The Leeds Teaching Hospitals NHS
NHS Trust

Rheumatology Department

Injections Handbook

A Guide for SpRs and SHOs

June 2006

Contents

General Principles

Scope of this Handbook

- This handbook outlines a guide to safe and reasonable practice for various injections used in the department of rheumatology. However, there are often no standard methods for each type of injection and practice does vary slightly between consultants.
- This handbook does currently not include evidence regarding efficacy, but the majority of the injections are widely used.
- Before performing injections, all staff must have received practical instruction from senior members of the department.
- Do not perform any injection unless you and your supervisor are happy with your technique.
- If in doubt about your technique, competency or the indication for a procedure please seek advice from a senior colleague.
- This handbook is not meant to be used as a substitute for proper 'hands-on' tuition

Indications

- Joint Aspiration:
    1. Effusion (inflammatory / OA / crystals)
    2. Haemarthrosis
    3. Diagnostic:
        a. Infection
        b. Crystals
        c. Cellularity
- Joint Injection:
    1. Persistent synovitis / recurrent effusion
    2. Reduced range of movement
    3. Pain (osteoarthritis)
    4. Haemarthrosis (aspirate to dryness first)
- Soft tissue Injection:
    1. Carpel tunnel
    2. Trigger finger
    3. Enthesopathies e.g. epicondylitis
    4. Tenosynovitis
    5. Rheumatoid nodules
    6. Plantar fasciitis
- Regional Nerve Blocks:
    1. Nerve entrapment pain e.g. occipital nerve
    2. Regional pain refractory to analgesia e.g. suprascapular nerve block for shoulder pain
- Epidurals:
  Radicular pain in leg (dermotomal pain, +ve SLR, +ve cough impulse)

Place in Relation to Other Treatments

Remember that injections are not a treatment in themselves. Other interventions that should be considered include:

- Increase / change disease modifying therapy if appropriate
- Increase / change / optimise analgesia (e.g. are patients taking appropriate medications at the correct intervals?)
- Physiotherapy
- Splints
- Orthotics (e.g. insoles for ankle pain)
- Advice re avoidance of exacerbating activities / review of work practices

Contraindications

- Joint infection: clinical suspicion or if aspirated fluid is very opaque or greenish – send fluid for culture and do not inject
- Prosthetic joint
- Local infection:
    1. Skin infection at site of injection
    2. Cellulitis or leg ulcers on same limb
    3. Psoriasis or eczema at injection site (likely to be colonised with bugs)
- Severe systemic infection e.g. pneumonia, SBE
- Raised INR due to warfarin (>2.5) or bleeding diathesis
- Drug allergy

<u>Relative Contraindications</u>

- Same joint previously injected within previous 3 months (although if severe persistent synovitis sometimes two injections within 3 months may be required)
- Frank blood aspirated: suggests trauma or bleeding diathesis, although steroid injection is often used in haemarthrosis associated with haemophilia (seek advice from senior)
- End stage OA – unlikely to be helpful (especially if previous injection inefficacious)
- Within 2-3 months *prior* to joint replacement (depending on surgeon involved)

Warnings for Patient

- Pain during injection
- Joint infection
    - This is a rare but serious complication
    - Occurs in 1 in 78 000 injections (this is less than 1 infection per rheumatologist in their entire career)
- Transient increased pain and stiffness of the joint (flare): 15%
- Flushing: unusual
- Thinning of subcutaneous tissues around the injection site: very rare
- Depigmentation of the skin around the injection site: very rare
- Absorption of the steroid into the body may occur that can cause generalised side effects from the steroid

    - Short-term increased blood sugars
    - After many repeated injections: weight gain, thinning of bones etc
- Drug allergy
- Inefficacy
- Recurrence of symptoms
- Tendon rupture if intratendinous injection given

Drugs Used

Hydrocortisone:

- Short acting
- Less likely to cause skin atrophy or depigmentation
- Less potent
- May be better for soft tissue or injections close to the skin

Depomedrone (methylprednisolone)

- Long-acting
- More potent
- Also comes ready mixed with lidocaine

Kenalog (Triamcinolone)

- Long-acting
- More potent

Lidocaine (previous name: lignocaine)

- Can use 1 or 2% mixed with depomedrone or kenalog – gives faster pain relief, may reduce the incidence of flares and can aid diagnosis (differentiating if pain is coming from joint)
- Erroneous intravascular inject may cause serious side effects e.g. arrhythmia

Marcaine (bupivacaine)

- Longer acting local anaesthetic used for nerve blocks and occasionally for intra-articular injections

Hyalgan or Synvisc (hylan G-F 20)

- These are among a number of hyaluronans licensed for OA knee. Although they are a component of normal synovial fluid, their effect size in clinical trials is small and their mechanism of action is not clear.

Patient Positioning

This obviously varies for each type of injection, but it very important that you and the patient are relaxed and comfortable in case the injection takes longer than planned. The patient should be able to relax the muscles at the site of injection (reduces pain and makes injection easier). If a patients has previously fainted, make sure they are lying down.

Aseptic technique

1. Wash hands thoroughly
2. Palpate joint and decide where you are going to inject
3. Mark the injection site with pen or indent with your finger nail
4. A refrigerant spray can be used to numb the skin e.g. ethyl chloride.
5. Clean area with alcohol wipe or cleaning solution e.g. 1% chlorhexidine

6. Do not open needle or syringe until immediately before use.
7. Do not touch area again before injecting
8. Cover with plaster (keep on 24°)

Needle Size

White (19g)	Aspirating thick fluid e.g. suspected sepsis or haemarthrosis in a large joint and no fluid obtained using green needle
Green (21g)	Aspiration of joints (except small hand/foot joints) Injection of knees Injection of shoulders in obese patients Trochanteric bursa (use extra-long needle if obese)
Blue (23g)	Soft tissue injections and nerve blocks Injection of all joints except knee
Orange (23g)	Injection of small hand/feet joints

Needle Placement

Signs that you are in a joint:

- Decreased resistance to needle advancement
- Able to aspirate fluid
- Little resistance to injection of drug (do not inject against resistance as you may be in a tendon or ligament)

Signs that you are in a tendon / ligament (do not inject)

- Difficult to advance needle
- Resistance to injection

Macroscopic Appearance of Synovial Fluid

Normal / non-inflammatory SF:

- Pale yellow, appears clear
- Few cells & little debris
- Viscous (shake fluid to create bubbles – if the bubbles rise slowly the fluid is viscous and is unlikely to be inflammatory)
- Does not clot

Inflammatory Fluid:

- Decreased viscosity
- Increased turbidity (impossible to read print through it)
- Deepening colour (yellow/orange/green)
- Spontaneous clot formation
- Blood staining common (mainly due to trauma & therefore not uniformly mixed with fluid)
- Rice bodies can be seen in severe synovitis (RA)

Infected:

- Looks like pus: thick, can be yellow / green
- Do not inject steroid if possibility of infection

- Send fluid to lab in plain universal container – mark as urgent, ring lab and chase up result – septic joints require urgent treatment
- If infected joint is strongly suspected and fluid cannot be obtained, consider injecting the joint with saline and re-aspirating. Alternatively seek an ultrasound guided aspiration.

