Subacromial bursal injection

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Subacromial bursal corticosteroid injections, also known as subacromial-subdeltoid bursal injections, are used in patients with limited or no response to initial treatment with impingement syndrome, subacromial bursitis and/or rotator cuff disorders. Non-steroidal anti-inflammatory drugs (NSAIDs) and activity modification are the initial treatments to reduce the pain and inflammation.

Indications

- symptomatic subacromial impingement syndrome
- rotator cuff disorder
- diagnostic injection
- as part of a barbotage procedure for calcific tendinopathy

Contraindications

Infection/cellulitis of the overlying skin, osteomyelitis of the adjacent bone and bacteremia are absolute contraindications.

Allergic reaction to disinfectants and local anesthetics, more than 3-4 corticosteroid injections per patient per year, poorly controlled diabetes, coagulopathy, and glaucoma are relative contraindications.

Procedure

The skin is disinfected. Sterile gloves are worn, and a 21-27 gauge needle is used to penetrate the skin parallel or oblique concerning the surface of the probe and 2 cm away from the probe. The needle's progress is monitored in real time with ultrasonographic guidance, and the injection is performed when the tip appears to be inside the bursa. Hypoechoic fluid can be seen spreading inside the bursa while injecting. The thinner the needle, the more difficult it is to identify the needle and to perform the injection.

A dose of corticosteroid (0.5 mL of dexamethasone 4 mg/mL) with local anesthetic (1-1.5 mL of bupivacaine 0.5%) can be used for analgesic effect.

Preprocedural evaluation

- review contraindications
- review previous images
- perform complete ultrasound study of the affected shoulder to confirm a diagnosis
- informed consent

Positioning/room set up

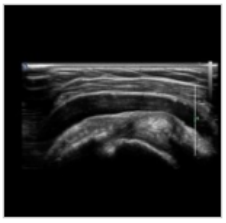
US-guided corticosteroid injections into the subacromial-subdeltoid bursal space are carried out with the patient sitting on a chair with the patient's back turned to the doctor. Lateral approach is the most frequently used approach in which the long axis of the supraspinatus is parallel to the probe. The appropriate position of the shoulder is identified with ultrasound (the thickest part of the bursa or the area with more fluid accumulation in the bursa), the patient is asked to stay still and keep the position.

Equipment

- sterile gauze
- sterile gloves

Cases and figures

Case 1: subacromial bursal injection



Case 2: subacromial subdeltoid bursa inje...

- skin disinfectant
- 21 to 27 gauge long needles
- local anesthetic: 1-1.5 mL of bupivacaine 0.5%
- corticosteroids: 0.5 mL of dexamethasone 4 mg/mL

Technique

Lateral approach is the most frequently used approach in which the long axis of the supraspinatus is parallel to the probe, and the needle is inserted parallel or oblique in relation to the probe and 2 cm away from the probe to avoid the sterile needle contact with the probe.

Postprocedural care

Avoidance of shoulder overuse for 2-3 days is recommended to the patients.

Symptoms suggesting infection and the possibility of pain and rash at the site of the injection are explained to patients.

Complications

Infection is an infrequently occurring complication but should be included in the consent, along with bleeding and allergy. Vasovagal reaction within 5-10 minutes post-procedure can occur and lying patients down for these procedures prevents any unnecessary injuries if one was to occur. Flushing of the skin within 2-3 days after the injection can occur but are more common with intra-articular corticosteroid injections.

Outcomes

Subacromial-subdeltoid bursal injections are relatively straightforward and well-tolerated procedure by the patients, although using larger than necessary needles and going into the cuff tendons are not so well tolerated. Emphasis should be made on the importance of post-procedure physiotherapy. Corticosteroid containing injectate can be injected into the appropriate space confidently under ultrasonographic guidance, and vascular, neural and tendons are avoided with certainty during the procedure.