



Research Article

RETAINED TUBES - A NIGHTMARE IN UROLOGY

Srinivasan T and Senthil Kumar T

Department of Urology, SRM Medical College Hospital and Research Centre, Kattankulathur,
Kancheepuram District, Tamilnadu, India

ARTICLE INFO

Article History:

Received 15th December, 2019

Received in revised form 7th

January, 2019

Accepted 13th February, 2019

Published online 28th March, 2019

Key words:

Vesicolithotripsy, Nephrectomy, ESWL.

ABSTRACT

Patients undergoing urological procedures fail to undergo tube removal at appropriate time and they present themselves after many years with Retained tubes. These Retained tubes continue to remain one of the biggest problems in the urology care at the present outset inspite of all the effects taken to prevent it. In our medical college we retrospectively reviewed our institute database from June 2013 to Dec 2018 for retained tubes like ureteral stents, urethral catheters, suprapubic catheter and nephrostomy tubes. Total of 18 patients presented with retained tubes. 11 were with retained ureteral stents, 5 were with urethral catheters, 1 with retained suprapubic catheter and 1 with nephrostomy tube. 5 retained ureteral stents patients were managed by simple ureterorenoscopy and stent removal. 3 patients required ESWL and URS with stent removal, 3 patients needed PCNL with ESWL. Retained urethral catheters were managed with cystolithotripsy and tube removal. Patient with retained suprapubic catheter was managed with open vesicolithotomy. Patient with Retained nephrostomy tube required a nephrectomy. All the patient was free of stone symptoms on follow up and two of them were chronic kidney disease on hemodialysis. We hereby conclude that retained tubes can be managed with appropriate technique. But patient education and awareness to consult at right time for tube removal is the most important factor in preventing the morbidities because of these retained tubes.

Copyright©2019 Srinivasan T and Senthil Kumar T. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

Patients undergoing urological procedures fail to undergo tube removal at appropriate time and they present themselves after many years with Retained tubes. These Retained tubes continue to remain one of the biggest problems in the urology care at the present outset inspite of all the effects taken to prevent it.

Objective: Here we want to review our experience in the management of various retained tubes such as ureteral stents, suprapubic catheter and nephrostomy tubes which are commonly used during our day to day practice.

MATERIALS AND METHODS

We retrospectively reviewed our institute database from June 2013 to Dec 2018 for patients who presented to our department with various retained tubes like ureteral stents, urethral catheters, suprapubic catheter and nephrostomy tubes. Blood investigations like CBC, sugar, urea, creatinine, urine routine, urine culture was done. Imaging was done and all the tubes were removed surgically.

***Corresponding author: Srinivasan T**

Department of Urology, SRM Medical College Hospital and Research Centre, Kattankulathur, Kancheepuram District, Tamilnadu, India

RESULTS

Total of 18 patients presented with retained tubes. 11 were with retained ureteral stents, 5 were with urethral catheters, 1

with retained suprapubic catheter and 1 with nephrostomy tube. Retained ureteral stents- (table- 1) 6 patients were managed by simple ureterorenoscopy and stent removal. 5 patients had encrustations with stone formation in upper and lower end of stent (fig-1). 3 had soft renal encrustations and were given 1500 shocks with ESWL followed by URS and stent removal. 3 patients had hard renal stones and required PCNL with ESWL. They were restented and stent removed after 4 weeks.

Retained urethral catheters –(table-2) 3 cases had shell calculi and needed USG guided balloon puncture with cystoscopy to remove shell calculi. 2 patients had 2cm bladder stones and were managed with cystolithotripsy and catheter removal.

Retained suprapubic catheter- had a 6cm bladder stone and was managed with open vesicolithotomy and suprapubic fistulous tract excision (fig-2,3).

Retained nephrostomy tube –kidney was xanthogranulomatous and nonfunctional and underwent nephrectomy (fig-4). All the patient was free of stone symptoms on follow up and two of them were chronic kidney disease on hemodialysis.

