

Open fractures (other than tuft fractures)

Outcomes to be expected

The outcome is largely predicted by the original injury but the aim is to achieve

- infection free union
- good soft tissue cover
- a functional range of motion

First aid treatment and referral pathways

- For all first aid measures see Hand Injury Triage guidelines at https://www.bssh.ac.uk/hand_trauma_app.aspx
- Referral category orange – The patient should be referred for same day review, potentially for admission to facilitate elevation and antibiotics whilst waiting for surgery

Consent – principle of shared decision making

- Discussion with the patient should include all options, an outline of their rehabilitation requirements for each option, and the likely outcomes
- The patient's values, occupation and hand function requirements should be discussed and considered in a joint decision making process
- Examples of this:
 - Whether to amputate or repair a severely crushed open digit

Decision making documentation

- The factors that have been considered in making a management decision should be documented, particularly where the surgeon and patient have agreed an option that might not be a common approach

Pain management

- Appropriate measures should be taken to control pain, from the point of presentation through to rehabilitation.

Non-operative management options

An entirely non-operative approach would rarely be advised, although minimal procedures might include wound washout and closure with splinting of the fracture. Where this option is selected the patient should have a clear follow up plan and access to hand therapy for supervision of their fracture management and rehabilitation.

Operative management requirements for fracture fixation

Timing

- Within 24 hours – if definitive procedure not possible within this time a washout and closure should be done within this timeframe

Staff

- Done or supervised by a surgeon who is competent in the fixation of hand fractures
- An ODP or scrub nurse who is familiar with the equipment is required
- For more complex procedures an assistant will also be needed
- Minor procedures for washout and closure will still require the support of another staff member, (e.g. ODP or scrub nurse) to ensure that instruments and sutures etc. are available to the surgeon without compromising sterility or prolonging the procedure

Environment

- Fracture fixation involves the insertion of metalwork into bone. It should therefore be carried out in a designated operating theatre or a procedures room as a minimum when simple washout and closure only is required

Equipment

- Light
- Hand surgery instrumentation
- Appropriate fracture fixation equipment
- Intra-operative mini C arm X-Ray facilities with images appropriately stored in PACS for later reference
- When needed, Tourniquet and the associated infrastructure

Additional measures e.g. antibiotics

- Antibiotics should be stopped at 72 hours or after definitive closure whichever is the sooner, subject to clinical judgement.

Post Operative Care

- A licensed device should be used for hand elevation
- Patients should be given explicit instructions after care until their follow up

Therapy requirements post-op

- Access to a competent hand therapist who will provide support and instruction to regain range of motion at the appropriate speed
- Where appropriate, instructions for early mobilisation of the fracture should be given to the patient pre-operatively so that they can start moving whilst waiting for their first therapy appointment after surgery.
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- The first visit to a therapist should take place 5-7 days after surgery, before adhesions become established, unless otherwise specifically advised by the surgeon
- The therapist should have an easy route of communication with and rapid access to the surgical team

Audit

- Regular or rolling audits of
 - Infection rate e.g. readmission or further surgery for infection
 - Rate of reoperations; e.g. removal of metalwork, tenolysis, osteotomies
 - Number of hospital visits/interventions
 - Functional outcome at 3 months; ROM, pain and a PROM

References

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