# Management of Ureteral and Lower Urinary Tract Fistulas with Interventional Radiology in the ER Patient

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## OBJECTIVES

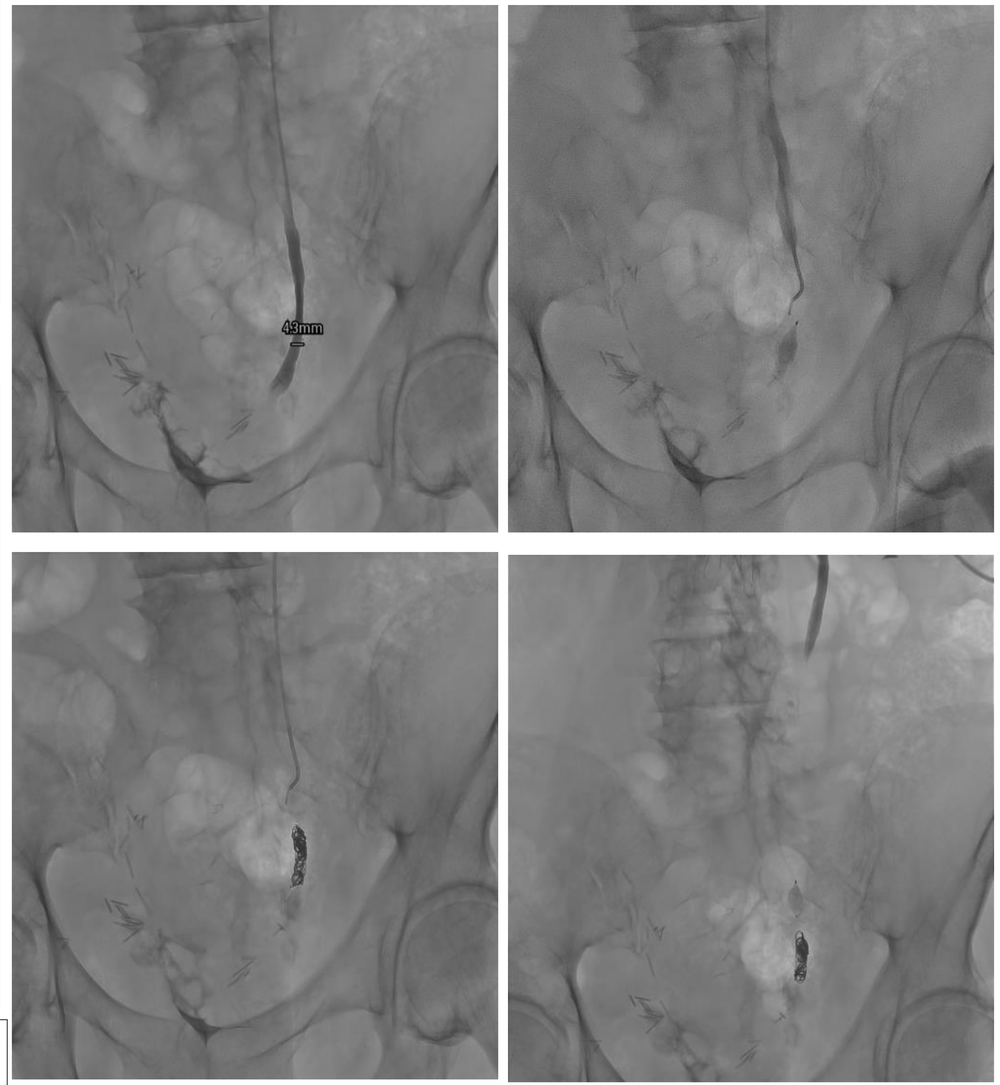
-Provide an overview of the role of interventional radiology in the management of ureteral and lower urinary tract fistulas in ER patients.
-Understand causes of ureteral and lower urinary tract fistulas
-Discuss current management options

## BACKGROUND

Ureteral and lower urinary tract fistulas are rare but potentially serious complications leading to abnormal communications between the urinary system and adjacent organs. They most often occur from surgery, trauma, or radiotherapy. These patients clinically present in a variety of ways, from mild urinary symptoms to sepsis and renal failure. Traditional treatment options include conservative management, open surgical repair, and endoscopic techniques. However, interventional radiology offers a less invasive and more effective option for managing these fistulas.

| IR technique | Indications | Advantages | Disadvantages |
|---|---|---|---|
| Percutaneous Nephrostomy | Ureteral obstruction, leakage, fistula | Rapid drainage of urine, temporary solution | Infection risk, potential dislodgement of blockage |
| Ureteral Stenting | Ureteral strictures, obstruction, leakage | Maintains urine flow, divert urine away from injury site | Stent migration or encrustation risk, periodic replacement |
| Embolization | Hemorrhagic complications, vascular fistulas | Effective hemostasis, minimally invasive | Ischemia risk to surrounding tissues, embolic material migration risk |

## RESULTS




Above is a case of a 73-year-old female with history of ovarian cancer complicated by multiple rectovaginal and vesicovaginal fistulas following chemoradiotherapy. Patient had an existing nephrostomy tube but persistent leakage of urine into the pelvis. Right nephrostogram was performed which showed additional bladder contrast within the pelvis. This led to subsequent embolization of the distal ureter with 7-9 mm MVP plug, coil embolization using 6, 7, and 9 mm coils, and then another 7-9 mm MVP plug. Post embolization contrast study showed no contrast opacification past the embolic material in the distal ureter.

## RESULTS CONTINUED

Interventional radiology techniques for managing ureteral and lower urinary tract fistulas include nephrostomy, ureteral stenting, and embolization. In patients with high-output fistulas, a nephrostomy tube may be placed to divert urine away from the affected area. Ureteral stenting is a minimally invasive technique that can be used to treat fistulas that occur after ureteral injury during surgery or trauma. Embolization can also be considered for the management of certain types of fistulas, particularly those that occur after pelvic trauma or radiation therapy.

## CONCLUSIONS

Interventional radiology plays a vital role in the management of ureteral and lower urinary tract fistulas in ER patients. Nephrostomy, ureteral stenting, and embolization are effective and minimally invasive options for treating these complex cases. The choice of technique will depend on the location and severity of the fistula, as well as the patient's clinical status. By utilizing these interventional techniques, the patient can avoid the potential complication of open surgery and achieve a faster recovery time.

## REFERENCES

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