DISCUSSION

Advancement in endo-urological techniques has lead to a rise in number of such procedures done. There is a surge in recent times of such procedures, due to technological advancement in equipment design. The need for tubes like DJ Stents, neprostomy tubes, suprapubic catheter, indwelling bladder catheters increase and in turn they require much attention and care. Ignorance on this part shall result in tough law suits. Also tubes are used in situations, where an intended procedure could not be done, either due to technical difficulty or debilitated nature of the patient. In these situations the tubes are considered as blessing for the patient. With advent of improved biomaterials many therapeutic goals in urology could be achieved by placement of tubes. A blessing though, the very advancement in biomaterials which is currently incomplete, contribute to insidious development of problems (encrustations and calcifications)^{1,3}, and lead to delayed presentation. An ideal biomaterial is still far from reality, and hence any tube used in urology could potentially become a problem if retained for long¹. Encrustations occur on the surface of any biomaterial used in urology with varied presentation¹. Some of them may present with very large calculi. Analysis of literature shows majority of the cases being limited to forgotten DJ stents³. Few articles quote about nephrostomy tube encrustation. In our hospital we have encountered a variety of retained tubes. Majority of them being DJ stents. Second common problem was with bladder catheters. It seems that there is no single technique that might be useful to solve such problem. Tailoring the procedure to the need of the situation is advised. We have used endourological management as first line. Open surgical techniques are combined if necessary. Some cases such as large bladder calculi were tackled with open procedure as first choice. Prevention is the best option to avoid this challenging problem. We use a phone call based alerting system of the patient who were discharged with tubes in-situ. Still our biggest difficulty was poor comprehension of the problem by the patient. Upon interviewing these patients the most important contributing factor was patient forgetting to review as advised. The quoted reason being poor logistics, especially those patients from remote areas. Our experience hence highlights the following important facts.

1. Need for thorough explanation of the presence of indwelling tubes after every procedure incorporating it. Patients should be clearly explained about the duration upon which a follow up is required for the care of such tubes. This should be documented clearly as it would be required later in the event of legal problem
2. Creating awareness among the patient about the presence of tubes and ensuring their comprehension about the temporary nature of such tubes.
3. Devising an efficient method of communication with the defaulters.

Ultimate goal of management in these difficult cases will be to minimize morbidity (related to procedure) and prevent renal functional impairment⁵. We preferred using plain Xray and CT scan(with contrast if possible) to evaluate the problem². The aim is to clearly plan the course of management preoperatively and the same was used in counseling the patient². Attempt was made to predict the outcome as closely as possible. In our

hospital, difficulty was encountered in patients with co-morbid diseases like uncontrolled diabetes mellitus. Complex encrustations if combined with the above predicted poorer functional outcome³. Nephrectomy was done only when all other options are ruled out, as in a case of Xanthogranulomatous pyelonephritis. The questions that were to be answered are regarding the contributory factors (apart from time), in predicting the severity of encrustations^{1,6}. No published report on analysis of these encrustations has suggested any practical solution to the problem⁶. Such analysis need to be done with different perspective other than conventional metabolic evaluation of the stone. Prevention being the best option, a thorough search should be done in to any drug that could be suggested to the effect. The situation should be taken as a specialized one and the urologist must be prepared for all interventional techniques as the condition may call.

CONCLUSION

we hereby conclude that retained tubes can be managed with appropriate technique. But patient education and awareness to consult at right time for tube removal is the most important factor in preventing the morbidities because of these retained tubes .

Table 1 Retained ureteric stent management

No. of patients	CT findings	Treatment
5	Mild stent encrustations with no hydronephrosis	Ureterscopy with stent removal
3	1-2 cm renal stone with stent encrustations with no hydronephrosis	ESWL with Ureterscopy with stent removal
3	>2cm renal stone with stent encrustations with hydronephrosis	PCNL with Ureterscopy with stent removal and restenting.

Table 2 Retained urethral catheter management

No. Of patients	Ct findings	Treatment
3	Shell calculi in urinary bladder.	USG guided balloon puncture with cystoscopy
2	Bladderstone	Vesicolithotripsy with catheter removal.



