

SI Joint Intraarticular Needleplacement Flouro versus Ultrasound guided A Cadaver Analysis

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Background:

- In case of chronic SI Joint mediated low back pain (LBP) it is necessary to confirm the diagnosis after history, Physical examination (pain location lower L5, at least three physical exam findings with painprovocationmaneuvers), by double comparative anesthetic blocks with a high degree of pain relief. The role of the i.a. block for the recommendation for a treatment with RF methods is discussed.

1 David J. Kennedy, Andrew Engel, D. Scott Kreiner, Devi Nampiarampil, Belinda Duszynski, John MacVicar. Fluoroscopically Guided Diagnostic and Therapeutic Intra-Articular Sacroiliac Joint Injections: A Systematic Review. Pain Medicine, August, 2015. 10.1111/pme.12833

2 Wade King, MMedSc, MMed(Pain), Shihab U. Ahmed, MD, Jamie Baisden, MD, Nileshkumar Patel, MD, David J. Kennedy, MD, John MacVicar, MB, ChB, MPainMed, Belinda Duszynski, BS. Diagnosis and Treatment of Posterior Sacroiliac Complex Pain: A Systematic Review with Comprehensive Analysis of the Published Data, Pain Medicine 2015; 16: 257–265

- The evidence for diagnostic accuracy is Level II for dual diagnostic blocks with at least 70% pain relief 3
- i.a. guided injection is an important tool for further treatment of chronic pain with RF or steroid injections 4

3 Thomas T. Simopoulos, MD, Laxmaiah Manchikanti, MD, Sanjeeva Gupta, MD, Steve M. Aydin, DO, Chong Hwan Kim, MD, Daneshvari Solanki, FRCA, Devi E. Nampiarampil, MD, Vijay Singh, MD, Peter S. Staats, MD, and Joshua A. Hirsch, MD, Systematic Review of the Diagnostic Accuracy and Therapeutic Effectiveness of Sacroiliac Joint Interventions, Pain Physician 2015; 18:E713-E756 • ISSN 2150-1149

4 Sibbitt WL Jr1, Peisajovich A, Michael AA, Park KS, Sibbitt RR, Band PA, Bankhurst AD. Does sonographic needle guidance affect the clinical outcome of intraarticular injections? J Rheumatol. 2009 Sep;36(9):1892-902. doi: 10.3899/jrheum.090013. Epub 2009 Jul 31.

AIM:

- Assessment of frequency of intraarticular injections.
- Flourosocopy (FC) vs Ultrasound (US)

Materials and Methods:

Assessment of intraarticular injection by dissection (via ventral approach): intraarticular (ia) and intraligamentous (il)

- 21 cadavers embalmed with Thiel's method
- 10 with US (Klauser et al) both sides
- 10 with FC (SIS technique) both sides
- 0.3-0.5 cc contrast
- 2 cc of latex injected
- Condition during puncture: score: 1=very good; 5 very bad
- subj. feeling of intraarticular injection (yes or no)
- Intraarticular spread of contrast (FC - yes or no)

Flourosocopyguided injections:

- Following the Practice Guidelines for Spinal Diagnostic Procedures 6 (second edition by Nik Bogduk): ap-view, contralateral oblique view, ipsilateral oblique view to identify the posterior (= medial), inferior margin. It is at best, when the medial joint line gets maximal crisp (the beam is directed into the posterior opening of the inferior joint space). At times a 20-25 degree cephalad tilt can be necessary to differentiate the posterior from the anterior (lateral) joint space.

6 Nikolai Bogduk, 2nd Edition International Spine Intervention Society, Practice Guidelines for Spinal Diagnostic and Treatment Procedures, 2013

Results:

	FC (n=22 sides, 2 failed)	US (n= 20 sides)
Visibility during puncture	1: 9x; 3: 11x 5: 2x	1: 11x; 3: 6x 5: 3x
Intraarticular injection feeling	Yes: 18x; No: 2x	Yes: 11x; No: 9x
Contrast i.a. spread	11 (1 Latex not injectable) 10	
Anatomical assesment	ia: 10x; il: 10 x (iv: 1x+1 x il)	ia: 1x; il: 19x

Conclusions:

- Request of intraarticular injection: better FC
- Intraligamentous spread: both

Needle insertion - target point about 1-2 cm cephalad the most inferior end of the visible joint space (Fig. 1).

Contrastmedium injection (0.3-0.5 cc Iopamidol) (Fig. 2).



Fig. 1



Fig. 2

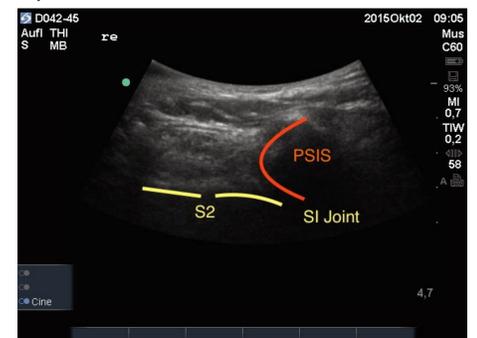
Step 1: Ultrasound guided Injections - Frog Sign:

All injections were done in the „lower level technique“, starting at the landmark of the sacral hiatus in transverse position. (Fig.3).



Step 2:

Lateral and cephal movement in transverse position



Needle Position in plane technique:



Results: ia

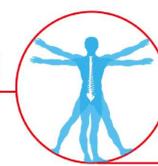


Results: li



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