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Indications and complications of double J Stents: A comprehensive review

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Abstract

Objectives: To describe the different complications of the JJ catheter, and to determine the association between the duration of implantation and the occurrence of complications.

Patients and methods: Retrospective descriptive study of 37 cases of patients with complicated ureteral stents collected from January 2016 to April 2017;

Results: The average duration of implantation was 7months and 10d, 37 patients (mean age 41. 5) were included: 26 men and 11 women, the most frequent complication was encrusted JJ (70.2%), followed by urinary tract infection (21.6%), an endo-urological treatment was chosen in first intention and consisted in the extraction of the double J catheter under cystoscopy (with recourse to an endolithotomy in case of encrusted JJ), allowing to obtain a very good results.

Keywords: Probe JJ; Uretere; Ureteral obstruction; Infection; Break

1. Introduction

The use of ureteral endoprostheses is a very commun procedur in urology [1]. Despite recent innovations and improved materials, serious complications are regularly encountered. While waiting for an ideal stent, problems related to stent migration, obstruction, or stone formation are responsible for morbidity in addition to intolerance phenomena. Stents must then be monitored once in place, promptly removed when no longer needed, and changed periodically in case of chronic stay [2].

2. Patients and methods

This is a retrospective study focused on the analysis of patients with complicated ureteral stents collected in the Department of Urology and Renal Transplantation, over a period of 16 months from January 2016 to April 2017. Iatrogenic and post-traumatic complications are excluded, And for selectivity criteria of our service some complications were not found during our study (such as bladder irritative disorders, dysuria, etc....) in comparison with the literature data, due to the lack of hospitalization of these patients.

In the end, 126 double J catheters were placed during these 16 months, of which 37 complicated cases were found and studied.

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3. Results and discussion

The average implantation time was 7 months and 10 days, 37 patients (mean age 41. 5) were included: 26 men and 11 women, the double J catheter was placed in 28 of our patients who had an upper urinary tract obstruction from lithiasis origin, six patients benefited from a urinary drainage by a JJ catheter in post-operation of an abdomino-pelvic surgery, two of our patients had double J catheter placed due to extrinsic compression of the ureter by a genitourinary tumor, and for one patient the indication for drainage was retroperitoneal fibrosis (RPF).