Figure1 Encrusted And Broken Stent

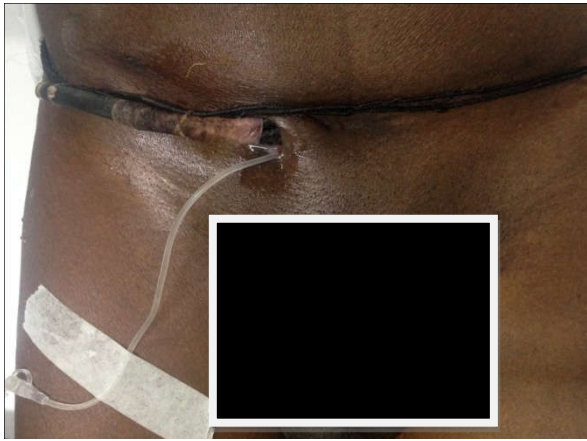


Figure 2 Retained suprapubic catheter

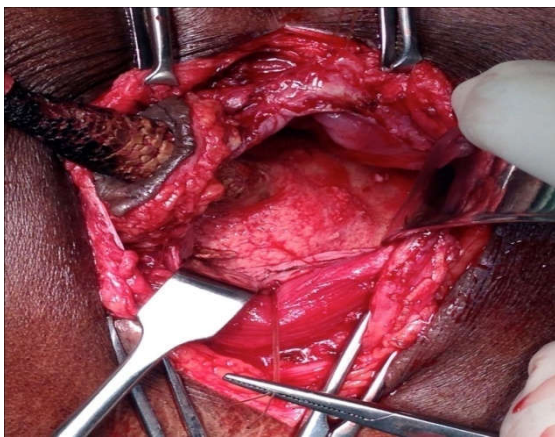
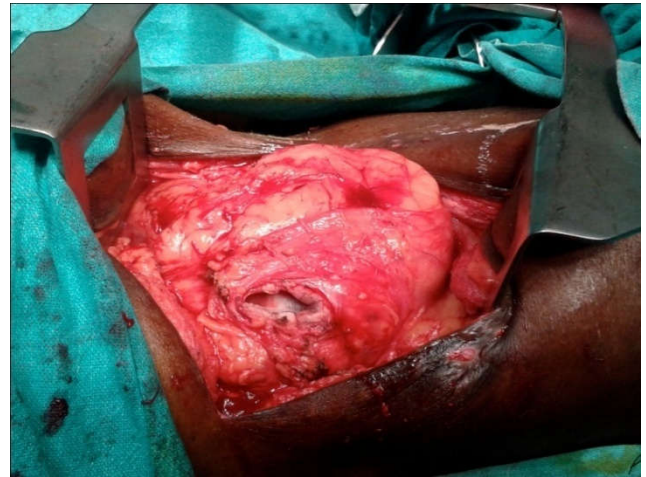


Figure 3 Retained suprapubic catheter with bladder stone – vesicolithotomy procedure and tract excision



Figure 4 Retained Nephrostomy tube with xgpn

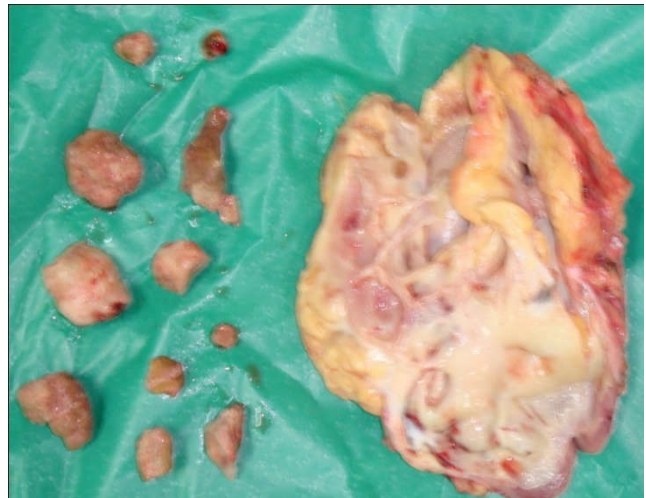


Figure 5 Retained nephrostomy tube –nephrectomy demonstrating stones

References

1. Bieko DT, Knudsen BE, Watterson JD, Cadieux PA, Reid G, Denstedt JD. Urinary tract biomaterials. *J Urol* 2004; 171: 2438 – 2444
2. Banner MP, Ramchandani P, Pollack HM. Interventional procedures in the upper tract. *Intervent Radiology*, 1991;14:267-284
3. Ray RP, Mahapatra RS, Mondal PP, Pal DK. Long-term complications of JJ stent and its management: A 5 years review. *Urol Ann.* 2015 Jan-Mar; 7(1): 41–45. doi: 10.4103/0974-7796.148599.
4. Zimskind PD, Fetter TR, Wilkerson JL. Clinical use of long-term indwelling silicone rubber ureteral splints inserted cystoscopically. *J Urol.* 1967;97:840–4.
5. Dakkak Y, Janane A, Ould-Ismail T, Ghadouane M, Ameer A, Abba M. Management of encrusted ureteral stents. *Afr J of Urology* 2012;18 (3):131-4.
6. Miyaoka R, Monga M. Ureteral stent discomfort: Etiology and management. *Indian J Urol.* 2009;25:455–60.
7. Mursi K, Fayad A, Ghoneim I, El-Ghamrawy H. Stones on a forgotten double-J stent: a case report of multiple stones casting a multi-fractured ureteral stent. *Afr J Urol*, 11 (3) (2005), pp. 247–24
