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Ureteroscopy using a detachable access sheath.

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Abstract

Ureteroscopy has evolved in many aspects, particularly in the flexibility and size of ureteroscopes. We have developed a new detachable access sheath to make ureteroscopic procedures more straight-forward and to reduce possible damage to delicate instruments used in the procedure.

KEYWORDS: ureteroscopy, detachable access sheath

Short Communication

Ureteroscopy Using a Detachable Access Sheath

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Ureteroscopy has evolved in many aspects, particularly in the flexibility and size of ureteroscopes. We have developed a new detachable access sheath to make ureteroscopic procedures more straightforward and to reduce possible damage to delicate instruments used in the procedure.

Key words: ureteroscopy, detachable access sheath

The field of ureteroscopy has expanded greatly during the last 2 decades, in step with the increasing miniaturization of instruments, the advancement of optical and manipulation designs, and improvements in auxiliary devices [1-3]. Now ureteroscopy is a standard approach that is usually performed as a diagnostic and therapeutic procedure. We recently designed and developed a new detachable access sheath (Ureteroscopy introducer, TU-951B, Takei Medical & Optical Co., Ltd., Tokyo, Japan) to make ureteroscopic procedures more straightforward and to reduce possible damage to delicate instruments used in the procedure. The detachable access sheath, with an outer size of 21F, is composed of outer and inner drainspout-like metallic tubes and a plastic plug; these components are assembled by the use of a specially designed locking system (Fig. 1). The sheath is extremely helpful in inserting a flexible ureteroscope into the ureteral orifice and advancing it within the ureter against modest resistance that, without this detachable sheath is more likely to buckle the scope in the bladder.

In general, standard cystoscopy is performed with the



Fig. 1 A detachable access sheath.

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patient in the dorsal lithotomy position. Then, the ureteral orifice of the affected side is identified by a flexible ureteroscope mounted inside the detachable access sheath (Fig. 2). The scope is inserted into the lower ureter with the aid of a guide wire. After this step, the access sheath can be removed easily, while the scope maintains its position. Although Kim and Gerber reported that a cystoscope sheath can be used to prevent the scope from buckling and to decrease the friction against it [4], continued use of that sheath is not only cumbersome but also dangerous, in that damage possibly occurring in the delicate ureteroscopy could, in turn, damage the ureter. On the other hand, anatomically or pathologically narrow points of the ureter, as well as the normal but small caliber of the ureter, sometimes make it difficult to advance the scope. In that situation, the detachable access sheath can be re-assembled and mounted on the ureteroscope to obtain clear transmission by avoiding buckling of the scope within the bladder (Figs. 3 and 4).

For these reasons, we believe the detachable access

sheath is useful for beginners as well as trained urologists in uteroscopy with a flexible scope.

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Fig. 2 Insertion of a flexible ureteroscope mounted inside the access sheath.



Fig. 3 Fluoroscopy shows buckling of the ureteroscope within the bladder.

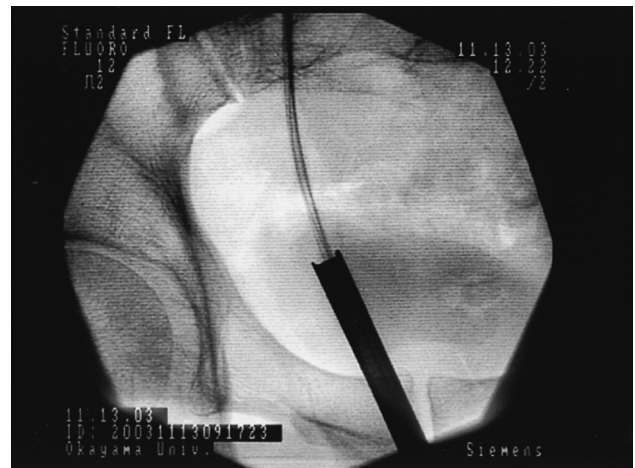


Fig. 4 Access sheath is re-assembled and positioned close to the ureteral orifice.