



MP04-01: Cystoscopic Stent Removal Using Smartphone

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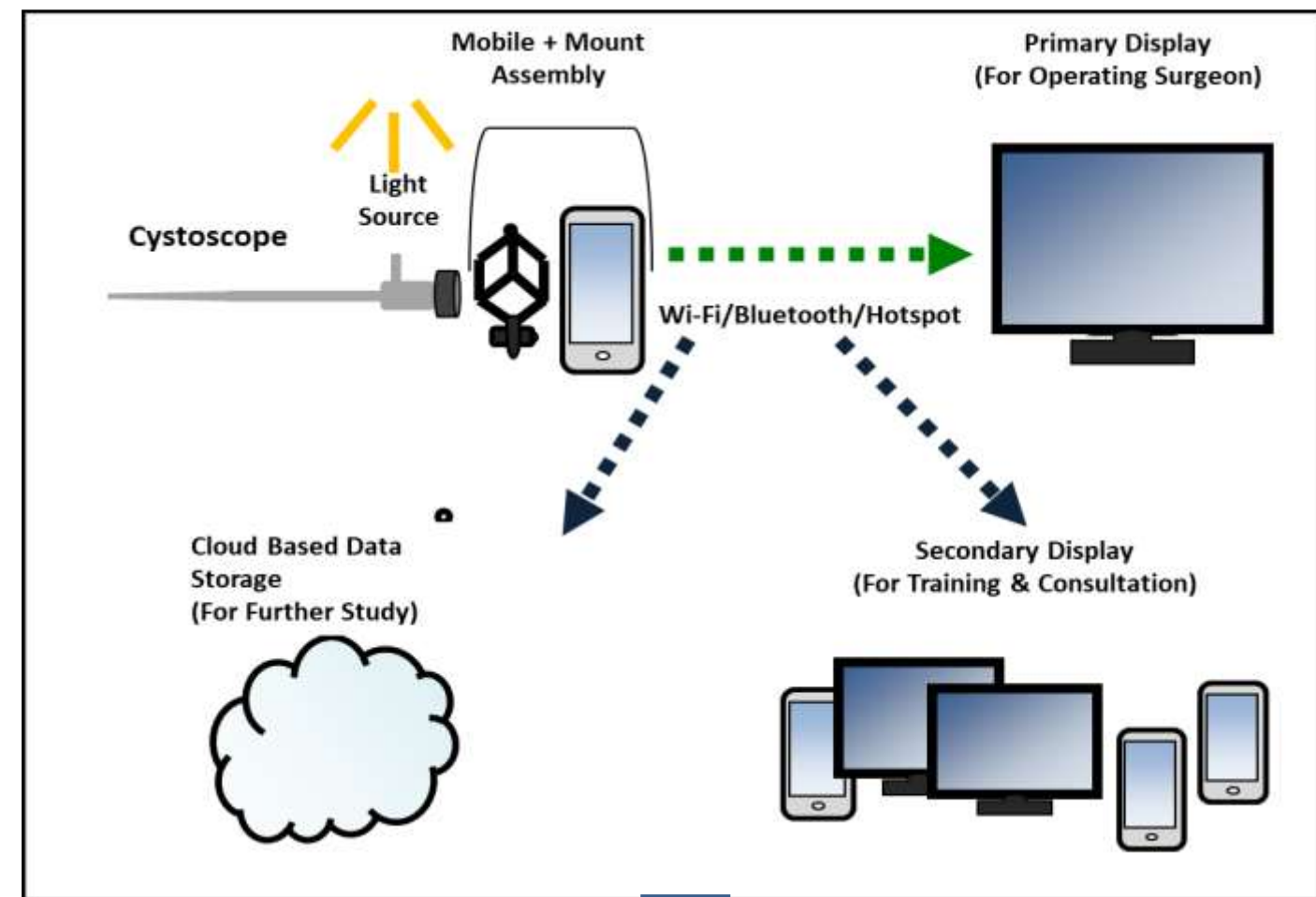
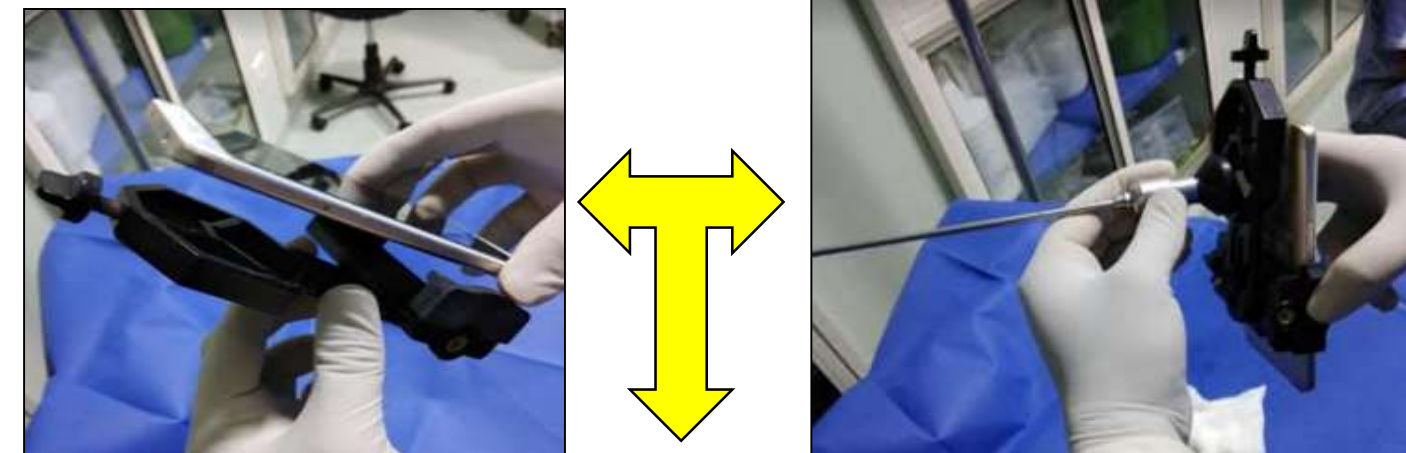
INTRODUCTION AND OBJECTIVE

