

# Hip Injections: Can Ultrasound Compete with Fluoroscopy?

Soumo De, MD, [sde@kumc.edu](mailto:sde@kumc.edu)

Kamran Ali, MD, [kamrad9898@yahoo.com](mailto:kamrad9898@yahoo.com)

University of Kansas-Wichita

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# Disclosures

- No relevant author disclosures.

# Introduction

- Common reasons for joint injections:
  - Contrast injection prior to magnetic resonance imaging arthrograms
  - Verifying position prior to steroid injection and joint aspiration.

- Ultrasound and fluoroscopic guidance are two approach methods.
- Past comparisons evaluated factors including pain and outcome after steroid injection.

# Hypothesis

- The technical success rate between ultrasound and fluoroscopy have an equivalent success rate between the procedures.

# Method

- We reviewed 31 adult ultrasound guided hip injections and 26 adult fluoroscopic guided hip injections at our institution from 2012 to 2016 for a total of 57 hip injections.
- Procedures were performed either by an attending or a resident with attending supervision.

- Injection success was determined by the presence of intra-articular contrast material as seen on ultrasound and fluoroscopic imaging.
- Mixed or extra-articular contrast was considered suboptimal. Fluoroscopic time was also recorded.

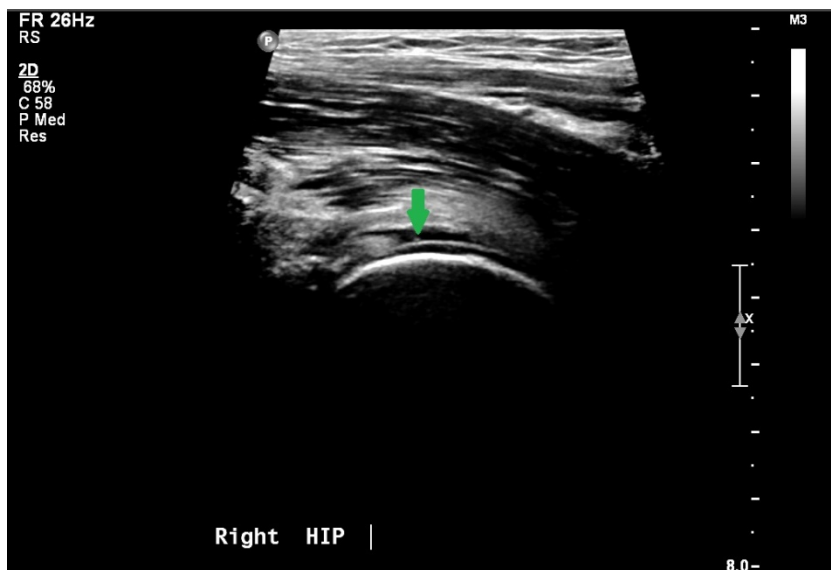
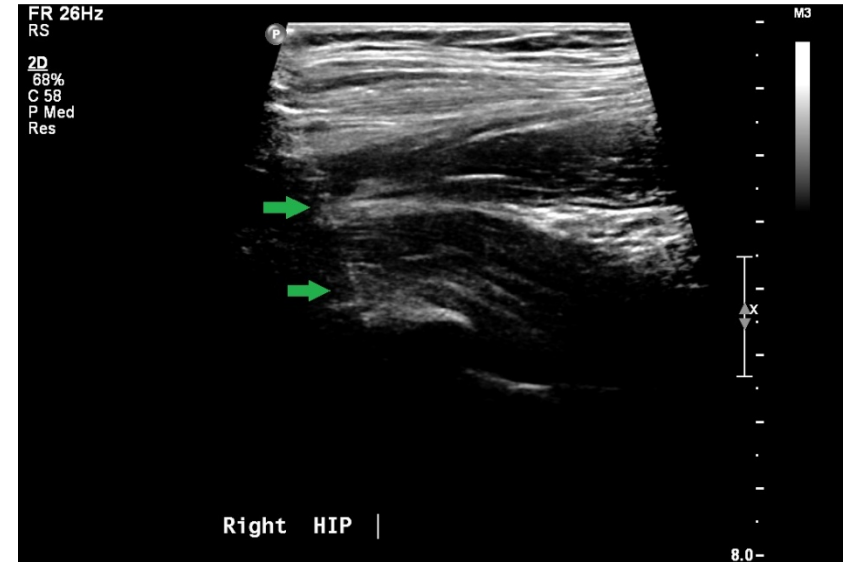
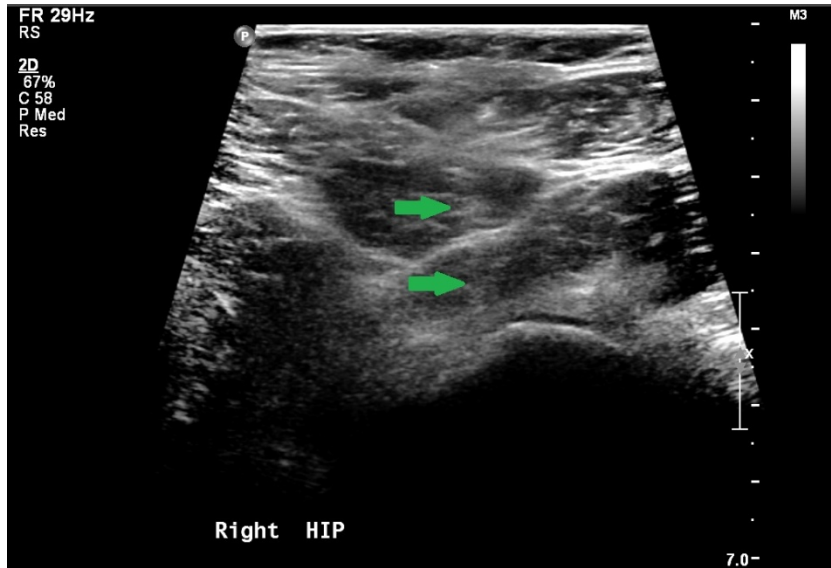
# Fluoroscopic injection