Uniformly blood stained:

- Common causes:
    - Trauma
    - Severe inflammatory or destructive arthropathy:
        - Pyrophosphate arthropathy
        - RA
        - Sepsis
- Uncommon causes:
    - Bleeding disorder (haemophilia, warfarin)
    - PVNS
    - Abnormal blood vessels

Sending Fluid for Analysis

Suspected Sepsis:

- If sepsis is considered, send fluid to lab in a plain universal container – mark as urgent, ring lab asking for urgent microscopy/culture and chase up result – septic joints require urgent treatment. Initial microscopy and gram stain can be negative even in the presence of sepsis. In most cases treat with antibiotics until culture result is known.
- If lots of fluid is obtained, additional fluid can be inoculated directly into blood culture bottles.
- If infected joint is strongly suspected and fluid cannot be obtained, consider injecting the joint with saline and re-aspirating. Alternatively seek an ultrasound guided aspiration.
- Specific examination and culture for TB is indicated in certain cases. Although false negatives can occur and synovial biopsy may be required if high index of suspicion. PCR can be helpful – contact lab for advice.

Crystals:

- Fluid can be sent to microbiology for examination for crystals (plain universal container). However they are often missed. Therefore a negative result does not rule out crystal disease.
- Examination for crystals is on the SpR curriculum but currently not performed in this unit due to lack of polarising microscope.
    - Urate: needle shaped, negatively birefringent
    - Calcium pyrophosphate: shot and thick, negatively birefringent

Cellularity:

- Cellularity of synovial fluid can sometimes aid diagnosis (inflammatory vs degenerative) – send to microbiology for microscopy in a plain universal container. Alternatively a sample can be sent in an EDTA (FBC) container (ring lab first to check).
- In general in cell count and proportion of polymorphs increases with inflammation:

- >90% polymorphs suggests acute crystal synovitis, acute sepsis or active RA
- < 50% polymorphs suggests OA or mechanical derangement
- Marked monocytosis reflects viral infection (hep B, rubella) or serum sickness.

Cytology:

- Rarely required – PVNS

Post Injection Advice

- The joint may be painful for up to 24 hours post injection
- It may take several days for benefit to occur
- The injected joint should be rested 24 hours: day off work, minimal walking, wear splint etc.
- If increased pain, swelling or pain beyond 48 hours – patient needs to contact us (give day unit phone number), GP or A&E (if weekend).

Hand: Interphalangeal Joints

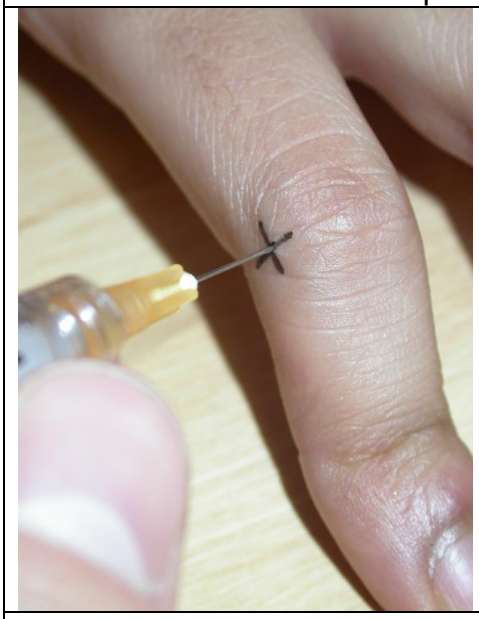
Indications:
Persistent synovitis
Effusion (aspirate fluid before injection)
Reduced range of movement
Pain (osteoarthritis)
Diagnostic (aspiration)

Additional / Alternative Therapies:
Increase DMARD
Increase analgesia
Physiotherapy & splints
USS-guided injection

Warnings for Patient:
Pain, joint infection, flushing, flare, skin atrophy, skin depigmentation, steroid absorption, allergy, recurrence of symptoms and inefficacy

Drugs:
Depomedrone 10mg or kenalog 5mg

Technique:
Make sure patient is comfortable so can sit still for 5-10 mins
Place hand on pillow
Gradual traction on end of finger, PIPJ flexed at 45°
Use 1ml syringe, an orange needle and aseptic technique
Aim the needle tangentially to the joint underneath the extensor expansion
Aspirate any fluid present.
Inject gently and slowly (may need to inject v small amounts at a time e.g. 0.1ml with a short break between each push)



Post Injection Care
Rest for 24 hours
If increased pain, swelling or pain beyond 48 hours – patient needs to contact us (give day unit phone number), GP or A&E (if weekend).

Hand: MCPs

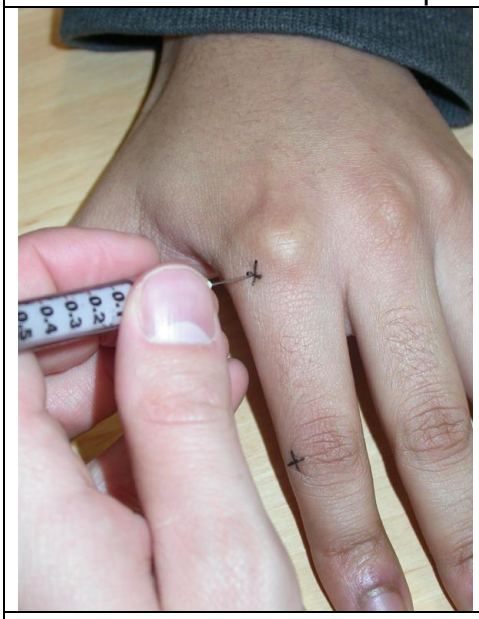
Indications:
Persistent synovitis
Effusion (aspirate fluid before injection)
Reduced range of movement
Pain (osteoarthritis)
Diagnostic (aspiration)

Additional / Alternative Therapies:
Increase DMARD
Increase analgesia
Physiotherapy & splints
USS-guided injection

Warnings for Patient:
Pain, joint infection, flushing, flare, skin atrophy, skin depigmentation, steroid absorption, allergy, recurrence of symptoms and inefficacy

Drugs:
Depomedrone 10mg or kenalog 5mg
+/- 0.5 ml 1-2% lidocaine

Technique:
Make sure patient is comfortable so can sit still for 5-10 mins
Place hand on pillow
Gradual traction on end of finger, MCPJ flexed at 45°
Note that the joint line is approximately 1cm beyond the crest of the knuckle
Use 1ml syringe, an orange needle and aseptic technique
Aim the needle tangentially into the joint underneath the extensor expansion.
Aspirate any fluid present.
Inject gently and slowly (may need to inject v small amounts at a time e.g. 0.1ml with a short break between each push)



Post Injection Care
Rest for 24 hours
If increased pain, swelling or pain beyond 48 hours – patient needs to contact us (give day unit phone number), GP or A&E (if weekend).