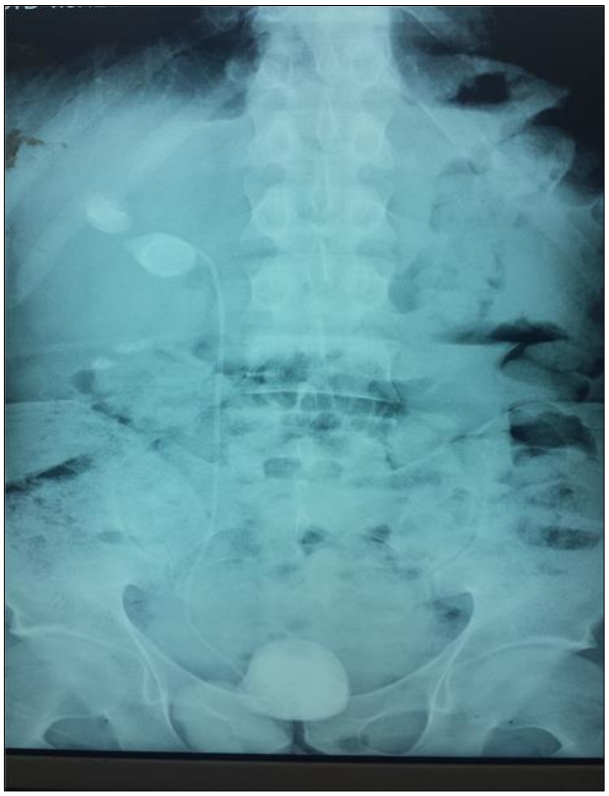

Figure 1 Abdominal radiography showing an incrusted double J probe

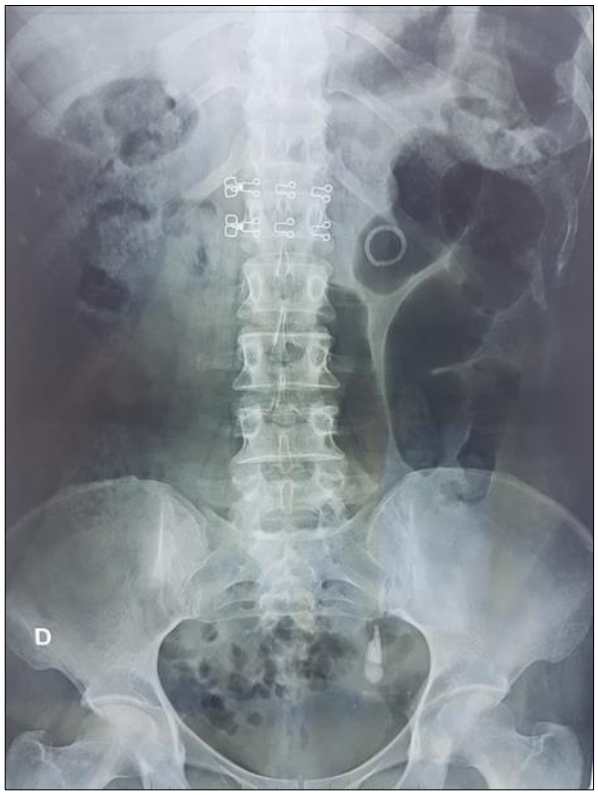

Figure 2 Abdominal radiograph showing a ruptured double J tube

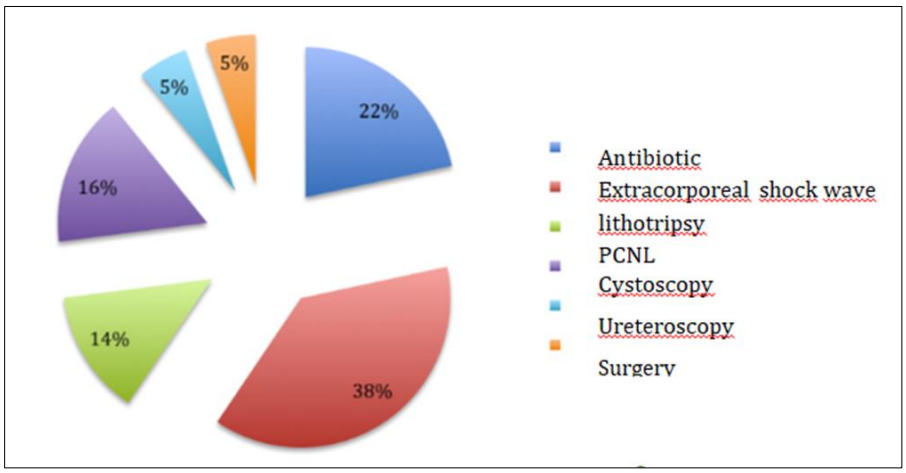

Figure 3 Distribution of cases by treatment

4. Discussion

Ureteral stents represent the most mature application of an indwelling endoluminal probe. Over time, their indications have expanded considerably, and ureteral stenting is now considered as a standard and indispensable urological tool. It must be recognized, however, that no device currently available meets all the criteria of the "ideal" stent [3,4].

Some consequences can be anticipated with the implantation of a foreign body in the urinary tract. They can also cause complications such as migration, calcification, fragmentation, stone formation..(Fig4,5) [5,6].

The treatment of kidney and ureter stones is the most frequent indication for the use of the double J catheter. Several studies have been carried out in this respect, Richter and Memon found a rate of 80% and 72% respectively. Our series is in line with these studies with a rate of 76% of patients who had a history of lithiasis indicating the placement of the JJ catheter [7,8,9].

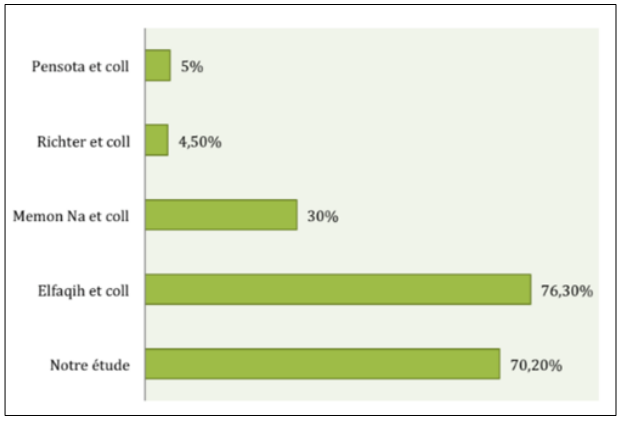

Figure 4 Our study

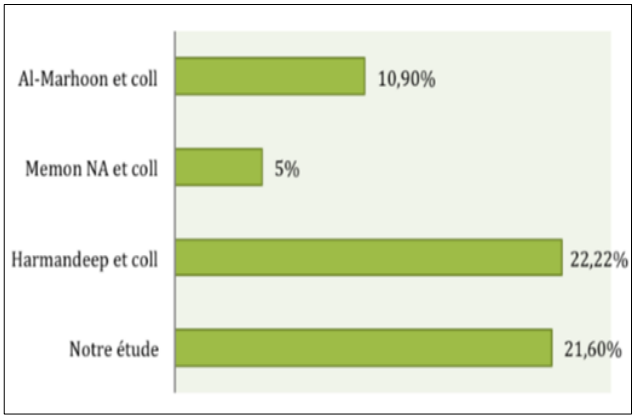

Figure 5 Urinary tract infection

5. Conclusion

Complications of JJ catheters remain frequent, our study confirms that the duration of implantation must be as short as possible in order to avoid these complications, which implies to organize quickly the etiological management of these patients.

Compliance with ethical standards

Acknowledgments

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Disclosure of conflict of interest

No conflict of interest.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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