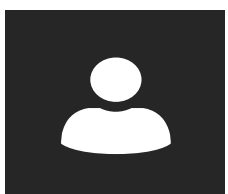


First-in-North-America and First-In-World Nerve Blocks with Novel Robotic Ultrasound Guidance Device (Focalist)

 Amanda Sparks DO (PGY3/CA2)

INTRODUCTION

- The ultrasound system combines real-time ultrasound imaging with robotic-assisted needle guidance
- Potential to enhance needle trajectory precision, target acquisition, and operator confidence during nerve block procedures
- Increase nerve block utilization, success rate, efficiency and procedure safety

METHODS

- Utilize and assess the practicality of the first four peripheral nerve blocks performed with the Focalist System (Mendaera, Inc) at the University of Minnesota
- Blocks were performed on two patients (two blocks per patient) by a single anesthesiologist, who received a single 45 minute training session on the device.
- Metrics collected included
 - Quantitative: number of attempts, success rate and procedure time (sterile probe placement to needle insertion and needle insertion to procedure completion)
 - Qualitative: ease of use and procedural confidence

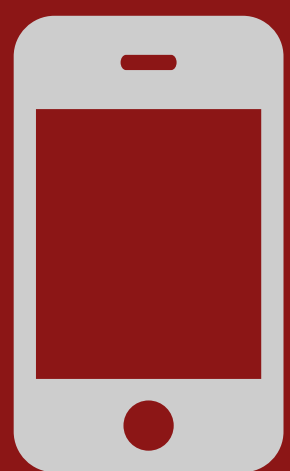
RESULTS

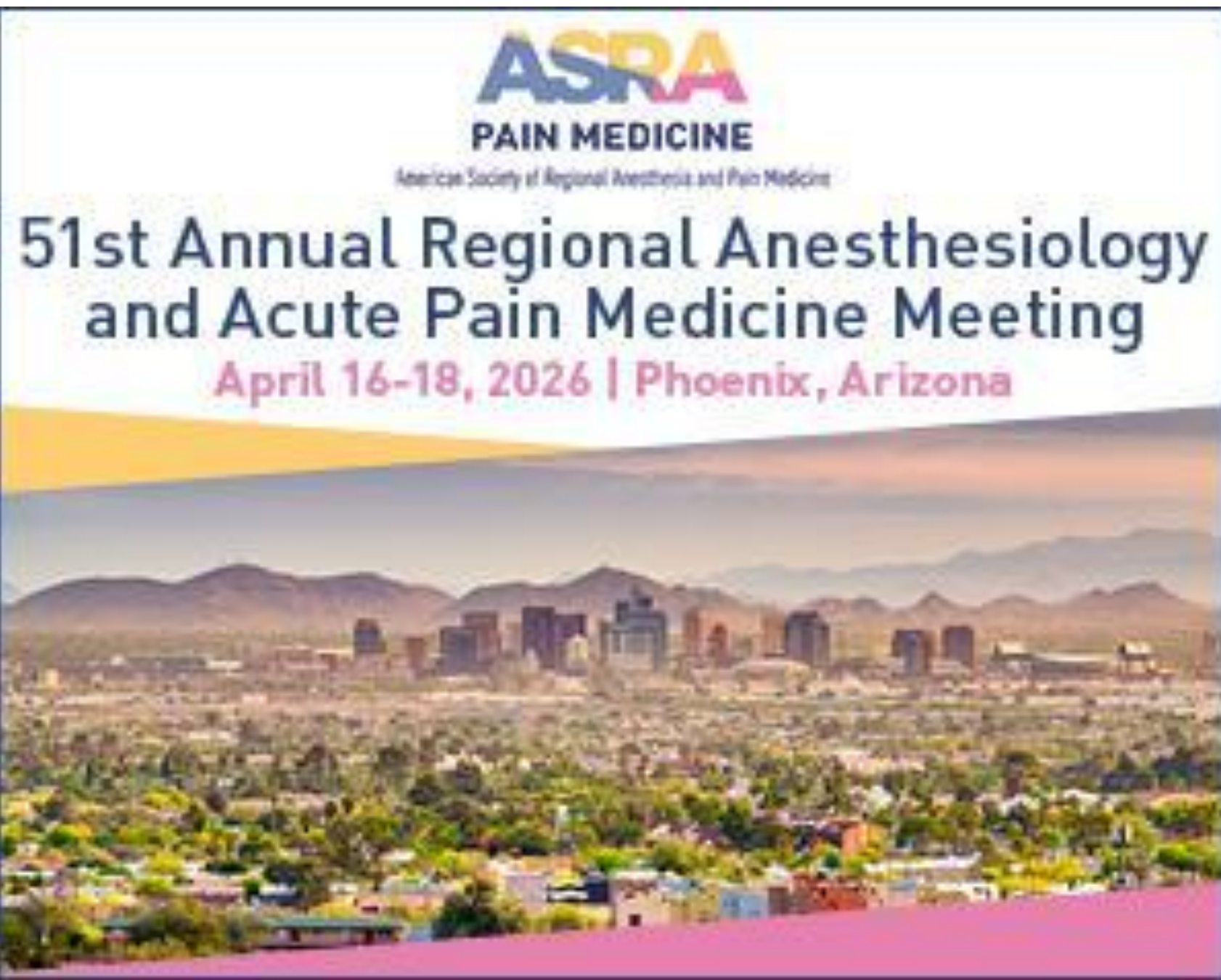
- All 4 nerve blocks, using the device, were performed successfully on first attempt
 - Patient #1: bilateral transversus abdominis plane (TAP) blocks for a robotic-assisted ovarian cystectomy
 - Patient #2: adductor canal block (ACB) and popliteal block (POP) for Achilles repair surgery
- Mean time of initial ultrasound probe scanning to initial needle insertion: 2.0 minutes (SD 1.4)
- Mean time of initial needle insertion to block completion: 1.75 minutes (SD 0.5).
- Operator reported high scores for ease of use and confidence in needle placement.

