INTRODUCTION
Double J stents have an essential part of urological practice; they are typically placed to prevent ureteral obstructions.\textsuperscript{1} It is indicated in many urologic procedures like ureteral implantation, pyeloplasty, pyelolithotomy, before extracorporeal shock wave lithotripsy and other causes. Following completion of the need of JJ ureteral stent, it should be removed by cystoscope. The external diameter of flexible cystoscope has changed little in the last 20 years, but the internal engineering of inserting tube has become very sophisticated and image quality improved more than four fold.\textsuperscript{2} Removing of JJ catheter is troublesome because of the pain and discomfort, particularly in the male patient when using conventional rigid cystoscope.\textsuperscript{3} Thus, it is common practice to use general anesthesia in them consuming more time and resources.\textsuperscript{3} This study reports the use of flexible cystoscope and compares it with rigid cystoscope for retrieval of JJ catheter.

PATIENTS AND METHODS
From January 2007 to December 2008 a total of 600 patients underwent removal of JJ catheter using cystoscope at Prince Hussein Urology Center. 230 patients underwent removal JJ stent using flexible cystoscope and 370 patients underwent the removal of stents using rigid cystoscope. The procedures were done using local anesthesia in the form of lidocaine 2\% gel, but some patients needed sedation. All patients were assessed by urine analysis and culture, complete blood count, electrolytes, chest X-ray, ECG, and plain abdominal X-ray. All procedures were done as outpatient basis. 185 patients underwent removal of the stents using rigid cystoscope required sedation, while 10 patients required general anesthesia. All patients received one injection of prophylactic antibiotics and kept on oral treatment for two days post surgery. 20 Fr Karl Storz rigid cystoscope with flexible or rigid grasping forceps and 15 F Karl Storz flexible cystoscope with flexible grasping forceps were used in our procedures.

RESULTS
Out of 600 patients, 520 patients were males and 80 patients were females. Patient's age ranged from 16 to 72 (median 40 year). The stents were successfully retrieved in 219 (95\%) patients using flexible cystoscope under local anesthesia, sedation needed in 5 patients and 6 patients required changing position to lithotomy position to remove stents by using other technique. Using rigid cystoscope, JJ stents were retrieved in 226 (84\%) patients using local anesthesia, 37(14\%) patients required sedation.
and in 7(2%) patients, general anesthesia and other techniques required to remove the stents. The mean duration of procedures was 3(2-8) minutes using flexible cystoscope, however, it required 4(3-10) minutes in rigid cystoscope. Operative pain score, lower abdominal pain score, dysuria, urgency and hematuria all were less in patients underwent flexible cystoscope in male patients, however they were statistically not significant among female patients of the two groups.

**DISCUSSION**

The first flexible cystoscopy was performed in 1981 by Wilbur using flexible choledochoendoscope and now flexible cystoscope is used extensively in many centers. JJ stents have 4% serious complications and 10% minor complications. The flexible cystoscope provides a significant benefit in patients comfort with little loss of image quality or ease of use. These results suggest that almost all JJ stents retrieval can be undertaken using flexible cystoscope. Sang et al used fluoroscopy-guided transurethral removal of JJ stents which showed to be comparable with our results. Flexible cystoscope is an easy, safe and effective procedure and in comparison to rigid cystoscope it causes less pain, well tolerated and associated with less post procedure symptoms. In spite of that some patients complain of discomfort and many studies showed that lubricant jelly with and without anesthesia were used to lessen these symptoms. Most painful part of procedure has been the passage of cystoscope through the membranous urethra or its passage through the external sphincter, prostate and bladder neck regions. De Baere et al reported their experience with ureteral stent exchange with a 0.018 to 0.035 inch guide wire lasso technique. However, we removed stents using grasper forceps.

**CONCLUSION**

Flexible cystoscope is safe, easy, more comfortable and more convenient to patients in comparison to rigid cystoscope.

**REFERENCES**