Introduction: Endoluminal ultrasound (EUS) catheters have been available for several years and are widely applied in interventional vascular procedures. They can also be used in the ureter to define intrinsic and peri-ureteral structures. This study reviews our experience with EUS in the ureter.

Methods and Materials: EUS catheters are 6 to 8F in outer dimension and contain a rotating ultrasound transducer of 12.5 – 20 megahertz. They provide a cross-sectional image of up to 2-3 cm in diameter. The catheter probe can be placed over a wire passed into the ureter and followed fluoroscopically. We have employed these catheters on a clinical basis in patients undergoing endoscopic procedures for ureteral/peri-ureteral lesions. We have reviewed the log of these patients collected from 1989-2010.

Results: EUS was reviewed for 645 patients over 20 years. The most common indication was ureteropelvic junction obstruction (UPJO) (48.2%) and the second most common was ureteral stricture (21.5%). Tumor (16.0%) and hidden ureteral calculi (9.1%) comprised most of the remainder. EUS was used for intra-renal lesions (1.9%) and other (3.3%) in a minority of cases. The use for UPJO has decreased markedly with changes in treatment preferences (23 in 1998 vs. 3 in 2009). We expect an increased use for tumors again with the advent of neoadjuvant therapy.

Conclusion: Endoluminal ultrasound is a valuable technique which provides considerable information regarding ureteral anatomy. Despite its clinical utility, EUS is underutilized because of the expense and availability of the instruments.