

JOINT AND TENDON INJECTIONS

General points

- Strictly aseptic technique
- Any suspicion of infection – send for culture
- An effective injection should last ~ 3mths – if less consider whether overall Rx is effective

Drugs used for injection – which to choose?

- Long acting steroids
- Short acting steroids
- Local anaesthetics

Consequences of raised IA pressure

- Reperfusion injury of the synovium
- Acute synovial rupture
- Chronic Synovial Leakage
- Cystic erosions of bone ends
- Reflex inhibition of muscles

Contraindications of injection therapy

- Infection
- ?OA
- ?Traumatic effusions
- Anticoagulation

Potential Risks of Injection Therapy

- Infection
- Aseptic Necrosis
- Steroid-crystal Arthritis
- Leakage of steroid along needle tract
- Adverse effect on cartilage
- Tendon rupture

Injection Therapy for inflammatory disease

- If >3 joints inflamed would an IM injection not work better?

Specific points :

- After ankle injection, keep foot elevated for few mins. to minimise haematoma formation
- Knee injection to reduce pain / swelling, permits return to ROM and referral to physio. thus better outcome

The Synovial Fluid

- Colour
- Viscosity
- Crystals
- When to send to the Lab ?

Specific Areas of Interest

- Carpal Tunnel
- Shoulders
- Knees
- Epicondylitis
- Trochanteric Bursitis
- Planter fasciitis

Key clinical recommendations for practice, and their accompanying level of evidence rating, are as follows:

- For de Quervain's tenosynovitis, corticosteroid injection without splinting is the preferred initial treatment (level of evidence, B).
- For trochanteric pain, corticosteroid injection is safe and highly effective, with a single corticosteroid injection often providing satisfactory pain relief (level of evidence, C).
- Short-term pain relief provided by subacromial corticosteroid injection is greater vs placebo and is at least equal to that provided by treatment with nonsteroidal anti-inflammatory drugs (level of evidence, B).
- In the short-term (< 6 weeks), corticosteroid injection helps relieve symptoms from lateral epicondylitis. After 6 weeks, however, physical therapy is superior to steroid injection for symptom relief (level of evidence, A).
- Intra-articular corticosteroid injections help to relieve pain and reduce swelling in osteoarthritis of the knee (level of evidence, A).
- Adding local anesthetics to corticosteroid injections is associated with superior pain relief. This technique can also be used to distinguish local pain from referred pain (level of evidence, C).

The **clinical effects** of steroids result from several different mechanisms of action. Intra-articular corticosteroids reduce synovial blood flow, lower the local leukocyte and inflammatory modulator response, and alter local collagen synthesis. These effects combine to reduce pain and inflammation.

Summary Points

- Injections may be used to provide a pain-free window for rehabilitative therapy or to provide pain and symptom relief.
- Corticosteroid injections are 83% curative for de Quervain's tenosynovitis, with the highest cure rate vs the use of nonsteroidal anti-inflammatory drug therapy (14%), splinting (0%), or combination therapy (0%).
- For this condition, corticosteroid injection without splinting is the recommended treatment.

- Trochanteric bursitis is the second leading cause of hip pain in adults, and a steroid-anesthetic single injection can provide rapid and prolonged relief, with a 2.7-fold increase in the number of patients who were pain-free at 5 years after a single injection.
- Steroid injection should be offered as a first-line treatment of trochanteric bursitis, particularly in older adults.
- Injected corticosteroids decrease swelling and pain, allowing strengthening exercises for rehabilitation.
- Subacromial injection is helpful to distinguish between shoulder weakness caused by impingement (shoulder strength improves after injection) and true rotator cuff tear (no change in strength).
- Lateral epicondylitis (tennis elbow) can be treated in the short-term (< 6 weeks) with corticosteroid injection, with better improvement vs nonsteroidal anti-inflammatory drugs.
- After 6 weeks, physical therapy is more efficacious in reducing symptoms vs corticosteroid injection.
- Intra-articular injections can be used for osteoarthritis of the knee and typically yields improvement within 24 hours that lasts 4 to 8 weeks.
- Repeated injections to the knee do not accelerate disease progression for osteoarthritis.
- Intra-articular injections are less effective for the thumb and shoulder because of technical challenges associated with the injections.
- Carpal tunnel syndrome affects 4% of the population, and local corticosteroid injections provide good symptom relief for 1 month vs placebo (number needed to treat, 2).
- Patients with rheumatoid arthritis benefit from multiple steroid injections at recommended intervals of every 3 months.
- Intra-articular steroid injections do not affect glucose control in diabetic patients, but soft tissue or peritendinous injections can cause elevations of glucose levels for 5 to 21 days; patients should monitor glucose levels after injection.
- Contraindications to joint injection include broken skin at site, hypersensitivity to agent, osteochondral or intra-articular fracture, prosthetic joint, severe joint destruction, and unstable coagulopathy.
- Complications of intra-articular injection are rare and include postinjection flare of pain (2% - 10%); skin atrophy (1%); fat atrophy (1%); facial flushing (< 1% to 12%); and, very rarely, iatrogenic infection (1:1000) and tendon rupture (< 1%).
- Local anesthetics may be added, but preference for use is based on experience vs available evidence.

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