Double J (DJ) stents are frequently used in urologic practice and are removed using a rigid or flexible cystoscope with a stent removal forceps or a foreign body forceps and video cystoscopy is often helpful.¹

We report here a technique for cystoscopic removal of the stent when the instruments, equipment and machines for video cystoscopy are expensive and not readily available in some hospitals. Sohn et.al., in 2013, developed "Endockscope" which connects flexible endoscope but only with Apple iPhone 4S smartphone.²

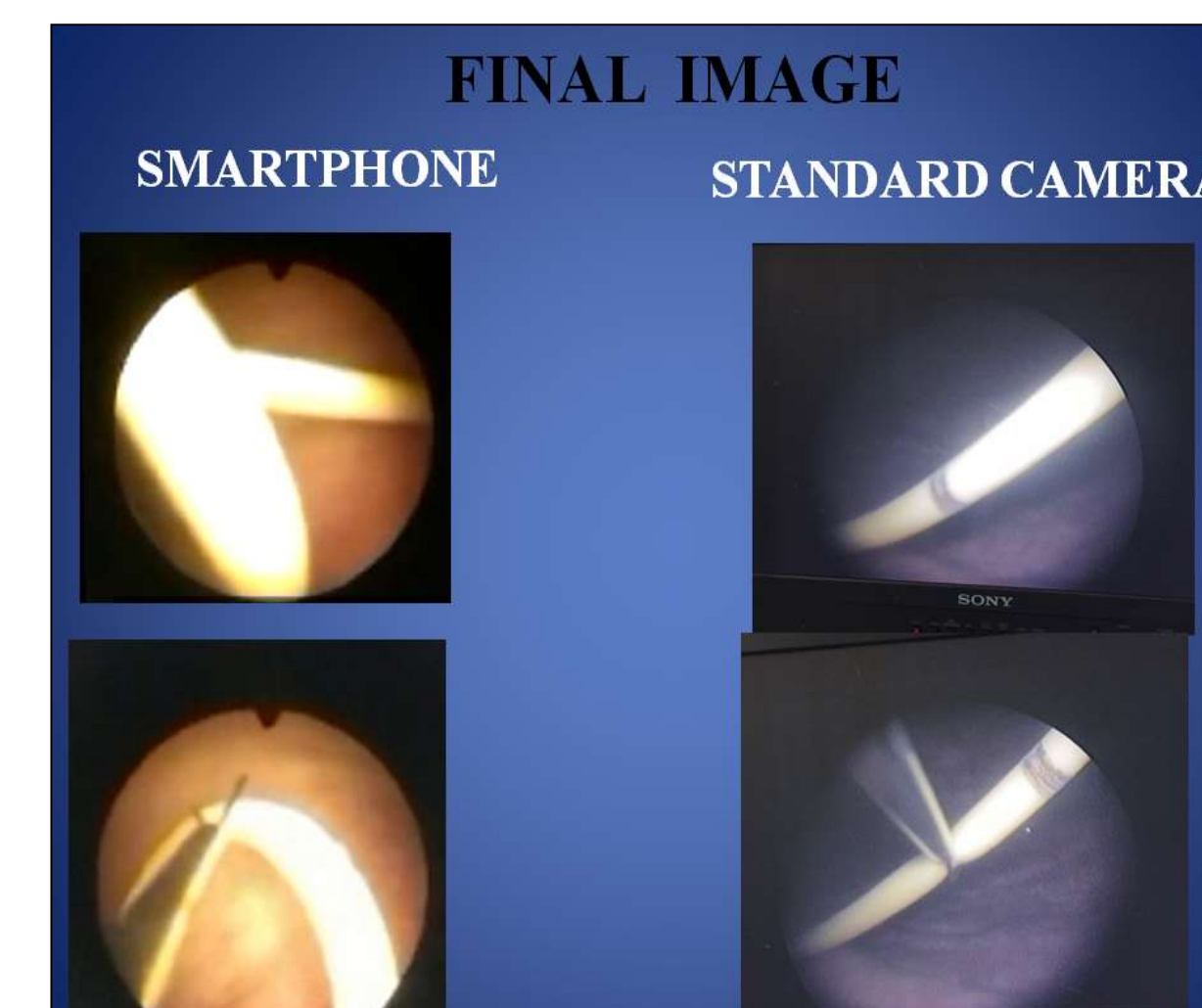
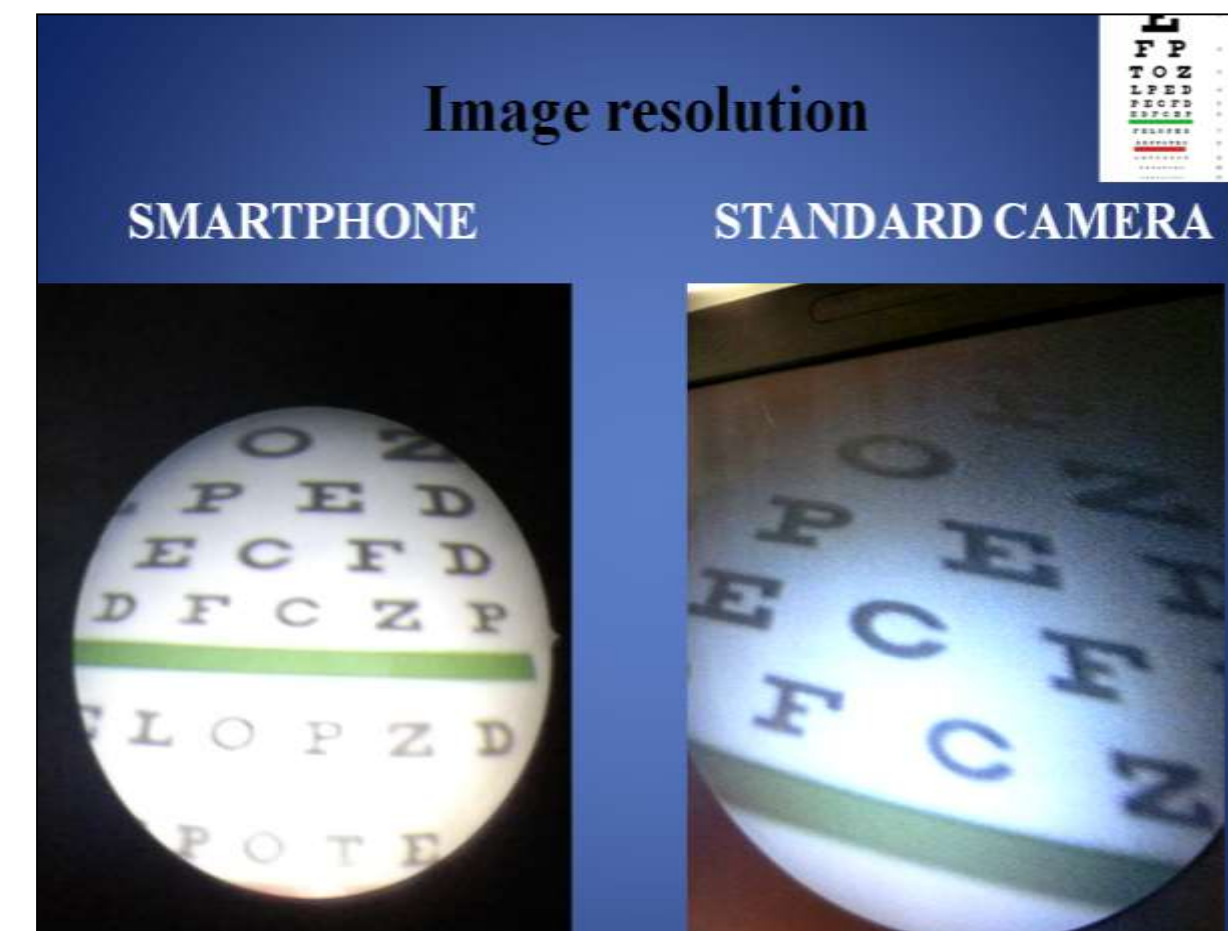
Our study aims to demonstrate how to connect any Android, Apple or Windows smartphone with any cystoscope using commercially available universal "digiscoping" adapters during video cystoscopic DJ stent removal.

