

MANAGEMENT OF CONTAMINATED WOUNDS IN DISASTERS

Internationally agreed steps to be launched at ASC

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Wounds should not be primarily closed in the setting of a disaster. Sadly this has often been done by those responsible for the primary assessment and care of wounds in their efforts to help.

These sutured wounds have then become infected, with consequent tissue loss, sometimes also limb loss, considerable morbidity, prolonged disability and some threat to life.

The problem was recognised by surgeons attending a disaster a few days after the initial treatment and misguided closure of contaminated wounds. A/Prof Rob Atkinson FRACS and the Trauma Committee referred the matter to the International Committee to see what could be done.

The result is an internationally agreed consensus on how wounds should be managed in disasters.

A poster for distribution by national surgical societies and colleges will be launched at the Annual Scientific Congress in May 2014.

It highlights the risk of contamination and sets out a step-by-step guide to cleaning, debridement and dressing the wound in preparation for delayed primary closure, or further exploration in complex cases, by skilled surgeons if required.

The consensus was reached during the Global Burden of Surgical Disease Symposium at the College in 2012. It has been subsequently discussed in meetings of surgical colleges worldwide and has resulted in considerable interest, enthusiasm for its message and support for its distribution.

The poster will be co-badged with several international colleges including

the American College of Surgeons, College of Surgeons of Indonesia and the Philippines College of Surgeons.

Disaster management

It is hoped that the poster will be a useful tool for promoting education about optimal wound management and for field-based guidance in the acute aftermath of a disaster. It is presented as a simple A, B, C, D, E, F, G aide de memoir for easy reference and to facilitate recollection.

With the support of international colleges and societies, it is intended that the poster will be translated into several languages and modified for local use if necessary, and distributed to hospitals and health clinics in developing countries and disaster prone regions.

It could also be included in disaster management equipment packs and in emergency care facilities during disaster situations.

Wound Care in Disaster Situations

In a disaster, ALL wounds are contaminated. Do not suture Wounds. Suturing Wounds may cause infection. Follow these steps when managing wounds during disasters to prevent infection and further tissue loss.

A. ABC

1. Scene assessment
2. Primary Survey: airway, breathing, circulation, disability, environment/exposure.
3. Stop bleeding preferably by direct local pressure. Consider use of a tourniquet if direct pressure fails. Record time of tourniquet and remove within 1 – 1.5 hours*
4. (*upper limb: within 1 hour, *lower limb: within 1.5 hours)

B. Baseline Wound Assessment

1. Distal function
2. Associated fractures
3. Underlying structures
4. Need for exploration or extension

C. Control Contamination

1. **Anaesthesia:** Use anaesthesia if available and indicated
2. **Clean:** Wash the wound. Use potable (drinkable) water, saline or antiseptic solution. DO NOT use river water or seawater
3. **Remove foreign matter:** Pick out removable foreign material
4. Scrub the wound to remove embedded foreign material
5. Explore to assess wound and underlying structures. This may require extension of wound margins
6. **Excise:** Debride to remove remaining foreign material and necrotic and devitalised tissue. This may require trimming or excision of wound edges.

D. Dress, Don't close, Document

1. Leave wound open
2. Pack wound loosely with moist gauze. Saline soaked is best.
3. Dress with clean, dry dressing
4. Document on dressing, label or case notes: Place, date & time; Procedure; Proceduralist & Plan.

E. Essential medicine, Explain & Elevate

1. Elevate the limb & minimise wound movement
2. Consider Tetanus status
 - administer Tetanus Toxoid prophylaxis if unimmunised or uncertain
3. Broad spectrum antibiotics
 - Single dose if no established infection
 - IV route if practical
 - Continue if hands, feet or underlying fracture
 - Continue if established infection
4. Elevate or rest an affected limb where possible

F. 48 Hour Follow-up

1. Re-inspect the wound
2. Plan for definitive wound closure if no signs of infection
3. Re-debride and further excise if signs of infection, necrosis or contamination persist

G. Get Specialist Help for:

1. Wounds that can't be closed
2. Complex Orthoplastic reconstruction
3. Complex wounds in children
4. Decisions about amputation and withdrawal of care

SPECIAL CASES

Splinting

Preferably use a splint in cases of suspected or confirmed fractures; Wounds on the limb: test distal function

Definitive fracture management

Soft tissues are best treated by fracture stabilisation

Amputate

Remove devitalised and mangled tissue/limbs in unsalvageable cases; is surgical input to decision-making possible?

Absence of distal pulses

Or other signs of distal limb ischaemia requires immediate attention

Fasciotomy: (for compartment syndrome)

Should be considered in all limb trauma when pain is out of proportion to injury

Delayed primary closure (2-5 days) where tissue defect

Alternative closure technique with skin graft or flap (local or free); Secondary closure (> 5 days)

Crush injury

Aggressive fluid resuscitation; Alkalinisation with bicarbonate; Serum CPK and electrolyte monitoring at 6-hourly intervals

Blast injury

Extrication

Amputation indicated when alternative retrieval failed, for life-saving purposes only; Amputation by specialised team in coordinated effort; Maximum limb preservation must be considered