

Surgical Management of Ureteropelvic Junction Obstruction in Adults

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DESCRIPTION

Ureter pelvic junction obstruction in adults is a condition where urine flow from the renal pelvis into the ureter is impaired, leading to progressive dilation of the kidney collecting system. While it is often detected in childhood, some cases remain asymptomatic until adulthood, where they may present with flank pain, recurrent infections, hematuria, or incidental findings on imaging studies. Chronic obstruction can gradually impair renal function if not addressed appropriately.

The condition may be congenital or acquired. Congenital cases are typically related to intrinsic narrowing at the junction or abnormal muscular development, while acquired forms may result from previous surgery, kidney stones, inflammation, or external compression from aberrant blood vessels. Crossing vessels are a common anatomical contributor in adult presentations and can compress the ureter at the junction, worsening obstruction during periods of increased urine flow.

Diagnosis relies heavily on imaging studies. Ultrasound is often the initial modality, revealing hydronephrosis. Computed tomography urography provides detailed anatomical information, including the presence of crossing vessels and degree of obstruction. Diuretic renography is useful in assessing functional impairment and differentiating obstructive from non-obstructive dilation.

Minimally invasive approaches have become widely adopted, including laparoscopic and robot-assisted pyeloplasty. These methods provide similar success rates to open surgery while reducing postoperative pain and hospital stay. Robotic assistance offers improved dexterity, particularly useful in intracorporeal suturing and reconstruction of the urinary tract.

For patients with complex anatomy or previous failed repairs, alternative techniques such as endopyelotomy may be considered. This procedure involves incising the obstructed segment internally using endoscopic tools, followed by stent placement to maintain patency during healing. However, success rates are generally lower compared to formal reconstruction, particularly in cases with significant scarring or external compression.

Postoperative care includes temporary stenting to support healing and ensure unobstructed urine flow. Imaging follow-up is performed several weeks after surgery to confirm resolution of hydronephrosis. Renal function is also monitored over time to assess recovery or stabilization.

Complications of surgical repair may include urine leakage, stricture recurrence, infection, or bleeding. Most complications are uncommon when the procedure is performed with proper technique and patient selection. Long-term success rates of pyeloplasty are high, with durable improvement in symptoms and renal drainage.

Pain relief is one of the most significant benefits of surgery in symptomatic patients. Many individuals experience complete resolution of flank discomfort after successful reconstruction. Preservation of renal function is another key outcome, particularly in younger patients or those with partial functional loss at presentation.

Technological improvements in imaging and surgical instruments have enhanced precision in treating this condition. Three-dimensional reconstruction imaging assists in preoperative planning, while refined suturing instruments improve reconstruction quality during minimally invasive procedures.

CONCLUSION

Ureter pelvic junction obstruction in adults is effectively managed through surgical reconstruction tailored to individual anatomical and functional findings. Experience plays a major role in reducing complications and improving success rates. Training in reconstructive urological surgery is essential for achieving consistent outcomes. Surgeons must be skilled in both open and minimally invasive techniques to manage different anatomical variations and intraoperative challenges. Modern minimally invasive techniques have improved recovery while maintaining excellent long-term outcomes, making pyeloplasty the preferred treatment in most symptomatic cases.

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