CONNECTING SMARTPHONE & CYSTOSCOPE



RESULTS

SR.NO	STENT	PATIENTS
1	BILATERAL	FOUR
2	UNILATERAL	SIX

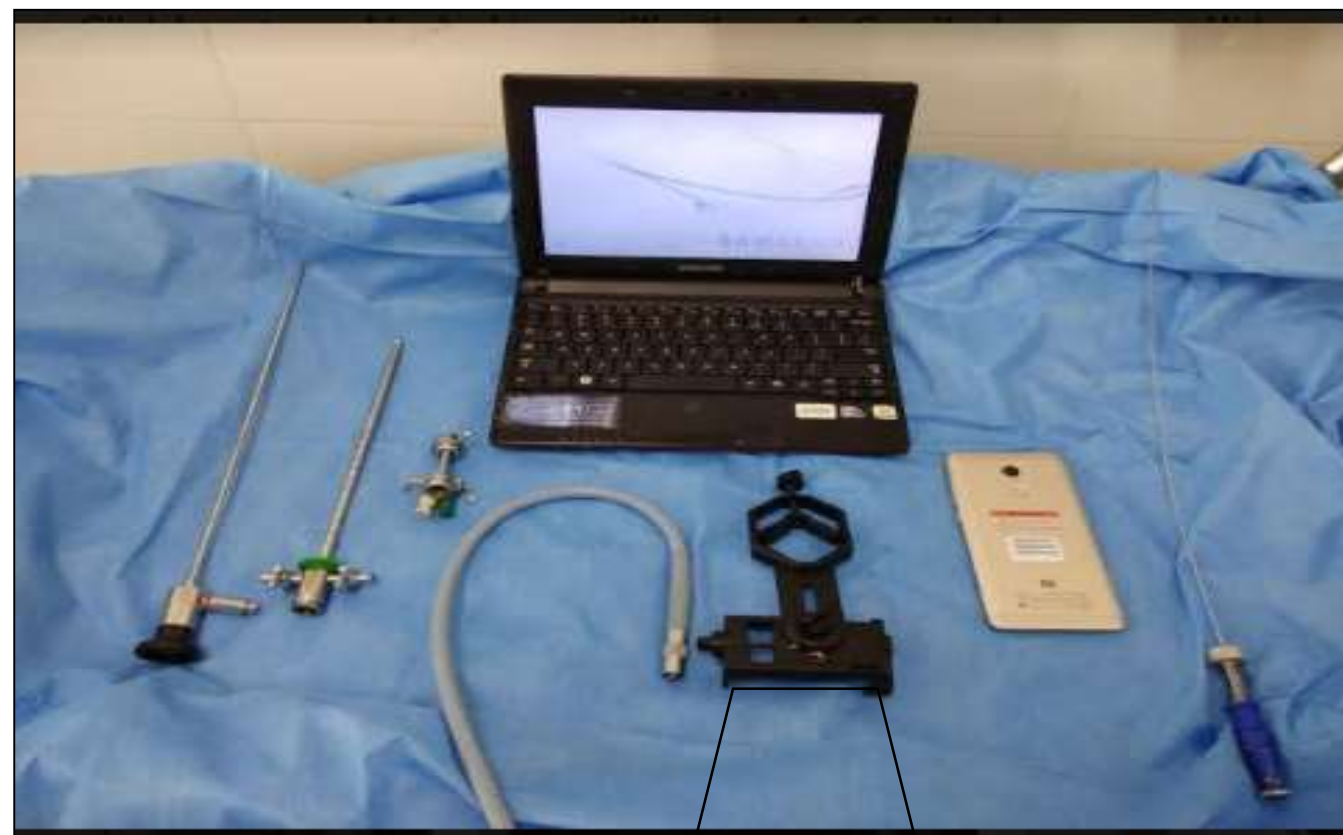


DISCUSSION

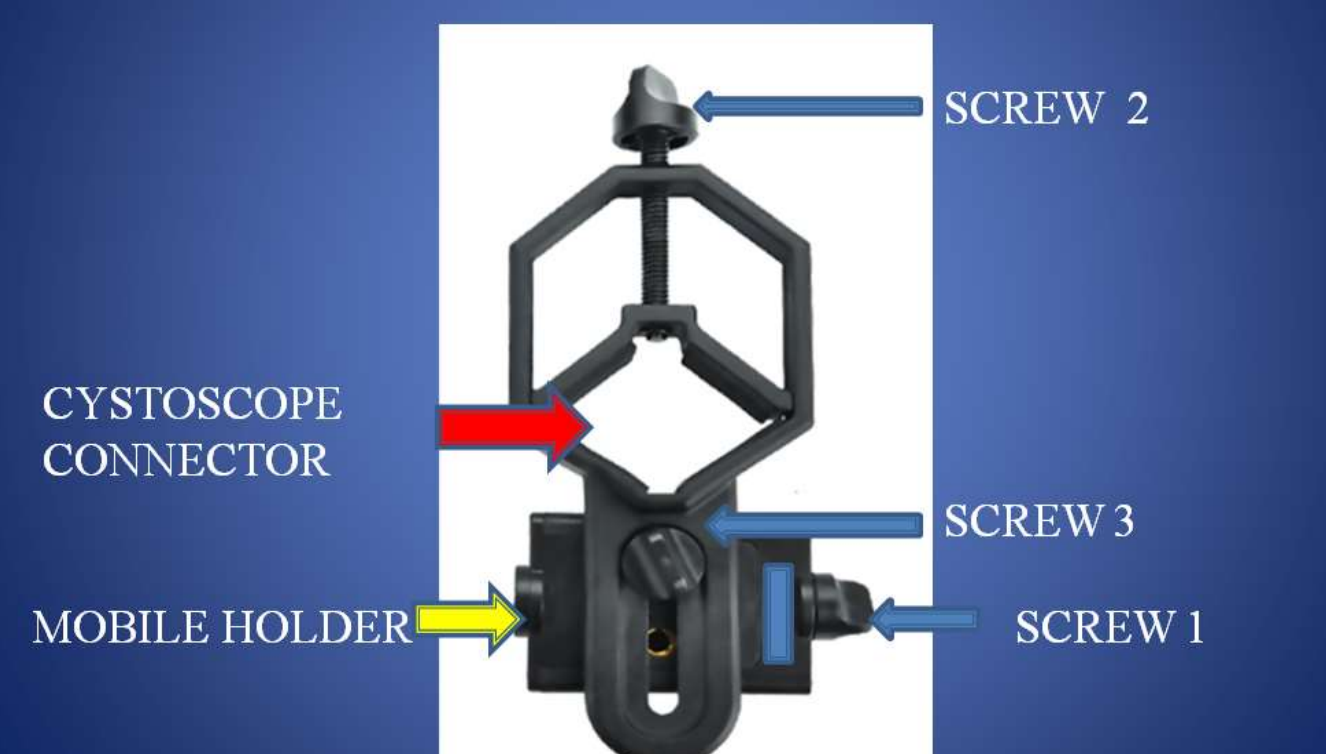
Current models of Android smartphones with high resolution cameras may be connected to cystoscopes using either a screw-in type or a clip-on type of commercially available universal "digiscoping" adapters. Both adapters should be carefully fitted with shims to attach to telescopes during video cystoscopy. Careful alignment of the camera lens of smartphone with eyepiece of telescope is necessary. DJ stent images may be viewed from screen of smartphone and simultaneously viewed by "Wireless screen mirroring" by IP webcam on laptop monitor or other mobiles. Photographs of DJ stent images may be taken from cystoscope or from monitor.

A smartphone replaces the camera and video receiver box, no separate video receiver box is needed. The smartphone alone allows image acquisition, image capture, video capture, image projection over a wireless signal to an external monitor, and transmission of endoscopic images to remote devices; the last can be done with one hand while the device is attached to the endoscope during the actual cystoscopic or ureteroscopic procedure.

MATERIAL & METHODS



SMARTPHONE ADAPTER MOUNT



CONCLUSION

Smartphone can be connected with cystoscope using commercially available universal "digiscoping" adapters during DJ stent removal. DJ stent images viewed from screen of smartphone or simultaneously in laptop monitor, as well as photographs of cystoscopic images, were acceptable during removal.

REFERENCES

- Ozturk H. Facilitate stent removal: Magnetic DJ stent. Urol Case Report .2017;11:55-6.
- William S, Shreim S, Yoon R, et.al. Endockscope: Using Mobile Technology to Create Global Point of Service Endoscopy. J Endourol. 2013 Sep;27(9):1154-60.

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