Hand: Flexor Tendon Nodules / Trigger Finger

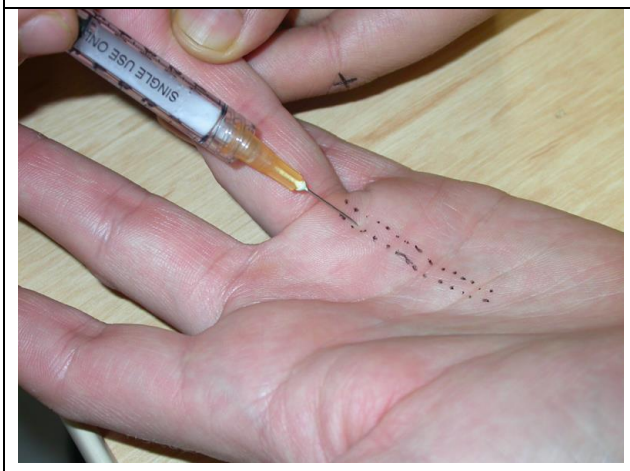
Indication:
Palpable nodules causing trigger finger

Additional / Alternative Therapies:
May settle spontaneously in some cases

Warnings for Patient:
Pain, infection, flushing, flare, skin atrophy, skin depigmentation, steroid absorption, allergy, recurrence of symptoms and inefficacy

Drugs:
Hydrocortisone 12.5-25mg
Depomedrone 10mg or kenalog 5mg

Technique:
Make sure patient is comfortable so can sit still for 5-10 mins
Place hand on pillow, palm side up
Use 1ml syringe, an orange needle and aseptic technique
Inject in the direction of the patient's wrist
Advance the needle until it find a space where the injection proceeds without much resistance.
May be helpful to remove the syringe from the needle and advance it slowly until a point is reached when the needle tilts as the finger is flexed, the needle is withdrawn slightly and the injection made.
Do not inject against resistance as you may be injecting into the tendon itself.



Post Injection Care
Rest for 24 hours
If increased pain, swelling or pain beyond 48 hours – patient needs to contact us (give day unit phone number), GP or A&E (if weekend).

Hand: Flexor & Extensor Tendon Sheath

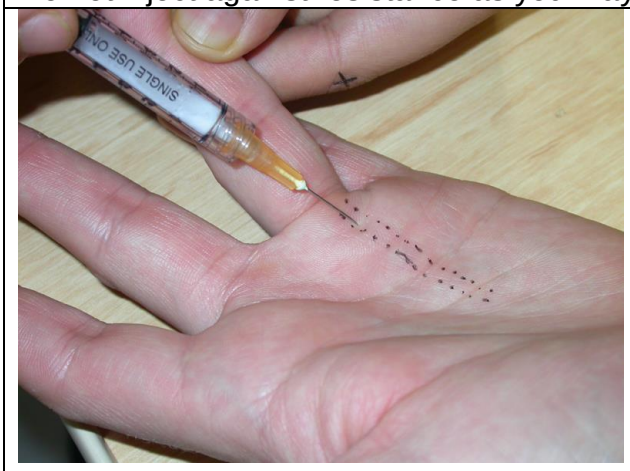
Indication:
Tenosynovitis

Additional / Alternative Therapies:
Physiotherapy

Warnings for Patient:
Pain, infection, flushing, flare, skin atrophy, skin depigmentation, steroid absorption, allergy, recurrence of symptoms and inefficacy

Drugs:
Depomedrone 20mg or kenalog 10mg or hydrocortisone 12.5-25mg

Technique:
Palpate for tendon sheath thickening. Using an orange needle, a 1ml syringe and aseptic technique introduce the needle at 30° to the skin, just distal to the area. Run the needle parallel to the tendon into the tendon sheath and inject. Do not inject against resistance as you may be in the tendon.



Post Injection Care
Rest for 24 hours
If increased pain, swelling or pain beyond 48 hours – patient needs to contact us (give day unit phone number), GP or A&E (if weekend).

Hand: First CMC Joint

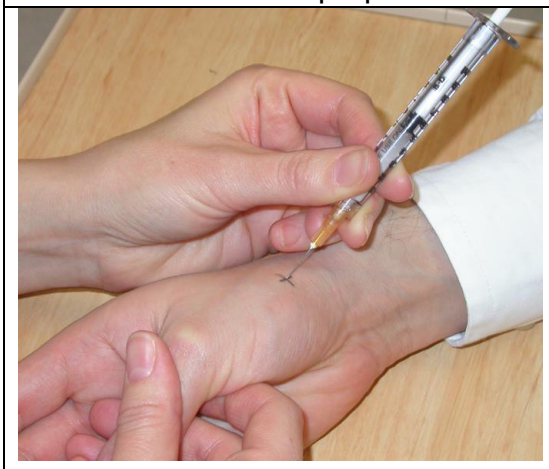
Indication:
Pain (osteoarthritis) – majority of cases
Persistent synovitis
Effusion (aspirate fluid before injection)
Reduced range of movement
Diagnostic (aspiration)

Additional / Alternative Therapies:
Increase DMARD
Increase analgesia
Physiotherapy & splints
USS-guided injection

Warnings for Patient:
Pain, joint infection, flushing, flare, skin atrophy, skin depigmentation, steroid absorption, allergy, recurrence of symptoms and inefficacy

Drugs:
Depomedrone 40mg or kenalog 20mg
+/- 1ml 1-2% lidocaine

Technique:
Distract the thumb with your free hand. Feel for the joint line at the base of the thumb mark accordingly. Using an orange needle and a 1ml syringe and introduce the needle perpendicular to the skin.



Post Injection Care
Rest for 24 hours
If increased pain, swelling or pain beyond 48 hours – patient needs to contact us (give day unit phone number), GP or A&E (if weekend).

Wrist: De Quervain's Tenosynovitis

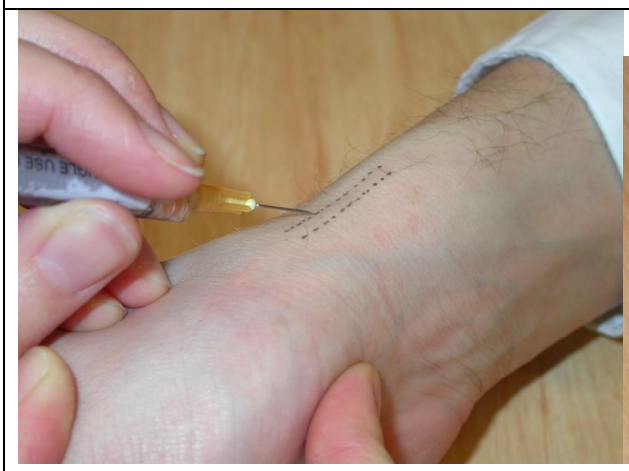
Indication:
Stenosing tenosynovitis of the short extensor and the long abductor thumb tendons

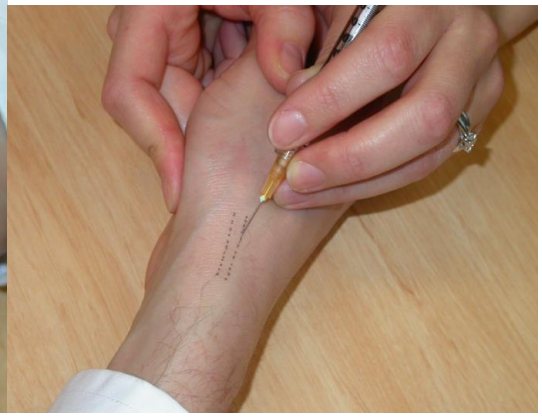
Additional / Alternative Therapies:
Splint, physiotherapy, surgery

Warnings for Patient:
Pain, infection, flushing, flare, skin atrophy, skin depigmentation, steroid absorption, allergy, recurrence of symptoms and inefficacy

Drugs:
Depomedrone 20mg, kenalog 10mg, or hydrocortisone 25mg

Technique:
Inject along the line of the tendon (close to the tendon but not within it) using an orange needle and aseptic technique.





Post Injection Care
Rest for 24 hours
If increased pain, swelling or pain beyond 48 hours – patient needs to contact us (give day unit phone number), GP or A&E (if weekend).

