

The Initial Management of Military Injury, or why the Egyptians put donkey shit in wounds.

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In his address Professor Clasper drew attention to the fact that appearances can be misleading and that military wounds can go horribly wrong, a fact known since Egyptian times. He illustrated the point with a case study of a patient who had sustained an apparently simple gunshot wound to his upper thigh. Without any intervention this had led to a through hip amputation as result of a life-threatening infection the result of unseen extensive soft tissue injury, multi fragmentary fractures in a highly contaminated wound. In the First World War the mortality from this kind of injury was 80%. For injuries sustained in combat Surgical treatment is the key. The elements to correct wound management include stopping the bleeding, scrubbing and debriding the wound followed by a washout, dressing and stabilising any fracture. Amputation is still required at times. However, the most important part of the procedure is General Anaesthesia, in particular for complicated injuries. Introduced in 1846 it was one of the crucial medical advances of the 19th and 20th century. In combat the use of forward hospitals, early surgery, improved antisepsis (after Lister in 1867) and antibiotics (WWII) have contributed to better outcomes. However, Dr Alexander Fleming who had been a Captain in the Medical Corps in 1919 reported that antiseptics were of 'doubtful utility'.

Prior to this relatively modern approach the treatment would have been amputation or wound dressing and the use of splints. Over the centuries there have been recommendations to leave a wound to heal on its own. Historically dressings have been interesting and sometimes bizarre but providing an ingredient useful in wound management. Egyptians packed some wounds with fresh (sterile?) meat providing anti inflammatory properties. Later the wound was treated daily with grease (barrier), and honey (antibacterial). Lint provided absorption and the fibrous base acted to debride. There are still heated debates about the best dressings. Both silver and honey are back in vogue and the use of iodine has always been popular. The American military has returned to the use of sodium hypochlorite to irrigate wounds.

Gunpowder was invented in China about 850AD and used at the Battle of Crecy in 1346. It was thought to be poisonous and wounds caused by projectiles bleed profusely. Wound cautery with hot oil or iron addressed the problems and adopted as treatment of choice.

An alternative was the use of boiling oil. Its 'victims' were offered an alternative by Ambrose Pare, Regimental Surgeon at the siege of Turin in 1536. He used digestive of egg yolk (lecithin an antioxidant and lubricant), oil of roses (said to have antibacterial and anti-inflammatory properties) and turpentine (antiseptic) and bandaged the wound. He later tied off bleeding vessels rather than use cautery.

Other dressings have included cobwebs (styptic), snails powdered in their shells (astringent) and conifer, myrrh and frankincense (sealant and deodorant). Seth, the God of the desert...violence...disorder ...was associated with donkeys. A wound was considered a breach for demons to enter the body and could be sealed using donkey excrement - faeces have been shown to contain antibiotic substances. But was there a ritualistic element?

Stabilisation of fractures has been another of the advances in medicine as a result of war. Debridement may create a very unstable fracture. The procedure is applicable to all fractures and major soft tissue injuries. The benefits are the reductions of further damage, infection and analgesia. **Plaster of Paris** which is cheap and easy to use was originally developed for battlefield use and is warranted for simple fractures, moderate soft tissue injuries and the hands and feet.

But its use is limited by shrinkage. **Skeletal traction** is good for fractures of the femur, multi fragmentary fractures and where the casualty is not going to be transferred early. **External fixation** is recommended where big soft tissue defects, vascular injury, burns or polytrauma have been sustained. Examples of complex 'scaffolding' applied to limbs were pictured. Although plates and screws have been used in wartime in the 20th century the procedure is technically demanding and there is a high infection rate.

The lecture provoked a series of questions which included the following topics -
The Thomas Splint, the role of gauze in the absence of dressings. and the difference in the infection rates between different national military medical teams. Ethical issues arising in field hospitals, the use of medical reservists, and the role of leeches were also discussed.

After thanking all the contributors and audience Dr Jackson announced the name of the winner of the Colonel John Clasper Essay Prize. After a close contest between the 8 candidates Dr Jonathan Dennis was declared the winner for his essay entitled 'Medical Advances during WWI and WWII'. All submissions for the award are available to read on the society website.