Ultrasound-guided arthrocentesis and intra-articular injection of the hip and shoulder joints in the dog

Allison Miller, DVM; Carol Jennings, MFA; Christopher Frye, DVM, DACVSMR*

College of Veterinary Medicine, Cornell University, Ithaca, NY

*Corresponding author: Dr. Frye (cwf37@cornell.edu)

Received June 18, 2024
Accepted July 23, 2024
Published online August 7, 2024
doi.org/10.2460/javma.24.06.0407
©The authors

OBJECTIVE
To provide a video tutorial on ultrasound-guided arthrocentesis and injection of the canine hip and shoulder joints.

ANIMALS
Dogs undergoing arthrocentesis or intra-articular injection for diagnostic or therapeutic purposes.

METHODS
The target joint is visualized in long axis with a 70% isopropyl alcohol medium and linear array probe with a frequency range of 2 to 14 MHz and footprint of 50 mm after clipping a window and preparing the region steriley. The needle is inserted, bevel up, in long axis with the probe angled at the appropriate trajectory to enter the joint space. The needle is advanced until the tip is visualized entering the joint. Aspiration to obtain synovial fluid can further confirm needle placement or provide diagnostic sampling prior to injection. The aspirate syringe is exchanged for that containing the therapeutic agent, and injectate can then be visualized entering and/or expanding the joint upon injection.

RESULTS
Ultrasound-guided arthrocentesis will help identify deep appendicular joints (hip and shoulder), avoid surrounding vasculature, confirm needle placement, and target joint fluid pocketing. Needle guidance into a joint can reduce iatrogenic tissue damage from inappropriate needle placement and/or by minimizing attempts.

CLINICAL RELEVANCE
For arthrocentesis, ultrasound guidance can maximize joint fluid volume acquisition for diagnostic purposes (cytology, culture, and fluid analysis) while also avoiding blood contamination. For joint injections, ultrasound will help ensure real-time intra-articular delivery of the injectate (regardless of attaining synovial fluid feedback) to maximize the therapeutic effect. For either purpose, iatrogenic tissue damage and procedure time are minimized.

Keywords: ultrasound, hip, shoulder, joint injections, dog

Acknowledgments
None reported.

Disclosures
The authors have nothing to disclose. No AI-assisted technologies were used in the generation of this video or abstract.

Funding
The authors have nothing to disclose.

References