Wrist: Carpel Tunnel Injection

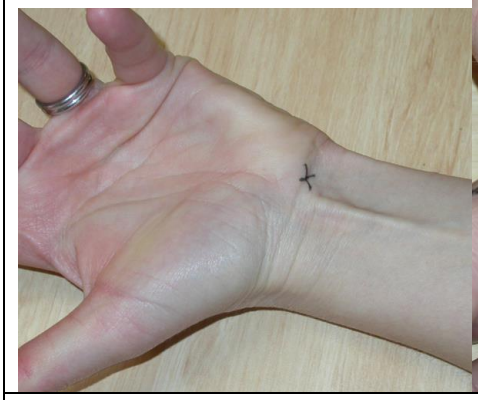
Indication:
Symptoms of median nerve compression

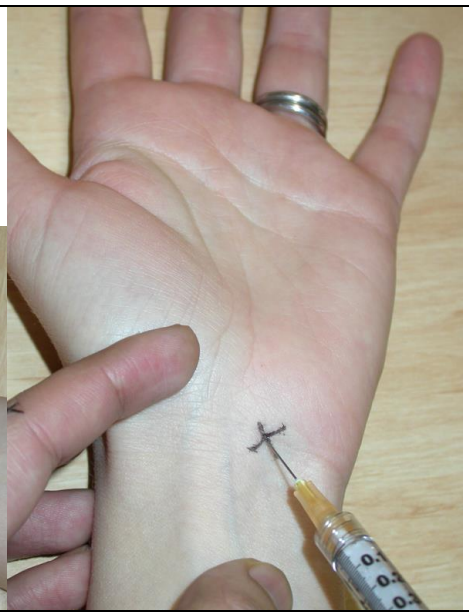
Additional / Alternative Therapies:
Splints, surgery

Warnings for Patient:
Pain, infection, flushing, flare or CTS symptoms, skin atrophy, skin depigmentation, steroid absorption, allergy, inefficacy and recurrence of symptoms.

Drugs:
Depomedrone 20mg or kenalog 10mg or hydrocortisone 25mg
+/- lidocaine

Technique:
The median nerve lies just underneath the tendon of the palmaris longus muscle. The injection site is just lateral to the tendon (or the midline if no tendon is present) at the level of the distal palmar crease. Use an orange needle and aseptic technique. Aim the needle down at 45° into the palm in the direction of the index finger. Insert the needle 1cm.





Post Injection Care
Rest for 24 hours
If increased pain, swelling or pain beyond 48 hours – patient needs to contact us (give day unit phone number), GP or A&E (if weekend).

Wrist: Radiocarpal Joint

Indication:
Persistent synovitis
Effusion (aspirate fluid before injection)
Reduced range of movement
Pain (osteoarthritis)
Diagnostic (aspiration)

Additional / Alternative Therapies:
Increase DMARD
Increase analgesia
Physiotherapy & splints
USS-guided injection

Warnings for Patient:
Pain, joint infection, flushing, flare, skin atrophy, skin depigmentation, steroid absorption, allergy, inefficacy and recurrence of symptoms.

Drugs:
Depomedrone 40mg or kenalog 20mg
+/- 1ml 1-2% lidocaine

Technique:
Place the patient's hand on a pillow or rolled-up towel so that the wrist joint is slightly flexed (25°). Feel for the gap between the end of the radius and the lunate and scaphoid bones. Using a blue needle and septic technique introduce the needle into the joint perpendicular to the skin. Aspirate any fluid present and inject.

Post Injection Care
Rest for 24 hours
If increased pain, swelling or pain beyond 48 hours – patient needs to contact us (give day unit phone number), GP or A&E (if weekend).

Wrist: Lower Radioulnar Joint

Indication:
Persistent synovitis
Effusion (aspirate fluid before injection)
Reduced range of movement
Diagnostic (aspiration)

Additional / Alternative Therapies:
Increase DMARD
Increase analgesia
Physiotherapy & splints
USS-guided injection

Warnings for Patient:
Pain, joint infection, flushing, flare, skin atrophy, skin depigmentation, steroid absorption, allergy, inefficacy and recurrence of symptoms.

Drugs:
Depomedrone 40mg or kenalog 20mg
+/- 1ml 1-2% lidocaine

Technique:
Feel for the joint line using your finger and thumb and pronating and supinating the patient's hand.
Using a blue needle and aseptic technique, introduce the needle tangentially under the dorsal ligaments.

Post Injection Care
Rest for 24 hours
If increased pain, swelling or pain beyond 48 hours – patient needs to contact us (give day unit phone number), GP or A&E (if weekend).

Elbow: Lateral and Medial Epicondylitis

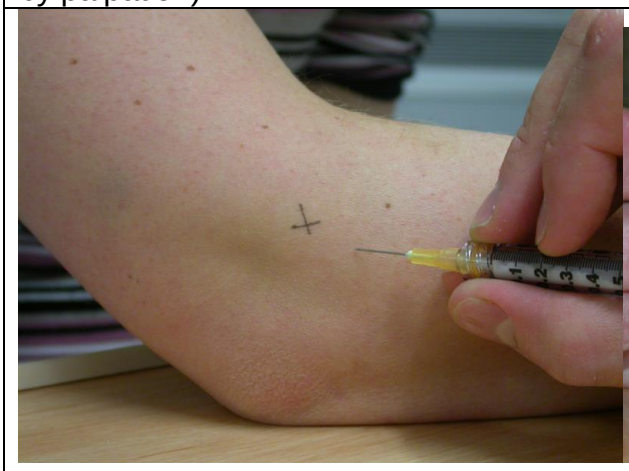
Indication:
Lateral or medial epicondylitis

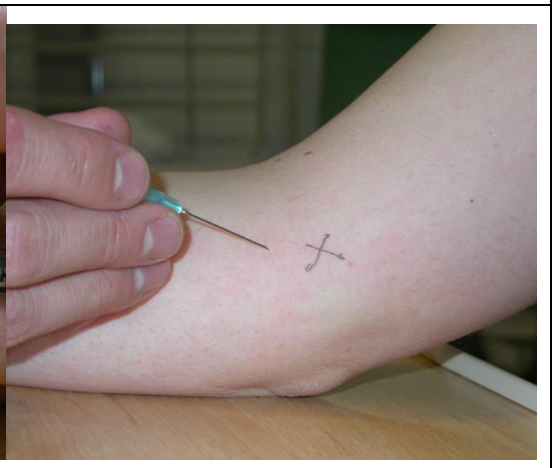
Additional / Alternative Therapies:
Physiotherapy, splints, NSAIDs

Warnings for Patient:
Pain, infection, flushing, flare, skin atrophy, skin depigmentation, steroid absorption, allergy, inefficacy and recurrence of symptoms.

Drugs:
Depomedrone 20mg or kenalog 10mg or hydrocortisone 12.5-25mg made up to 3ml with 1% lidocaine

Technique:
The injection site is the site of maximal tenderness found on palpation. Use a blue needle and aseptic technique.
Avoid the ulnar nerve when injecting medial area (identify the ulnar groove first by palpation)





Post Injection Care
Rest for 24 hours
If increased pain, swelling or pain beyond 48 hours – patient needs to contact us (give day unit phone number), GP or A&E (if weekend).

