuries that are limb and life threatening.^{1,3} The spectrum of injuries includes abdominal, thoracic, head and limb injuries, most of which are penetrating in nature. Limb injuries, more often than not, result in fractures, soft tissue damage including nerve injuries. Operative management needs multidisciplinary approach. Thus effective trauma care protocols are needed.⁴ This is a case of high magnitude war injury to lower limb of a patient that necessitated exceptional measures to deal with it for safe outcome of patient avoiding collateral damage.

CASE REPORT:

A 35 year old male patient presented with two hours history of rocket injury to right lower limb. Patient on arrival in emergency room was conscious and hemodynamically stable. He had his right lower limb well dressed and a rocket measuring 50 cm penetrating right knee from medial to lateral direction was noted (Figure I, II). The track was posterior to the joint, through soft tissues of popliteal fossa (Figure III). Patient was in pain. His distal neurovascular status was intact and there was no active bleeding.

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Figure I: Relative estimate of size of the rocket



Figure II: Rocket passing from medial to lateral aspect of knee area.

Patient was given initial treatment on the lines of advanced trauma life support (ATLS). It was decided to remove rocket under general anesthesia. Before shifting of patient it was pointed out that the rocket had not exploded and may be charged. Confronting the exclusive circumstance, any movement of the patient from his bed to stretcher was considered



Figure III: Rocket visible in popliteal fossa.

dangerous and not without lethal consequence of explosion of the rocket. On the other hand the ongoing delay in operative removal may have resulted in further injury to the limb.

Considering the grave nature of the situation, all nonessential staff and personnel were moved out of the emergency room. Monitoring of the patient continued. Following adoption of safety measures a call was sent to local bomb disposal squad. The team responded within 20 minutes. Using specialized equipment, the team thoroughly checked the rocket. The rocket was declared dead and safe to be removed. Rocket was dismantled and removed carefully and necessary debridement was done. No fracture was found. Postoperative recovery was smooth and uneventful.

DISCUSSION:

Managing retained ordnance in a patient is tricky and mentally testing for surgeons. Emotional pressure on patient and the surgical team is also undeniable. Few reports and studies are available in literature.^{5,6} Risk of explosion of ordnance during evacuation, assessment, monitoring and surgical intervention is always there.⁵ Recognition of the type of ammunition is very important. Measures concerning the rapid provision of information about unexploded ordnance, what it looks like, the nature of the particular hazard associated with them, and other relevant factors are essential.

Knowledge of precautions against spontaneous explosion of the ordnance is critical to prevent limb saving efforts into life saving ones.⁷ Equally important is the safety of medical staff and involved surgical team. Agreement with local Explosive Ordnance Disposal team/department is part and parcel of casualty management in these days of widespread terrorism.⁸

Education of medical staff for risk reducing response and conduct is vital. Any rough handling and unnecessary vibrations are to be avoided.⁷ Full cooperation with Explosive Ordnance Disposal team and following their instructions is recommended. Moreover, to avoid any haste patients with unexploded ordnance should be triaged in yellow or blue category and operated if survived after institution of required precautions and clearance from Explosive Ordnance Disposal team.⁵ Knowledge of and adherence to several basic principles will protect personnel and equipment while permitting optimal patient care. This case highlighted the same.

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