

Gun Shot Wounds in War Context

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Surgery in times of conflict

Follows Classical Surgical Standards

War Wounds are different

To bring the best care possible under the circumstances

In humanitarian context, multi-surgeon treatment is the usual

Surgery of mass casualties

Staged surgical management of the wounded

Predominance of emergency surgery

Surgery in a limited technical environment

Phases of Treatment

First Aid at the point of wounding

First Medical Treatment

First Surgical Treatment

Definitive Treatment

Reconstructive Surgery and Rehabilitation

Basic Principles of Management

Early and Thorough wound excision and irrigation

No unnecessary dressing changes

Delayed primary closure

Antibiotics as an adjuvant

Anti-tetanus vaccine and immunoglobulin if necessary

No internal bone fixation

Early physiotherapy



Surgical Management of War Wounds

Factors That Determine The Final Outcome

The actual injury

The General Condition of the Patient

Pre-hospital care Resuscitation

Hospital Triage

Surgery

Postoperative nursing care

Physiotherapy and Rehabilitation



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The severity of war wound infections is merely the result of the very extensive destruction of the tissues by the projectile, thus furnishing and admirable culture medium for the bacteria out of reach of the natural protective forces of the body, and if it were possible for the surgeon to remove completely this dead tissue I am quite sure the infections would sink into insignificance

- Alexander Fleming

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Damaged tissues must be removed in time

- Ibn Sinna



Treatment Steps

COMPLETE EXAMINATION

Determine site and size of wounds

Identify fractures, vascular and nerve damage

X-ray not an absolute necessity

PREPARATION OF THE PATIENT

Clean the patient

Pneumatic tourniquet

Patient Position

Only in extreme cases should the basic rules of hygiene and sterile technique can be broken

EXAMINATION OF THE WOUND

The best instrument for wound exploration is the surgeon’s finger

There is an art to the assessment of tissue damage that is learnt largely through experience

Not all wounds require surgical excision

SURGICAL TREATMENT

Performed in 2 stages:

Wound debridement

Delayed Primary Closure

Wound Debridement Technical Aspects

Stop **Hemorrhage**

Adequate skin incision

Fasciotomy when necessary

Remove dead and severely contaminated tissues to prevent/control infection

Leave the wound **OPEN**

Re-establish physiological function

Handle Gently and treat the tissues with respect as always

Retained Bullets and Fragments

If a projectile or fragment is **found** during wound debridement, **should be removed**

2 conditions require **immediate removal** of bullets/fragments:

Projectile in a synovial joint

Risk that the projectile may cause erosion of an important structure
(Usually a major blood vessel)

Leaving the wound open

The exceptions

1

Wounds in:

Head

Scalp

Genitals

Oral mucosa

Dura

2

Soft tissues of the chest

(Pleura and healthy muscle)

Soft tissues of the abdominal wall

(Every effort to secure peritoneal closure)

3

Hand:

Conservative excision

DPC after 2-4 days

Joints:

Synovial membranes or capsule should be closed

Dressings

Characteristics

Bulky absorbent dressing

Loose crepe bandage to held the dressing

Do not pack tightly

Should not be removed until taken down ion OT at the time of delayed primary closure

When to remove Early

Continuous hemorrhage

Vascular changes suggesting ischaemia

Obvious signs and symptoms of infection

Post operative care

After Debridement

Limb in elevated position

Physiotherapy commence the day after the procedure

Check for pain on passive flexion or extension (Early sign of compartment syndrome)

After delayed primary closure

Mobilization of the patient

Exercises to maintain muscle mass and joint mobility

A clean, dry wood requires no change of dressing until removal of sutures

Always

Good Nursing Care

Physiotherapy

Observation for signs of infection

Proper nutrition and patient hygiene must never be neglected



Thank You