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Original Research Article

Assessment of Ureteric Calculi among Patients Visited in Tertiary Care Center

Sanjay Sharma[1*], Harish Bhat[2]

[1*]Associate Professor, [2]Senior Resident, Department of Urology,
Saveetha Medical College & Hospital, Saveetha Nagar, Thandalam, Chennai, Tamil Nadu, India.

ABSTRACT

Background: Ureteric calculi are the third most common condition of urinary tract exceed only by Urinary tract infection and pathological cases of prostate. Hence; the present study was undertaken for assessing ureteric calculi among patients visited in tertiary care center.

Materials & Methods: A total of 200 patients who reported to the Department of Urology, Saveetha Medical College & Hospital, Saveetha Nagar, Thandalam, Chennai, Tamil Nadu (India) with ureteric calculi were enrolled in the present study. Detailed clinical presentation of the all the patients was obtained. Radiographic investigations were carried out in all the patients for obtaining the details of site of ureter involved. All the results were recorded in Microsoft excel sheet and were analyzed by SPSS software.

Results: Mean age of the patients of the present study was 48.6 years. 44 percent of the patients belonged to the age group of 30 to 50 years. 28.5 percent of the patients belonged to the age group of more than 50 years. 27.5 percent of the patients belonged to the age group of less than 30 years. 61.5 percent of the patients in the present study were males, while the remaining 38.5 percent of the patients were females.

Conclusion: Ureteric calculi most commonly occurs in middle-aged males with pain abdomen being the most common clinical presentation.

Key words: Calculi, Ureteric.

***Correspondence to:**

Dr. Sanjay Sharma,
Associate Professor,
Department of Urology,
Saveetha Medical College & Hospital,
Saveetha Nagar, Thandalam, Chennai, Tamil Nadu, India.

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INTRODUCTION

Ureteric calculi are the third most common condition of urinary tract exceed only by Urinary tract infection and pathological cases of prostate. They have plagued humans since the earliest records of civilization. It affects 5-15 % of population worldwide with 12% in men and 6% in female. There is life time risk of passing a kidney stone of about 8-10 %. Age of onset around 20 years in male which peak at 40-60 years.[1-3]

An adequate metabolic evaluation should focus on the urinary excretion of promoters and inhibitors of stone formation as well as on the occurrence of systemic diseases potentially related to secondary nephrolithiasis (i.e., endocrine disturbances, malabsorption, and bone diseases). Moreover, metabolic investigations should provide reliable information on patient's dietary habits, guide towards the best therapeutic approach and enable the physician to verify patient's compliance to prescribed therapies.[4-6] Hence; under the light of above mentioned data, the present study was undertaken for assessing ureteric calculi among patients visited in tertiary care center.

MATERIALS & METHODS

The present study was conducted in the Department of Urology, Saveetha Medical College & Hospital, Saveetha Nagar, Chennai, Tamil Nadu (India). A total of 200 patients who reported to the department of urology with ureteric calculi were enrolled in the present study. Detailed clinical presentation of the all the patients was obtained. Radiographic investigations were carried out in all the patients for obtaining the details of site of ureter involved. Exclusion criteria for the present study included:

- Diabetic subjects,
- Hypertensive subjects,
- Subjects with presence of any other systemic illness,
- Subjects with any known drug allergy,
- Subjects with presence of any other metabolic syndrome
- Subjects with presence of any ureteric malignancy

All the results were recorded in Microsoft excel sheet and were analyzed by SPSS software. Chi- square test was used for assessment of level of significance.

