Objectives: Open inferior vena cava (IVC) reconstruction is performed in select patients with renal cell carcinoma, retroperitoneal tumors and caval traumatic injury. This study summarizes the indications and outcomes of open IVC reconstruction at a single institution.

Methods: This is a retrospective review of all patients who underwent open IVC reconstruction between 2010 and 2017 at our institution with complete IVC replacement, patch reconstruction or primary repair. Hospital records and patient’s follow-up visits were reviewed and analyzed. Outcomes measured included perioperative mortality, perioperative IVC related morbidity, length of hospital stay, types of reconstruction, and IVC patency.

Results: Eleven patients underwent open IVC reconstruction between 2010 and 2017. Six (54.5%) were male. The mean age was 57 years (range, 22-78). Six patients (54.5%) had renal cell carcinoma associated with inferior vena cava thrombus, 1 patient (9%) presented with retroperitoneal leiomyosarcoma, 1 patient (9%) sustained an iatrogenic injury of the IVC during right adrenalectomy and 1 patient (9%) sustained an IVC blunt injury after motor vehicle accident. Additionally, two patients (18%) required open retrieval of a previously placed IVC filter due to perforation. Ten patients underwent primary repair of the IVC, and 1 patient (leiomyosarcoma) required inferior vena cava reconstruction with interposition graft. One patient required veno-venous cardiopulmonary bypass during the thrombectomy. Median intensive care unit stay and hospital stay was 3 (range, 1.5-14), and 9 days (range 2-30), respectively. Two perioperative mortalities were recorded (18%). Two patients (18%) had IVC related morbidity and developed IVC thrombosis during the follow up period. The median followup for the remaining 9 patients was 6 months (range, 1-87 months) with one recorded mortality at 55 months (9%).

Conclusion: Primary IVC repair is feasible and associated with acceptable short and mid-term outcomes. Close follow-up is needed to evaluate the IVC patency postoperatively.