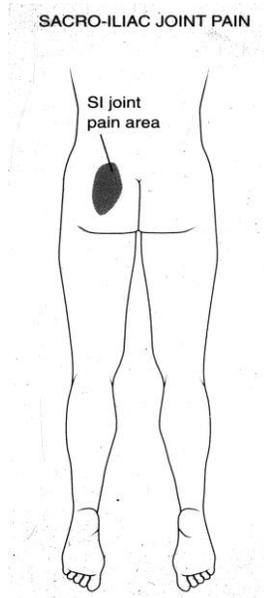


## **Sacroiliac joint injection**

Sacroiliac joint injections were first described in 1938 by Haldeman and the contrast used in fluoroscopic guidance dates back to 1982 (Hendrix). The sacroiliac joint is a synovial joint, synarthrosis, and amphiarthrosis, is a C-shaped or L-shaped joint, with a sacral side with thick hyaline cartilage and an ilial side with fibrocartilage. The joint has four degrees of rotation and 1.6 mm translation (Sturesson 1989). Joint motion decreases with age. Hypo- or hypermobility affects overall load transmission. The pain is typically below L5 and maximum at PSIS or sacral sulcus. The usual referral zone is between the PSIS and greater trochanter but pain referral can be to the groin, thigh, lumbar spine, less commonly distal to the knee (Fortin 1994).

Causes of Sacroiliac joint pain can be split into four categories: traumatic, biomechanical, hormonal, and inflammatory joint disease. Traumatic injuries to the SIJ are caused when there is a sudden impact which 'jolts' the joint. A common example is landing on the buttocks. This kind of injury usually causes damage to the ligaments which support the joint. Pain due to biomechanical injuries will usually come on over a period of time and often with increased activity or a change in occupation/sport etc. The most common biomechanical problems include leg length discrepancy, overpronation, 'twisted pelvis', and muscle imbalances. Hormonal changes, most notably during pregnancy can cause sacroiliac pain. In preparation for giving birth, the ligaments of the pelvis especially increase in laxity. Combining this with an increase in weight putting extra strain on the spine, may lead to mechanical changes which can result in pain. Spondyloarthropathies are inflammatory conditions which affect the spine. These include Ankylosing Spondylitis which is the most common inflammatory condition to cause SI joint pain.

There is no single valid (motion or provocative) test (Schwarzer et al 1995, Maigne et al 1996, Dreyfuss et al 1996) sensitive or specific for SIJ pain. Indications for SIJ injections or blocks are a high index of suspicion for SIJ pain based on history and physical examination or as part of systematic evaluation of low back pain.



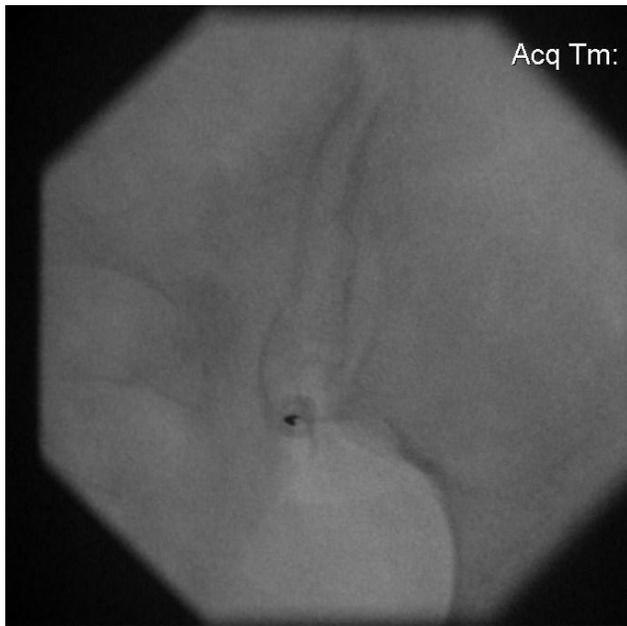
Conventional, clinical and even sophisticated manual examination of the joint does not predict response to diagnostic blocks (Schwarzer et al, 1995; Maigne et al, 1996). Controlled diagnostic blocks are the only means of determining if a SIJ is painful or not.