Procedure at our Institution: Fluoroscopic images during intra-articular injection of contrast in the hip joint.



# Ultrasound Guided Injection



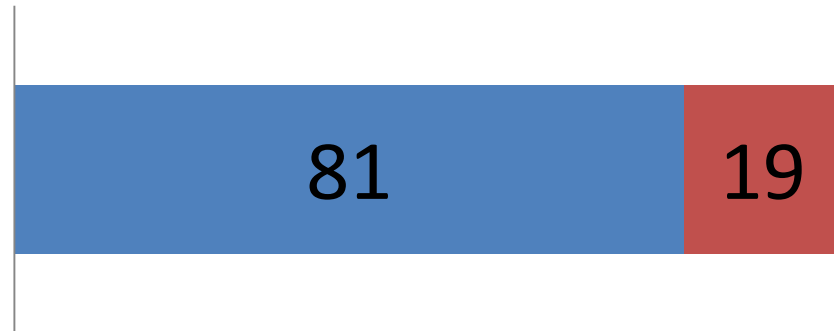
Procedure at our institution:  
Top left and right images show  
transverse and longitudinal  
needle positioning in the joint,  
respectively.

Bottom left image shows  
injected fluid in the joint.

# Results Fluoroscopy

■ Successful %   ■ Suboptimal %

Fluoroscopic Guided  
Procedures



- Suboptimal injections were mixed intra- and extra-articular injections.
- 0% unsuccessful procedures.
- Average fluoroscopic time was 82 seconds.

# Results Ultrasound

■ Successful %    ■ Suboptimal %

Ultrasound Guided  
Procedures



- Suboptimal injections
  - 3 patients with mixed intra- and extra-articular injections.
  - 2 patients with extra-articular injection.
  - 1 patient with no contrast injection due to patient discomfort.
  - 1 patient with inadequate visualization of the hip joint.

# Discussion

- Our comparison demonstrated a slightly higher success rate with fluoroscopic guidance compared to ultrasound guidance.
- This could be attributed to easier visualization of the joint and landmarks under fluoroscopy.
- Operator technique and experience may also be a contributing factor.

- Success rate of fluoroscopy is tempered by the exposure of patients and healthcare staff to radiation.
- Ultrasound guided procedures demonstrated a comparable success rate compared to fluoroscopic guidance.
- Ultrasound benefits include non-ionizing radiation.
- Patient stratification by body habitus could reveal higher success rates in smaller patients.

# References

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