

"PUMPING PROBE TECHNIQUE" AND COMPLETE SEALING STENT – A NEW SIMPLE METHOD FOR THE DETECTION AND TREATMENT OF URETERIC FISTULAE

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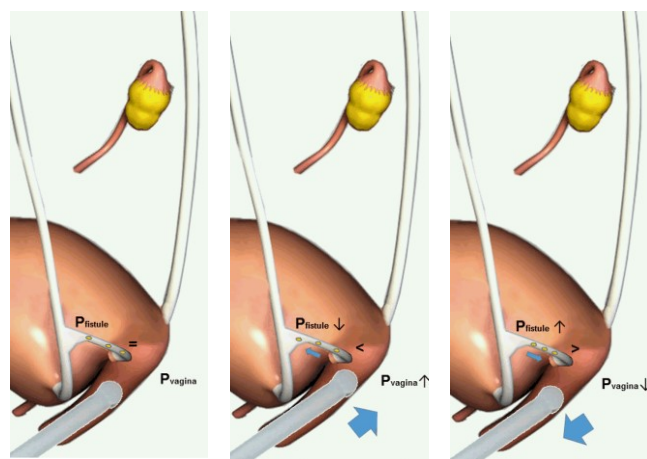
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Abstract

Ureteric fistulae after gynecological surgery are a well known postoperative (PO) complication. In the past, fistula detection was performed by X-Ray, CT or MRI. The aim of this study is to show that ultrasound using the novel "Pumping Probe Technique" (PPT) is an alternative method for detecting fistulae. A new intramural complete sealing ureteric stent prevents leakage, covers the tissue and allows the tissue to heal without further measures.

Methods

In 59 cases between June 2012 to February 2017 we used the new PPT in both endoluminal sonography and elastography to visualize ureteric fistulae. The technique involves the forward and backward movement of an ultrasound probe to generate pressure in the fistula, thus leading to a movement of the fluid within so that it can be detected. We found 34 ureterico-vaginal fistulae, 10 ureteric-douglas fistulae, 12 ureteric-enteric fistulae and 3 arterio-ureteric fistulae using this method. Each patient was then treated with the implantation of a self-expanding covered stent.



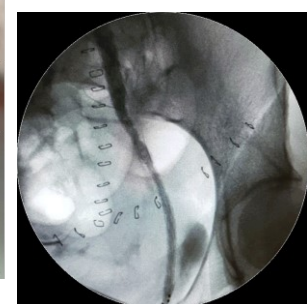
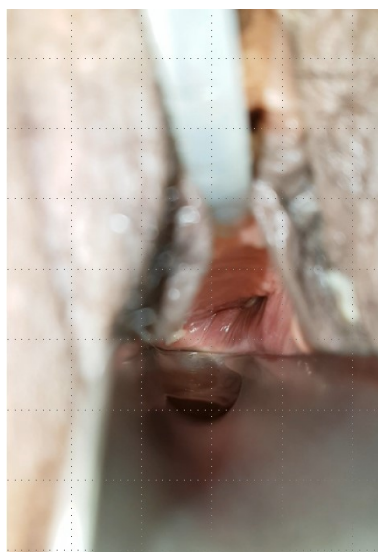
Results

A fistula was detected by elastography in only 44 of the cases, however using ultrasound 52 of 59 were visualized, both imaging modalities were performed with the PPT. X-Ray and CT were then used to confirm the diagnosis. In 54 of the 59 cases the fistula was successfully closed.

Endoluminal sonography and elastography using the novel PPT detected approximately 91% of the fistulae. MRI or X-Ray are mostly not necessary.

Conclusion

Endoluminal sonography and elastography using the novel PPT detected approximately 91% of the fistulae. The subsequent management of ureteric fistulae with stents can be performed gently, safely and quickly. The cure rate was high at 91%.



The newly developed "Pumping Probe Technique" proved useful for detecting fistulae. Movement of the ultrasound probe generated negative pressure in the sinus thus visualising the fistula.

Ultrasound follow up shows the position of polymeric stent in ureter and continuous closure of the fistula.