Elbow: Radio-Humeral Joint

Indication:
Persistent synovitis
Effusion (aspirate fluid before injection)
Reduced range of movement
Pain (osteoarthritis)
Diagnostic (aspiration)

Additional / Alternative Therapies:
Increase DMARD
Increase analgesia
Physiotherapy & splints
USS-guided injection

Warnings for Patient:
Pain, joint infection, flushing, flare, skin atrophy, skin depigmentation, steroid absorption, allergy and inefficacy

Drugs:
Depomedrone 40mg or kenalog 20mg
+/- 1ml 1-2% lidocaine

Technique:
Flex elbow to 90°. Feel the head of the radius at the radiohumeral joint by pressing with your thumb and rotating the patients forearm with your other hand. Aspirate and inject tangentially into the joint.

Post Injection Care
Rest for 24 hours
If increased pain, swelling or pain beyond 48 hours – patient needs to contact us (give day unit phone number), GP or A&E (if weekend).

Elbow: Joint – Posterior Approach

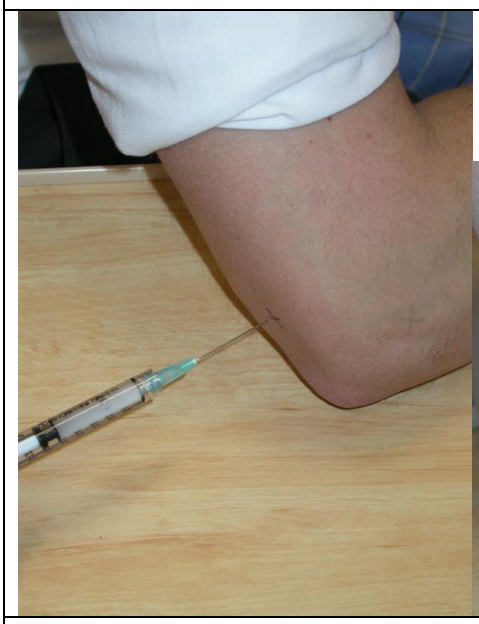
Indication:
Persistent synovitis
Effusion (aspirate fluid before injection)
Reduced range of movement
Pain (osteoarthritis)
Diagnostic (aspiration)

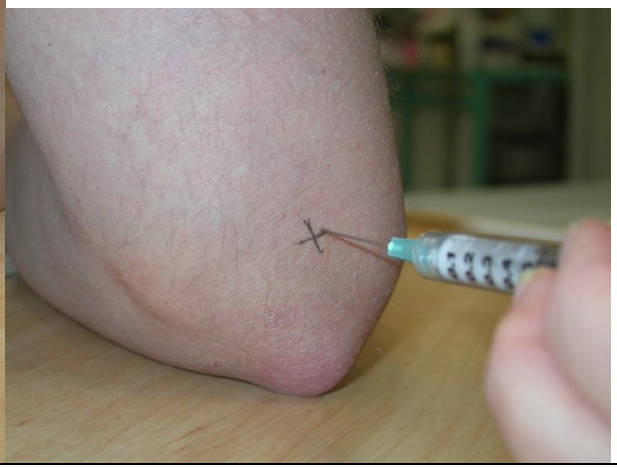
Additional / Alternative Therapies:
Increase DMARD
Increase analgesia
Physiotherapy & splints
USS-guided injection

Warnings for Patient:
Pain, joint infection, flushing, flare, skin atrophy, skin depigmentation, steroid absorption, allergy and inefficacy

Drugs:
Depomedrone 40mg or kenalog 20mg
+/- 1ml 1-2% lidocaine

Technique:
Flex elbow to 90° and feel the depression in the midline at the back of the elbow, between the two halves of the triceps tendon. Use a blue needle and aseptic technique. Place the needle just above the olcrenon process into the elbow joint at the olecranon fossa. Aspirate any fluid present and inject.





Post Injection Care
Rest for 24 hours
If increased pain, swelling or pain beyond 48 hours – patient needs to contact us (give day unit phone number), GP or A&E (if weekend).

Shoulder: Acromioclavicular Joint

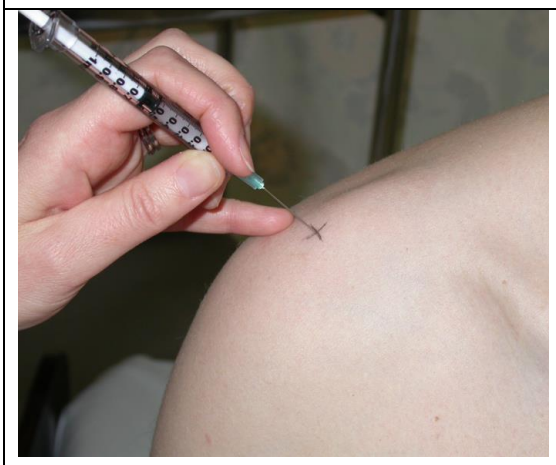
Indication:
Persistent synovitis
Effusion (aspirate fluid before injection)
Pain (osteoarthritis)
Diagnostic (aspiration)

Additional / Alternative Therapies:
Increase DMARD
Increase analgesia
Physiotherapy
USS-guided injection

Warnings for Patient:
Pain, joint infection, flushing, flare, skin atrophy, skin depigmentation, steroid absorption, allergy and inefficacy

Drugs:
Depomedrone 20mg or kenalog 10mg
+/- 0.5ml 1-2% lidocaine

Technique:
Find the joint line anteriorly by palpation. Using an orange needle, 1 ml syringe and aseptic technique, introduce the needle perpendicularly from the front.



Post Injection Care
Rest for 24 hours
If increased pain, swelling or pain beyond 48 hours – patient needs to contact us (give day unit phone number), GP or A&E (if weekend).

Shoulder: Subacromial Bursa

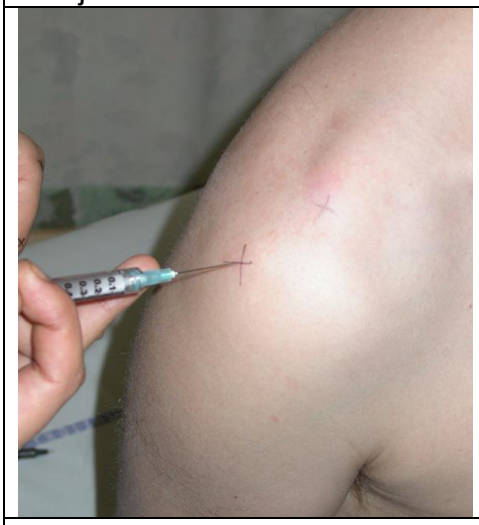
Indication:
Pain on abduction / painful arc
Impingement
Calcific tendonitis
Synovitis (RA)
Effusion (aspirate fluid before injection)
Diagnostic (aspiration)

Additional / Alternative Therapies:
Increase analgesia
Physiotherapy
USS-guided injection

Warnings for Patient:
Pain, joint infection, flushing, flare, skin atrophy, skin depigmentation, steroid absorption, allergy and inefficacy

Drugs:
Depomedrone 40mg or kenalog 20mg mixed with 1-2ml of 1-2% lidocaine
A large volume is required to ensure the bursa (which has a large potential space) is adequately filled.

Technique:
Ask the patient to sit with their elbow flexed and their hand in their lap so that the muscles of the shoulder are relaxed.
Palpate the corcoacromial arch and feel for the gap between the acromium and humeral head (posterolateral). Using a blue needle (or longer green needle in obese patients) and aseptic technique, aim the needle towards the centre of the head of the humerus (can be felt anteriorly). Very little resistance to injection should be felt.