“First Four Nerve Blocks” utilizing the Focalist System (Mendaera, Inc.)					
Block #	1	2	3	4	Summary (Average unless otherwise stated)
Procedure	TAP (Side 1)	TAP (Side 2)	Adductor Canal	Popliteal	—
Patient	1	1	2	2	2 (count)
Success (Y/N)	Y	Y	Y	Y	100%
First-Attempt Success	Y	Y	Y	Y	100%
# of Attempts	1	1	1	1	1
Time from Probe On to Needle In [min]	4	1	2	1	2 (SD 1.4)
Time from Needle In to Block Done [min]	2	2	1	2	1.75 (SD 0.5)
Total Time [min]	6	3	3	3	3.75 (SD 1.5)
Ease of Use 1: Not at all easy to use 5: Very easy to use	—	4	—	5	4.5
Confidence in Needle Placement 1: Not at all confident 5: Very confident	—	5	—	5	5

Successful first-in-North America and first-in-world nerve blocks using the robotic ultrasound needle guidance system demonstrate its potential for widespread use in regional anesthesia.

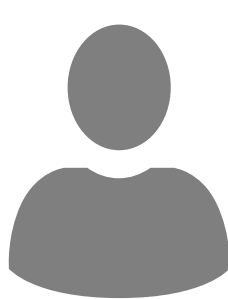


 Take a picture to download more information



CONCLUSION

- The robotic-assisted ultrasound guidance system demonstrated good practicality and safety on initial series of nerve blocks
- Needle and anatomic targets were easily visualized with the system’s guidance features such as planar alignment and depth measurement, increasing operator confidence with needle placement.
- First-In-North-America TAP blocks with Focalist successfully performed
- First-In-World ACB and POP blocks with Focalist successfully performed
- Opportunity for increased use and study across various nerve blocks, patient populations, and operator experience level

 Jacob Hutchins MD
Aaron Berg DO



UNIVERSITY OF MINNESOTA