Chronic orchialgia continues to be a challenge for urologists to treat. Microsurgical spermatic cord denervation (MSCD) has shown to significantly decrease pain with few side effects for correctly selected patients. Accurate microsurgical technique and avoidance of arterial injury is critical, particularly useful for novice surgeons and in cases with aberrant anatomy.

INDOCYANINE GREEN ANGIOGRAPHY FOR USE IN ROBOTIC SPERMATIC CORD DENERVATION

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INTRODUCTION

OBJECTIVES

METHODS

RESULTS

CONCLUSION

• Chronic orchialgia continues to be a challenge for urologists to treat.
• Microsurgical spermatic cord denervation (MSCD) shown to significantly decrease pain with few side effects for correctly selected patient.
• Accurate microsurgical technique and avoidance of arterial injury is critical.
• Particularly useful for novice surgeons and in cases with aberrant anatomy.

• We describe the novel use of indocyanine green (ICG) angiography in correlation with Doppler during robotic MSCD for the purpose of arterial localization and verification of preservation.

• Ten patients with chronic orchialgia
• Performed by a single surgeon
• All patients failed conservative management, other treatable causes of orchialgia ruled out
• Patients underwent a successful spermatic cord block in clinic prior to surgery
• DaVinci XI Surgical Robot docked in space - 4 arm approach

• Surgical method:
  1. Division of the cremasteric muscle
  2. Isolation of the vas deferens
  3. Division of central adipose tissue
  4. Injection of ICG \rightarrow artery localization
  5. Division of Vas/perivasal nerve fibers
  6. Final confirmation of patency with ICG

• ICG administered twice, well tolerated in all patients
• In all instances, the testicular artery illuminated green in Firefly mode within minutes of administration (Figure 1)
• This was then confirmed with use of a Doppler probe, which produced strong arterial signals
• The remainder of the dissection was carried out with care to avoid the artery
• Final confirmation of arterial patency with second ICG administration (Figure 2)

• The use of ICG angiography intra-operatively for robotic spermatic cord denervations appears to be a reasonable approach that aids in the identification and preservation of the testicular artery.

Figure 1: Testicular artery illumination after initial administration of ICG
Figure 2: ICG administered after denervation to confirm arterial patency