BSSH The British Society for Surgery of the Hand

Flexor Sheath Infection

Outcomes to be expected

With timely treatment the patient should be able to regain a functional range of active motion. However, there is a spectrum of severity of the condition.

First aid treatment and referral pathways

- Elevate, splint in a Position of Safe immobilisation (POSI), empirical IV antibiotics – (according to local protocols to cover Staphylococcus and Streptococcus species, plus gram negative rods and anaerobes in immunocompromised patients)
- Referral category orange (see BSSH hand triage app https://www.bssh.ac.uk/hand_trauma_app.aspx) – the patient may need to go to theatre within 24 hours and so should be referred to a department where they will be treated under the direct supervision of a Consultant Hand Surgeon
- The majority of patients will require urgent surgical washout of the flexor tendon sheath.
- If the patient is presenting very early with mild symptoms and signs (see Kanavel's signs) then a trial of 24 hours of IV antibiotics might be appropriate. Senior surgical review may be required to make this difficult clinical decision.

Consent – principle of shared decision making

- Discussion with the patient should include the risks and benefits of non-surgical and surgical options, an outline of their rehabilitation and the likely outcomes – including potential tendon rupture/amputation in the presence of delayed presentation or severe infection
- The patient's values, occupation and hand function requirements should be discussed and considered in a joint decision-making process

Non-operative management options

If non-operative management has been selected the patient should be monitored closely, within 24 hours, and surgical treatment planned if any deterioration occurs. They should receive empirical IV antibiotics, a resting splint in a POSI until the infection has begun to settle and early access to a hand therapist for supervision of their recovery to a functional range of motion.

Operative management requirements

Timing

- Urgent – as early as possible within safe working hours and within a maximum of 24 hours of decision to operate

Staff, Environment and Equipment requirements are as per the Flexor tendon injury standard

Technical aspects

- There are different surgical approaches described in the literature, but the flexor sheath should be washed out using high volumes of Normal Saline +/- local antibiotics via a catheter until the outflow is clear, from proximal to distal using limited incisions, usually made at the levels of the A1 pulley and DIPJ.
- Care must be taken to ensure there is outflow of fluid from the digit so that the tissue pressure is not raised above safe limits
- These incisions should be made such that they can be extended and connected if further debridement or access is required and left open or loosely tacked
- Purulent infections will require a planned repeat washout at 48 hours

Therapy requirements

- Early access to a hand therapist to supervise early active motion to maintain range of motion, reduce oedema and prevent adhesion formation. This can commence the day after surgery
- Patients should be offered therapy at weekly intervals for at least 6 weeks

Audit

- Regular or rolling audits of
    - Microbiological confirmation of diagnosis of infection
    - Treatment time to surgery
    - Rupture rate
    - TAM of the digit

References

Chapman T, Ilyas AM. **Pyogenic Flexor Tenosynovitis: Evaluation and Treatment Strategies.** J Hand Surg Am. 2019;44(11):981-985

Kanavel AB. **The symptoms, signs and diagnosis of tenosynovitis and fascial space abscesses. Infections of the Hand.** 1st Edition Philadelphia: Lea and Febiger: 1912:201-226

Giladi AM, Malay S, Chung KC. **Management of acute pyogenic flexor tenosynovitis:literature review and current trends.** J Hand Surg Eur. 2015;40(7)720-728

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