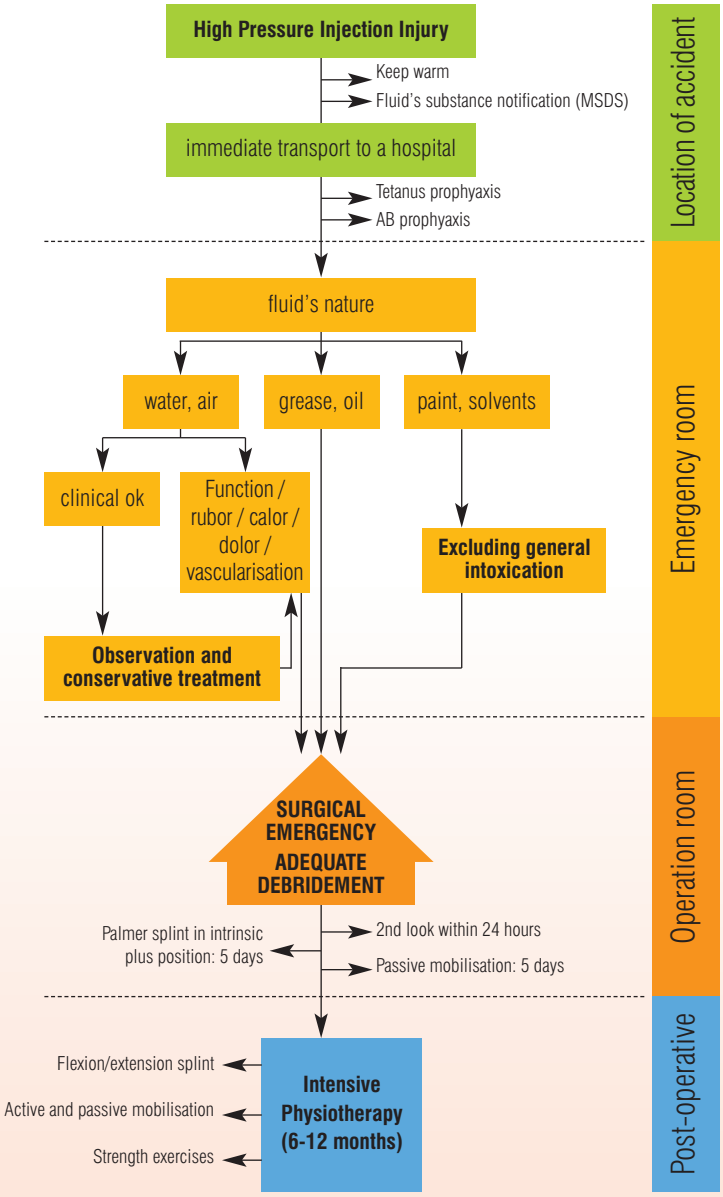
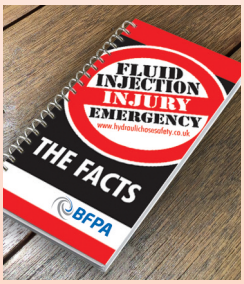
Emergency advice for injection injuries

Procedure and Process Flow - How to Treat a Fluid Injection Injury

Algorithm for the treatment of high-pressure injection injuries on the base of nature of the fluid (Verhoeven & Hierner 2008).





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Suggested guidelines for optimal treatment (for the medical professional)

- Early medical evaluation, including radiographic studies.
- Prompt surgical consultation. Patients treated properly within 10 hours of injury had much better outcomes than those treated in a delayed fashion.
- Administration of tetanus prophylaxis and intravenous antibiotics.
- Elevation and splinting before and after surgical exploration. Do not use cooling packs to control edema because their use may further compromise tissue perfusion.
- Surgical exploration using general anesthesia or axillary block. Digital and local blocks may contribute to tissue edema and are associated with worse outcomes.
- Use of an extremity tourniquet to establish a bloodless operative field after exsanguinating the arm by elevation. Esmarch bandage exsanguination may cause further spread of the injected toxins into tissue planes or compartments.
- Wide surgical exploration, including decompression of tissue compartments, debridement of nonviable tissue, and high-volume saline irrigation. Particular attention should be directed toward fluid tracking around neurovascular bundles. Flexor tendon sheaths are less likely to be involved.
- Wound cultures when appropriate to direct antibiotic therapy.
- Consider leaving the wound open, with a planned second look operative irrigation and debridement.
- Consider early amputation of a cool or poorly perfused digit.
- If edema is significant, consider administering 100 mg of hydrocortisone intravenously every 6 hours until improvement is observed. Change to 25 mg of oral prednisone daily and taper over 3 to 5 days. Restart hydrocortisone if edema, erythema or pain worsens.
- Frequent postoperative reassessment and return to the operating room if indicated.
- Early postoperative hand therapy to maximize functional outcome.

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