

TRANSCYSTOSCOPIC URETERAL DILATATION AND URETEROSCOPY

ANDREW L. SIEGEL, M.D.
STEPHEN ZDERIC, M.D.
KEITH VAN ARSDALEN, M.D.

From the Department of Urology, Hospital of the University
of Pennsylvania, Philadelphia, Pennsylvania

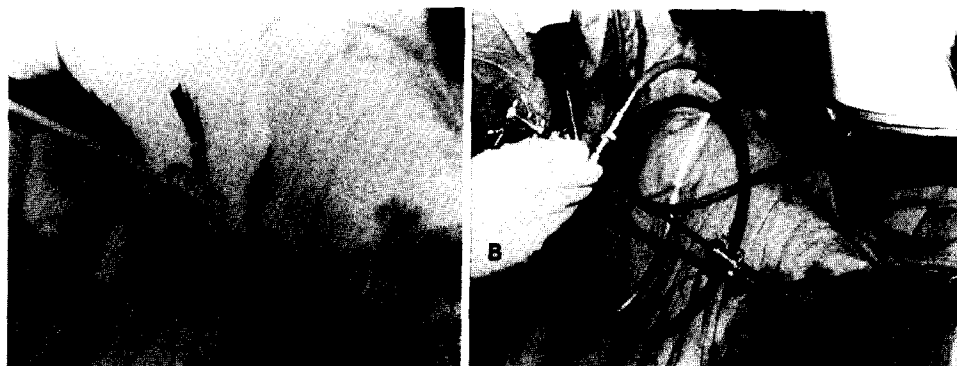
With the ureterorenoscope it is now possible to perform procedures under direct vision that previously had to be undertaken blindly or with the aid of fluoroscopy. The most common use of the ureterorenoscope is for removal of ureteral calculi, particularly those that are in the distal or middle one third of the ureter.

The technique of ureteral dilatation and ureteroscopy of the lower ureter via the cystoscope sheath is particularly useful when repeated passes of the ureteroscope are necessary. This method is extremely helpful in clearing the multiple fragments that comprise a ureteral "steinstrasse" following extracorporeal shock-wave lithotripsy, but it is also useful for managing single stones. The technique is suitable for males only and certain limitations exist, but when applicable, the cystoscope sheath provides rapid, repeated access to the ureteral orifice and protection for the urethra.

Our technique involves initial cystourethroscopy with a 21-F panendoscope. After completely inspecting the urethra and bladder, the appropriate ureteral orifice is cannulated with

a 0.038-inch torque wire which is advanced beyond the calculus into the renal pelvis under fluoroscopic control. With the ureteral orifice and guide wire in view, the position of the cystoscope sheath is noted on the fluoroscopic monitor for future reference, and the cystoscope sheath is stabilized, providing a "straight shot" from the urethral meatus to the ureteral orifice. The cystoscope and bridge are then removed from the sheath, leaving the guide wire protruding. The ureteral orifice is then dilated in a coaxial fashion with sequentially larger semirigid dilators or with a balloon dilator. It is our practice to dilate the orifice and the ureter to the level of the calculus. The 21-F panendoscope readily admits a 14-F dilator (Fig. 1A). These dilators as well as the balloon dilators are passed more easily through the straight cystoscope sheath than through the curvaceous urethra where some loss of force occurs at each bend. After dilatation is completed, the 11.5-F ureterorenoscope is passed through the cystoscope sheath adjacent to the guide wire which is left in place as a safety wire (Fig. 1B). Care

FIGURE 1. (A) 21-F panendoscope with insertion of 14-F dilator. (B) 11.5-F ureterorenoscope passed through cystoscope sheath adjacent to guide wire which is left in place.



must be taken initially to keep the tip of the cystoscope sheath at or just beyond the bladder neck to prevent obscuring the ureteral orifice. The ureterorenoscope may then be passed into the ureteral orifice with the cystoscope sheath traversing the urethra. All manipulations then can be performed with the ability to remove the ureterorenoscope from the bladder and easily reinsert it without having to negotiate the urethra each time.

The limitations of this technique relate to the length of the ureteroscope compared with the length of the cystoscope sheath. With the ureteroscope passed all the way through the cystoscope sheath, 16.5 cm of the ureteroscope protrudes from the tip of the sheath, thereby limiting to this distance the length of the ureter which can be inspected when the tip of the sheath is at the level of the ureteral orifice. Inspection of the distal one half of the ureter is accomplished easily with this technique. How-

ever, the limitations imposed by the length of the sheath and the inability to accoridian the penis precludes the use of this technique for the proximal half of the ureter.

A simple method that obviates the need for multiple transurethral passages of the dilators and ureteroscope is proposed. The advantages of leaving the cystoscope sheath in place include ease of passage of the dilators, ease and rapid passage of the ureteroscope, and protection of the urethra from repeated passage of these instruments. The length of the cystoscope sheath limits the distance which the ureteroscope can be passed into the ureter, but this is not a factor in treating calculi within the distal one third of the ureter, a most common problem.

5-Silverstein
3400 Spruce Street
Philadelphia, Pennsylvania 19104
(DR. SIEGEL)