Table 1: Age-wise and gender-wise distribution of patients

Parameter		Number of patients	Percentage of patients
Age group (years)	**Less than 30**	55	27.5
	30 to 50	88	44
	More than 50	57	28.5
Gender	**Males**	123	61.5
	Females	77	38.5

Table 2: Clinical presentation and site involved

Parameter		Number of patients	Percentage of patients
Clinical presentation	**Pain abdomen**	110	55
	Hematuria	22	11
	Fever	56	28
	Others	33	16.5
Site of ureter	**Upper one third**	59	29.5
	Middle one third	61	30.5
	Lower one third	80	40

RESULTS

In the present analysis, a total of 200 patients were analyzed. Mean age of the patients of the present study was 48.6 years. 44 percent of the patients belonged to the age group of 30 to 50 years. 28.5 percent of the patients belonged to the age group of more than 50 years. 27.5 percent of the patients belonged to the age group of less than 30 years. 61.5 percent of the patients in the present study were males, while the remaining 38.5 percent of the patients were females.

In the present study, pain abdomen was found to be present in 55 percent of the patients. Hematuria was found to be present in 11 percent of the patients. Fever was found to be present in 28 percent of the patients. Lower third of ureter was involved in 40 percent of the patients. Middle thirds of the ureter was involved in 30.5 percent of the patients. Upper third of the ureter was involved in 29.5 percent of the patients.

DISCUSSION

Ureteric colic is an important and frequent emergency in medical practice. It is most commonly caused by the obstruction of the urinary tract by calculi. Between 5–12% of the population will have a urinary tract stone during their lifetime, and recurrence rates approaches 50%.[5- 7] Physical examination typically shows a patient who is often writhing in distress and pacing about trying to find a comfortable position; this is, in contrast to a patient with peritoneal irritation who remains motionless to minimise discomfort. Tenderness of the costovertebral angle or lower quadrant may be present. Gross or microscopic haematuria occurs in approximately 90% of patients; however, the absence of haematuria does not preclude the presence of stones.[8]

In the present analysis, a total of 200 patients were analyzed. Mean age of the patients of the present study was 48.6 years. 44 percent of the patients belonged to the age group of 30 to 50 years. 28.5 percent of the patients belonged to the age group of more than 50 years. 27.5 percent of the patients belonged to the age group of less than 30 years. 61.5 percent of the patients in the present study were males, while the remaining 38.5 percent of the patients were females. Ureteric stones require radiological or surgical intervention only when the conservative treatment fails. The probability of spontaneous passage is based on a number of factors including stone size, stone position, degree of impaction and degree of obstruction. The likelihood of spontaneous stone passage decreases as the size of the stone increases. Most authors recommend that stone passage should not exceed 4–6 weeks due to the risk of renal damage.[9]

The incidence of urolithiasis is increasing globally, with geographic, racial, and gender variation in its occurrence. Epidemiological study (1979) in the western population reveals the incidence of urolithiasis to be 124 per 100,000 in males and 36 per 100,000 in females. The lifetime risk of having urolithiasis is higher in the Middle East (20–25%) and western countries (10–15%) and less common in Africans and Asian population. Stone disease carries high risk of recurrence after the initial episode, of around 50% at 5 years and 70% at 9 years.[10, 11]

In the present study, pain abdomen was found to be present in 55 percent of the patients. Hematuria was found to be present in 11 percent of the patients. Fever was found to be present in 28 percent of the patients. Lower third of ureter was involved in 40 percent of the patients. Middle thirds of the ureter was involved in 30.5 percent of the patients. Upper third of the ureter was involved in 29.5 percent of the patients. Management of stone disease needs individualization. Clinical presentation, proper history, and laboratory tests help to identify whether one needs urgent surgical or medical treatment.[12] Medical management is indicated for clinically stable patients with non-obstructive urinary stones, recurrent stone formers, and the patients with underlying systemic diseases. Detailed history of patient illness including family history, drug history, and history of previous similar illness and previous interventions needs to be recorded.[13] Rathod R et al presented a case of a 35-year old female who presented with minimally symptomatic right distal ureteric calculus with proximal hydroureteronephrosis. Laparoscopic right ureterolithotomy was performed and a giant ureteric calculus measuring 11 cm X 1.5 cm, weighing 40 g was retrieved.[14]

CONCLUSION

Under the light of above obtained data, the authors concluded that ureteric calculi most commonly occur in middle-aged males with pain abdomen being the most common clinical presentation. However; further studies are recommended.

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