### **Technique, monitoring, drugs, and aftercare**

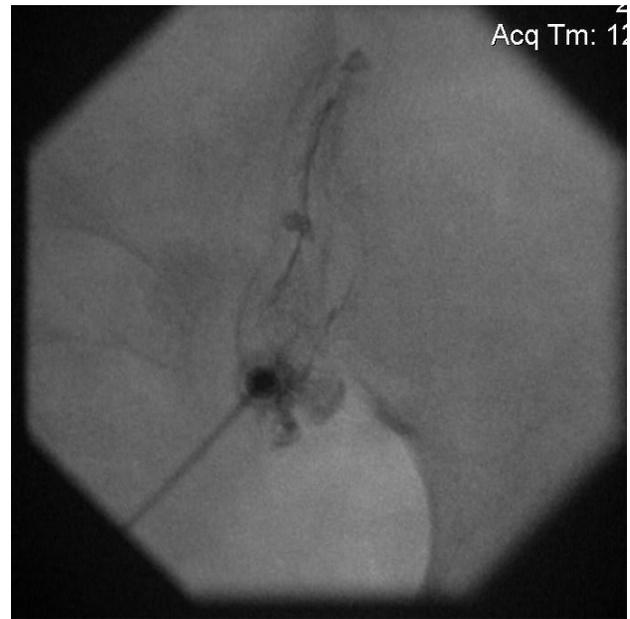
Informed and written consent obtained to proceed with the procedure. Explain the rationale and benefits (pain relief, improved mobility or stability and function) of the procedure and go over potential risks (bleeding, infection, reaction to drugs, increased pain post-injection). Contra-indications are a history of contrast, local anaesthetic, or steroid allergy or previous anaphylactic reaction, evidence of focal or systemic infection, known bleeding diathesis, pregnancy, and immunosuppression. If the patient is on warfarin, discuss the case with the consultant Physician and consider a three day break from Warfarin. Restart the Warfarin on the same evening of the procedure.

After appropriate disinfection of the physician's hands with Hibiscrub, sterile gloves are worn and the area of the lower back disinfected with Betadine and a cover applied over the patient's buttocks. A C-arm Fluoroscope is used. Stand opposite to procedure side. The patient is put into the prone position on the radiography table. BP and pulse are taken and documented. A Pulse and Oxygen saturation monitor is turned on and the sensor fitted to the patient's index finger. The parameters are monitored throughout and after the procedure.

Obtain a PA view of the lumbar spine focusing on the region to be injected. Align both upper endplates closest to superior articular process, then ipsilaterally obliquely until the joint silhouette first appears. This positioning of the C-arm best visualizes the most posterior aspect of the joint space. Using a 23G 1 ¼ blue needle, the skin is anaesthetized at the access point with 1ml 1% lidocaine. Using a spinal needle (22GA 3.5inch) with the tip slightly bent, the needle tip is advanced under X-ray guidance. The target point is in the mid-portion of the joint silhouette. Proceed by injection 0.3 mls of non-ionic contrast to confirm correct final needle position (positive arthrogram) and then introduce no more than 1ml of a mixture of 1% Lidocaine and Kenalog (10mg). The needle is withdrawn and the skin cleaned and a sterile dressing applied. The patient is monitored for 30 minutes and then allowed to leave the clinic with a relative driving (no driving for the patient for 24hrs). The patient is provided with aftercare notes (potential adverse reactions following steroid injections, delayed effect of steroid, short-term anaesthetic effect, signs of infection, emergency telephone number in case required of clinic out of hours ) and reviewed a fortnight later.



(I)



(J)

**Image I demonstrate the needle tip lying perpendicular and within the distal sacroiliac joint pole. After injection of dye, image J shows the contrast filling the whole of the outlines of the shell-shaped sacroiliac joint.**