Post Injection Care
Rest for 24 hours
If increased pain, swelling or pain beyond 48 hours – patient needs to contact us (give day unit phone number), GP or A&E (if weekend).

Shoulder: Glenohumeral Joint

Indication:
Adhesive capsulitis (often combined with a SAB injection)
Pain on internal / external rotation
Synovitis (RA)
Effusion (aspirate fluid before injection)
Diagnostic (aspiration)

Additional / Alternative Therapies:
Increase DMARD
Increase analgesia
Physiotherapy
USS-guided injection

Warnings for Patient:
Pain, joint infection, flushing, flare, skin atrophy, skin depigmentation, steroid absorption, allergy and inefficacy

Drugs:
Depomedrone 40mg or 20mg kenalog
+/- 1-2 ml 1-2% lidocaine

Technique:
Posterior Approach:
Ask the patient to sit with their elbow flexed and their hand in their lap so that the muscles of the shoulder are relaxed.
Identify the coracoid process in the front and the joint line at the back. The site of injection is 1.5 cm inferior and medially to the acromium. Use a blue needle (or longer green needle in obese patients) and aseptic technique.

Post Injection Care
Rest for 24 hours
If increased pain, swelling or pain beyond 48 hours – patient needs to contact us (give day unit phone number), GP or A&E (if weekend).

Shoulder: Suprascapular Nerve Blocks

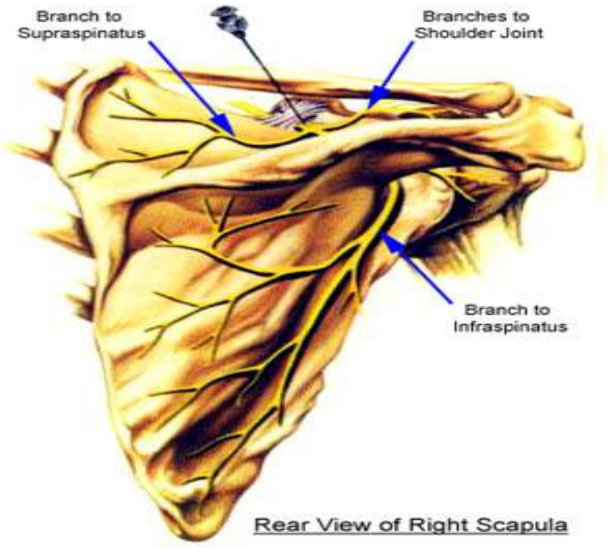
Indication:
Pain radiating from the neck to the shoulder causing shoulder pain.
Intractable pain arising from the shoulder not responsive to shoulder joint injection and analgesia.

Additional / Alternative Therapies:
Increased analgesia e.g. tramadol, dihydrocodeine
Gabapentin, carbamazepine
Physiotherapy.

Warnings for Patient:
Local pain and stinging on injection, bruising / bleeding, infection, intravascular injection and lack of efficacy, pneumothorax

Drugs:
20mg depomedrone or 10mg kenalog mixed with 2ml 0.5% bupivacaine (Marcaine)

Technique:
Ask the patient to sit with their elbow flexed and their hand in their lap so that the muscles of the shoulder are relaxed.
Palpate the spine of the scapular. The site of infiltration is midway between the aromium and the medial end of the spine of the scapular, in the suprascapular fossa.



Post Injection Care
Keep area clean; if signs of infection contact GP or day unit.
No observations required

Head and Neck: Occipital Nerve Blocks

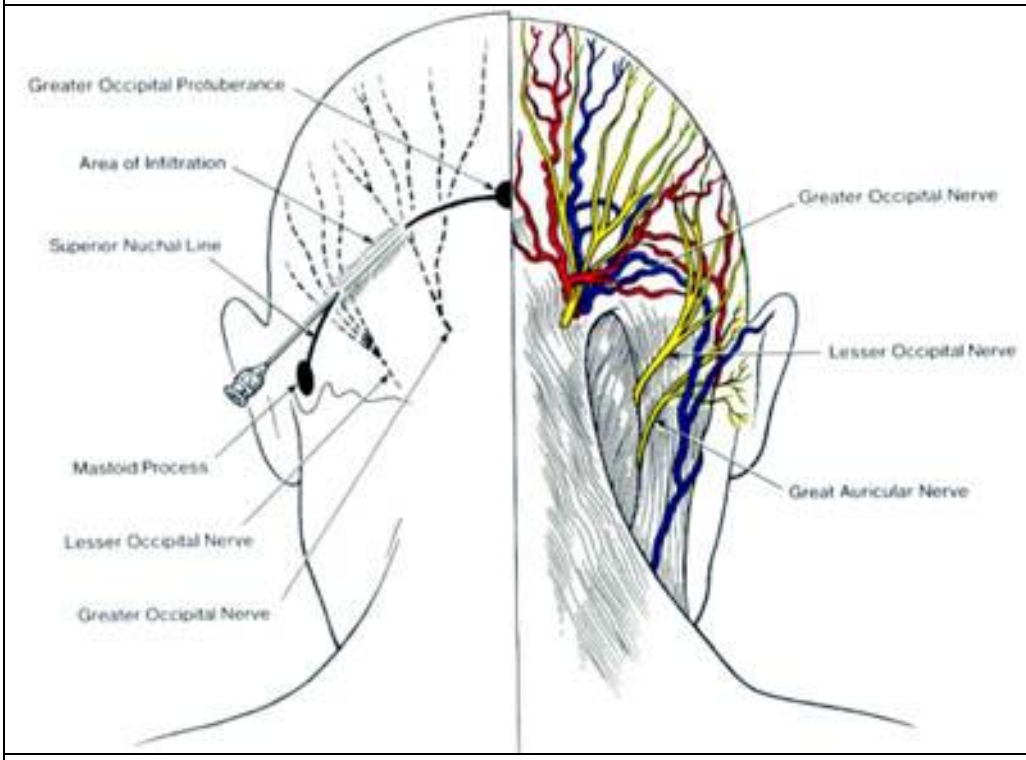
Indication:
Neurological pain radiating from neck to occitput not responsive to standard analgesia

Additional / Alternative Therapies:
Increase analgesia e.g. tramadol, dihydrocodeine
Gabapentin, carbamazepine
Physiotherapy

Warnings for Patient:
Local pain and stinging on injection, bruising / bleeding, infection, intravascular injection and lack of efficacy. Recurrence of symptoms.

Drugs:
20mg depomedrone or 10mg kenalog mixed with 2ml 0.5% bupivacaine (Marcaine)

Technique:
Patient seated in chair with back towards you. The site of infiltration is midway between the greater occipital protruberance and the mastoid process avoiding the occipital artery.



Post Injection Care
Keep area clean; if signs of infection contact GP or day unit.
No observations required

Head and Neck: TMJ

Indication:
Synovitis of TMJ

Additional / Alternative Therapies:
Image-guided injection / referral to dental school

Warnings for Patient:
Reversible facial nerve paralysis
Pain, joint infection, flushing, flare, skin atrophy, skin depigmentation, steroid absorption, allergy and inefficacy

Drugs:
10-20 mg depomedrone or 5–10 mg kenelog

Technique:
Make sure patient has head supported. Feel the condyle of the mandible by asking patient to move jaw side to side and to open and shut mouth. The joint line can be felt accurately in almost all patients. The direction of entry is slightly upwards. Do not inject against resistance. Use aseptic technique.

