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Pressure Based Mechanical Feedback to Safely Insert Catheters

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BRIEF DESCRIPTION

A pressure sensing device that provides feedback during the insertion of a ureteral access sheath to prevent unwanted damage to the wall of the ureter.

FULL DESCRIPTION

The placement of a ureteral access sheath in the ureter causes less surgical complications during the removal of kidney stones. Unfortunately, there is a risk of damaging the wall of the ureter when inserting a sheath for such a procedure. If the wall of the ureter is damaged, the patient would need to have further surgical procedures conducted to fix the damaged inner lining of the ureter. There is currently no measurable means to assess how much force is generated when inserting the ureteral access sheath to prevent unwanted damage. With such a developed tool Urologists would be able reduce kidney stone surgical complications.

Researchers at the University of California, Irvine, have developed a new pressure feedback mechanism that will aid in the proper placement of a ureteral access sheath. The invention consists of a feedback mechanism when delivering the access sheath. As the sheath is introduced into the ureter, a surgeon will be alerted of the amount of pressure used to insert the sheath to guide in the decision to continue the insertion, reposition the sheath, or start over when necessary to avoid damage. The pressure sensor can be used with any catheter.

SUGGESTED USES

- » Preventing the rupture of the urothelial layer of the ureter during placement of a ureteral access sheath.
- » Preventing unwanted damage to the lining of blood vessels during intravascular catheter based procedures

ADVANTAGES

· Reduce the surgical complications associated with kidney stone removal as well as other ureteroscopic or catheter based surgeries

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Published Application	20190076209	03/14/2019	2017-893

STATE OF DEVELOPMENT

Clinical ureteral sheath placement pressure data is being collected to better understand the correlation of resultant ureteral injury to observed pressure.

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