Robotic Inferior Vena Caval Surgery

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Methods
• Between 2011-today, 15 robotic vena caval procedures were performed at Mayo Clinic – Arizona
• Ten were performed for IVC renal tumor extension combined with radical nephrectomy and retroperitoneal node dissection
• Four were performed for complications of inferior vena cava filters
• One was performed for a renal vein nutcracker syndrome

Patients with Renal Cell Tumors (n=10)
• Nine of 10 patients had right-sided renal cell carcinoma
• All T3b lesions
• Tumor length and IVC mean = 5cm (range 1-8cm)

Patients with IVC Filter Removal (n=4)
• Time from placement of IVC filter to robotic removal was three years
• Minimal of 2 attempts at endovenous removal were performed prior to robotic removal

Renal Nutcracker syndrome
• In an effort to perform the transposition of the left renal vein in a less invasive fashion, we used the robotic approach
Results

- All patients did well from surgery
- All patients ambulated on post-op day 1
- Regular diet was resumed on 14 of 15 patients by post-op day 2
- One patient had a colon injury during the radical nephrectomy, which was repaired robotically
- Mean length of stay for the total group was 3.4 days

Conclusion

- This limited experience with da Vinci robotic inferior vena caval surgery demonstrates that this is a promising minimally invasive technique for inferior vena caval surgery
Vena Caval Surgery
- Open vena caval surgery is rare
- Open vena caval surgery is performed mostly for renal cell tumors extending into the inferior vena cava (IVC)
- Rarely open vena caval surgery is required to move IVC filters that have failed endovascular removal and have complications

In an effort to evaluate the efficacy of Da Vinci robotic vena caval surgery, we undertook this study.
- IRB approval was obtained

Average Operative Time
...includes robotic docking

Total Operative Time

Operative Blood Loss

Average Intraoperative Blood Loss (mL)