Post Injection Care
Rest for 24 hours
If increased pain, swelling or pain beyond 48 hours – patient needs to contact us (give day unit phone number), GP or A&E (if weekend).

Spine: Caudal Epidural

Indication:
There is much debate regarding the indications for and efficacy of caudal epidurals.
Consider for (discuss with senior): Lumbosacral disc herniation, Spinal stenosis with radicular pain (central canal stenosis, foraminal and lateral recess stenosis), Compression fracture of lumbar spine with radicular pain, Facet or nerve root cyst with radicular pain.

Contraindications:
Systemic or local infection.
Anti-coagulation (stop warfarin 2 days before and check INR on day of procedure <1.5.

Additional / Alternative Therapies:
Conservative management (analgesia etc.).
Surgery.
Facet joint injection.

Warnings for Patient: Consent the patient for local pain, haematoma (subcutaneous or within caudal space), failure to relieve pain or failed procedure. Infection in the caudal space is rare but potentially serious. Sign consent form. 60-75% of patients improve. Response takes about 2 days and a good response is 6 months+.

Drugs: 5-10ml of 1% lidocaine for skin anaesthesia. 80mg of Kenalog made up to 20ml with sterile water for epidural injection.

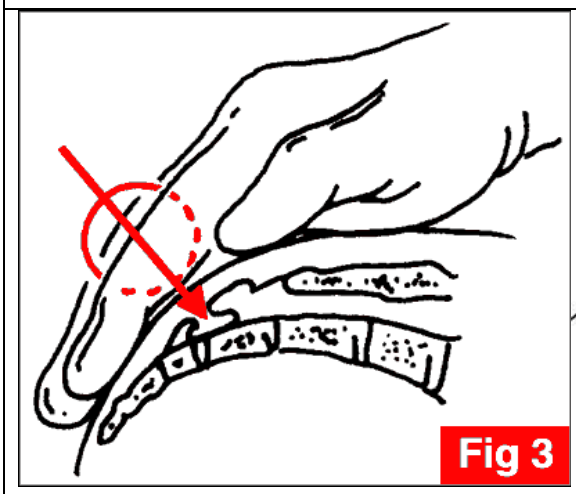
Equipment: Dressing pack, sterile gloves, swabs, tegaderm dressing, spinal needle, 4 green needles, 1 orange needle, 20ml syringe, 2x10ml syringe, stethoscope (and an assistant). Betadine.

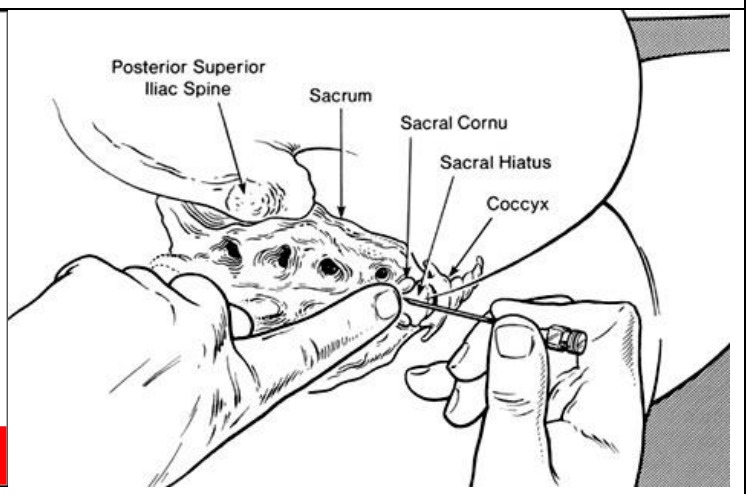
Technique:
This procedure is technically difficult in some cases and therefore adequate tuition and supervision must be sought.

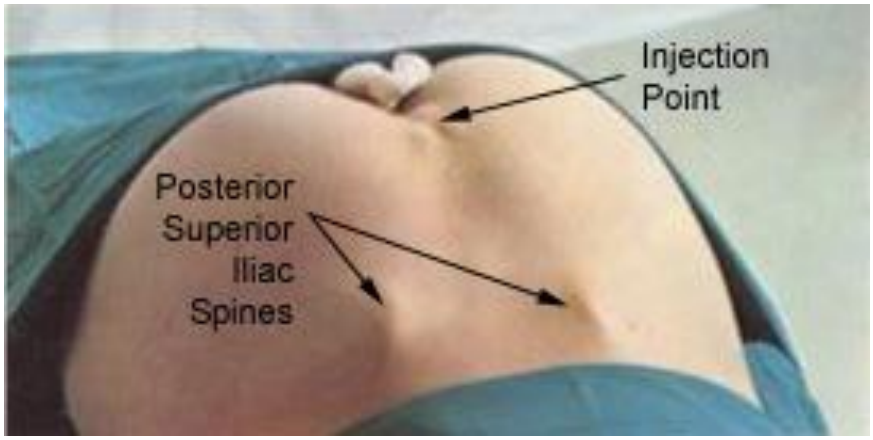
The patient lies prone with a pillow under the head and another under the pelvis. Legs are internally rotated. The dural sac ends between S1 and S3. The sacral nerves usually end at S4. The rest of the epidural space contains fat. Injection site is the sacral hiatus, a space where the laminae of S5 fail to fuse in the midline. This is identified by palpating upwards from the tip of the coccyx for a depression, which is usually approximately the distance from the tip of the finger to the PIP. The bony sacral cornua can usually be palpated just above the sacral hiatus. Mark this point.

Wear sterile gloves and open all equipment. Sterilise the skin with betadine (cover quite a wide area). Infiltrate 1% lidocaine from skin down to resistance at the sacrococcygeal ligament (withdrawing to ensure no blood). Whilst waiting for anaesthetic to work prepare Kenalog in sterile water. Check that skin is numb and insert needle at sacral hiatus as marked at about 45 degrees. A “give” is felt as the caudal space is entered and the needle will feel held securely by bone when moved from side to side. If needle hits bone try a little above or below. Remove the stilette. Perform the whoosh test as follows: get an assistant to put stethoscope in your ears and the diaphragm about 15cm above the needle. Rapidly inject 10ml of air and if in the caudal space you will hear a “whoosh”. Sometimes this test reproduces the back pain. Subcutaneous needle placement should be obvious during injection due to large volume of fluid. Intravascular placement can

occur: check for blood after removing stilette, although not always seen. Perforation of the rectum has been reported, and would be an infective risk, although the needle puncture itself is not harmful. Inject the Kenalog/water solution over about 5min, pausing if back pain is reproduced. Remove needle and apply a dressing. The nurses will supervise the patient for the next hour lying on each side for 15min, and check blood pressure and micturition are OK before discharge.







Post Injection Care

The nurses will supervise the patient for the next hour lying on each side for 15min, and check blood pressure and micturition are OK before discharge.

Keep area clean; if signs of infection contact GP or day unit.

Hip: Trochanteric Bursa

Indication:
Pain arising from the trochanteric bursa and surrounding tissues

Additional / Alternative Therapies:
Analgesia, exercise
May resolve spontaneously
Treat aggravating conditions e.g. poor gait due to OA knee, obesity

Warnings for Patient:
Local pain and stinging on injection, bruising / bleeding, infection, intravascular injection and lack of efficacy.

Drugs:
Depomedrone 60mg or kenalog 30mg and 2-3ml of 1-2% lidocaine

Technique:
Ask patient to lie on unaffected side. Palpated area for the point of maximal tenderness. Using a green needle (extra-long if available for obese patients) and aseptic technique, inject deep into the tissues and infiltrate widely.

Post Injection Care
Keep area clean; if signs of infection contact GP or day unit.

Knee

Indication:
Persistent synovitis, effusion (aspirate fluid before injection), reduced range of movement, pain (osteoarthritis), diagnostic (aspiration), neuropathic pain, Bakers cyst (intact or ruptured)

Additional / Alternative Therapies:
Increase DMARD
Increase analgesia
Physiotherapy (if deceased range of movement or OA, quadriceps wasting)
Local infiltration of painful areas around the knee e.g. collateral ligament insertion in an unstable knee.

Warnings for Patient:
Pain, joint infection, flushing, flare, skin atrophy, skin depigmentation, steroid absorption, allergy and inefficacy

Drugs:
Depomedrone 80mg or kenalog 40mg
+/- 1-2 ml 1-2% lidocaine
Or: 20mg/2ml of hyaluronic acid (Hyalgan) – OA only – given once a week for 3 weeks
2-3ml 0.5% marcaine – neuropathic pain
5mg guanethidine – neuropathic pain
TNF-antagonists or methotrexate can be used in special circumstances under direct supervision of a consultant

Technique:
Can be injected from lateral or medial side of patella.
The site of injection is 1/3 down from top of patella.
A gap between the patella and femur should be felt at this site.
If the needle is in the joint, you should be able to aspirate fluid.
Use a green needle and aseptic technique.

Post Injection Care
Rest for 24 hours
If increased pain, swelling or pain beyond 48 hours – patient needs to contact us (give day unit phone number), GP or A&E (if weekend).

Ankle: Tibiotalar Joint

Indication:
Persistent synovitis, effusion (aspirate fluid before injection), reduced range of movement (foot dorsi/plantar flexion), pain (osteoarthritis), diagnostic (aspiration).

Additional / Alternative Therapies:
Increase DMARD
Increase analgesia
Physiotherapy / orthotics

Warnings for Patient:
Pain, joint infection, flushing, flare, skin atrophy, skin depigmentation, steroid absorption, allergy and inefficacy

Drugs:
Depomedrone 40mg or kenalog 20mg
+/- 1 ml 1-2% lidocaine

Technique:
Ask the patient to dorsiflex the foot so as to put the tibialis anterior tendon on the stretch. Palpate just immediately laterally to it the space between the tibia and the talus. Avoid the anterior tibial artery. Use a blue needle and aseptic technique. Angle the needle slightly cranially.

Post Injection Care
Rest for 24 hours
If increased pain, swelling or pain beyond 48 hours – patient needs to contact us (give day unit phone number), GP or A&E (if weekend).

Ankle: Anterior Subtalar

Indication:
Persistent synovitis, effusion (aspirate fluid before injection), reduced range of movement (foot in/eversion), pain (osteoarthritis), diagnostic (aspiration).

Additional / Alternative Therapies:
Increase DMARD
Increase analgesia
Physiotherapy / orthotics

Warnings for Patient:
Pain, joint infection, flushing, flare, skin atrophy, skin depigmentation, steroid absorption, allergy and inefficacy

Drugs:
Depomedrone 40mg or kenalog 20mg
+/- 1 ml 1-2% lidocaine

Technique:
Inject via the lateral approach. The site of entry is 1cm infero-distal to the lateral malleolus. Use a blue needle and aseptic technique.

Post Injection Care
Rest for 24 hours
If increased pain, swelling or pain beyond 48 hours – patient needs to contact us (give day unit phone number), GP or A&E (if weekend).

Ankle: Posterior Tibial and Peroneal Tendon Sheaths

Indication:
Tenosynovitis

Additional / Alternative Therapies:
Physiotherapy

Warnings for Patient:
Pain, infection, flushing, flare, skin atrophy, skin depigmentation, steroid absorption, allergy, recurrence of symptoms and inefficacy

Drugs:
Depomedrone 20mg or kenalog 10mg or hydrocortisone 12.5-25mg

Technique:
Posterior tibial: Posterior to medial malleolus
Peroneal: Posterior to lateral malleolus
A tangential approach is used, directing the needle proximally. Place the needle next to the tendons within the tendon sheath (not in the tendon). Use a blue needle and aseptic technique.

Post Injection Care
Rest for 24 hours
If increased pain, swelling or pain beyond 48 hours – patient needs to contact us (give day unit phone number), GP or A&E (if weekend).

Foot: Plantar Fasciitis

Indication:
Localised tenderness of the plantar fascia where it inserts into the calcaneum

Additional / Alternative Therapies:
Orthotics (heel pad)
NSAID / analgesia
Rest
US-guided injection
Lithotripsy / radiotherapy

Warnings for Patient:
Pain, infection, flushing, flare, skin atrophy, skin depigmentation, steroid absorption, allergy, recurrence of symptoms and inefficacy. Rupture of plantar fascia.

Drugs:
Depomedrone 20mg or kenalog 10mg with 1ml 1-2% lidocaine
(Immediate pain relief from anaesthetic aids diagnosis)

Technique:
Locate the site of maximum tenderness on the plantar surface of the heel.
Plantar approach: Inject directly through the sole of the foot perpendicular to the skin as close to bony insertion as possible (approx 1-1.5cm deep; warn patient that this will be painful)
Medial approach: Needle is inserted through the thinner skin on the side of the foot and passed under skin to tender site as close to bony insertion as possible.
Use blue needle and aseptic technique.

Post Injection Care
Rest for 24 hours
If increased pain, swelling or pain beyond 48 hours – patient needs to contact us (give day unit phone number), GP or A&E (if weekend).

Foot: MTPs

Indication:
Persistent synovitis, effusion (aspirate fluid before injection), reduced range of movement, pain (osteoarthritis), diagnostic (aspiration).

Additional / Alternative Therapies:
Increase DMARD
Increase analgesia
Orthotics (metatarsal pad, insoles, shoes)
Podiatry
Surgery

Warnings for Patient:
Pain, joint infection, flushing, flare, skin atrophy, skin depigmentation, steroid absorption, allergy and inefficacy

Drugs:
Depomedrone 10mg or kenalog 5mg
+/- 0.5 ml 1-2% lidocaine

Technique:
Palpate the joint line on the dorsum of the foot (moving the toe passively at the same time will help this). Introduce the needle obliquely from the side so that its tip lies under the extensor tendons which cover the dorsum of the joint. Ease of injection is the best guide as to whether the needle is correctly placed. Use an orange or blue needle and aseptic technique.

Post Injection Care
Rest for 24 hours
If increased pain, swelling or pain beyond 48 hours – patient needs to contact us (give day unit phone number), GP or A&E (if weekend).

Rheumatoid Nodules

Indication:
Pain, unsightly, vasculitic

Additional / Alternative Therapies:
Consider reducing methotrexate dose or adding hydroxychloroquine
Surgery

Warnings for Patient:
Pain, infection, flushing, flare, skin atrophy, skin depigmentation, steroid absorption, allergy and inefficacy

Drugs:
Depomedrone 10 mg / kenalog 5mg / hydrocortisone 12.5-25mg

Technique:
Using aseptic technique and an orange needle, inject directly into the base of the nodule. Do not inject against resistance.

Post Injection Care
Plaster for 24 hours. Look out for signs of infection.