

Pattern and Distribution of Renal Stones: Our Experience in Border Guard Bangladesh' Hospital

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ABSTRACT

Back ground: Geographic variation in the rate of urinary stone has been observed in developing countries. Though etiology of renal stone is not well understood but some precipitating factors like urinary infection, less fluid intake, dietary habit and metabolic factors has been observed common among the members of 'Border Guard Bangladesh' (BGB). They mostly remain in the remote areas of the country having common supplied food items with prolong exposure of precipitating factors of stone formation. This observation leads to undertake this study to see the distribution or urinary stones among BGB members.

Methodology: Cross sectional observational study was done at Peel Khana BGB hospital from July 2015 to June 2017. Patients were selected by history taking, clinical examination and investigations. All the patients having urinary stone were included in this study.

Results: Among 56 patients 42 (75%) patients were male and 14 (25%) were female and male female ratio was 3:1. Age ranges were 18yrs to 78yrs. With a mean of 32 ± 2.3 yrs. Common presenting symptom was pain (83.92%). Other symptoms were recurrent UTI (33.92%), haematuria (19.64%) and dysuria (32.14 %). According to location of stone 15

(26.78%) in the renal calyx, 9 (16.07%) found in the pelvis, 17 (30.35%) situated in the ureter, 12 (21.42%) found in the urinary bladder and 3 (5.35%) found in the urethra. Bilateral presence of stone found in 6 (10.71%) cases.

Conclusion: Urinary stones are predominantly found in male and frequently presented with urinary colic. Upper tract stone is more common than lower tract. Regular evaluation with renal screening is needed to find out prevalence of urinary stones among Border Guard Bangladesh members.

Keywords: Renal Stone, Pattern, Distribution, BGB Hospital.

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INTRODUCTION

Urinary stones are not life threatening condition but may leads to serious morbidity¹, interrupting normal daily activities specially those peoples who are involving protecting borders of Bangladesh. It was observed a wide regional variation of prevalence of urinary stones and the site of stone formation.^{2,3} Urinary stones when grows up to occupy much of collecting space and when it migrates and obstructing urine drainage, leads to renal dysfunction as well as renal damage.⁴ Although new and effective treatment modalities have been introduced for urolithiasis, they are still a major problem of everyday urological practice.⁵ Members of BGB families are exposed to many of the high risk factors of stone formation but no such study was found related to urolithiasis.

MATERIALS AND METHODS

This cross sectional observational study was done in BGB Hospital Peelkhana Dhaka from July 2015 to June 2017 with a

sample size of 56. Only BGB members those who are servicing or retired and their family members were included in this study. Cases were selected randomly attending outpatient department with symptoms associated with urinary tract. Diagnosis is based on proper history taking, adequate clinical examination and investigations like plain KUB x-ray, Ultra sonography, and IVU with urine analysis, blood urea and serum creatinine. Outcome was measured by age, sex, stone location and clinical presentations.

RESULTS

There is male predominance in renal stone formation in this study, male 42 and female 14 and the ratio is 3:1. Mean age was 32 ± 2.3 yrs with a age range of 18 to 72 yrs. Commonest presenting feature was pain 47 (83.92%), other presenting symptoms were recurrent UTI 19 (33.92%), haematuria 11 (19.64%), dysuria 18 (32.14%), urinary retention 3 (5.35%), spontaneous stone passing

3 (5.35%) and 8 (14.28%) patients had no symptoms. On imaging stone were found 15 (26.78%) in renal calyx, 9 (16.07%) in renal pelvis, 17 (30.35%) in ureter, 12 (21.42%) in urinary bladder and 3 (5.35%) in urethra.

Table 1: Presenting features of urinary stone disease

| Features (n=56) | No | % |
|--------------------|----|-------|
| Pain | 47 | 83.92 |
| Recurrent UTI | 19 | 33.92 |
| Haematuria | 11 | 19.64 |
| Dysuria | 13 | 23.21 |
| Retention of urine | 3 | 5.34 |
| Incidental finding | 8 | 14.28 |

Table 2: Anatomical distributions of renal stone

| Anatomical site | No | % |
|-----------------|----|-------|
| Kidney | 15 | 26.78 |
| Renal pelvis | 9 | 16.07 |
| Ureter | 17 | 30.35 |
| Urinary Bladder | 12 | 21.24 |
| Urethra | 3 | 5.35 |

DISCUSSION

Urinary stone is a common urological disease in South East Asia. Incidence of urolithiasis is increasing day by day in this continent.⁴ Urolithiasis is the third most common disease of urinary tract.⁶ Prevalence urinary stone in general population was 5%.⁷ Different predisposing conditions are responsible for the disease like less water intake, recurrent urinary infections, anatomical abnormality, hypertension, diet containing low magnesium and calcium, cystine, urates and some metabolic conditions.⁸ Border soldiers are exposed to chronic dehydration and many other predisposing conditions, which may leads to increase urinary stone formation. In this study there was male predominance with a ratio of 3:1 which is supported by other reports.⁹ In some other studies the ratio is as high as 6:1.¹⁰ Mean age of patients having urolithiasis in this study was 32±2.3 yrs, a bit higher than other reports where pick incidence was 30 yrs.⁷ In the Hungarian army & professional stuff¹¹ and other series the mean age of stone formation was between 20-30 years. In this study upper tract stone was 41 (73.21%) and lower tract stone was 15 (26.78%) and the difference is highly significant (p>0.01). Generally it was found that lower tract stone is common¹⁰ but this parameter is different in this study as lower tract stones were more predominant in paediatric age group.⁴ Stones were found 15 (26.78%) in renal calyx, 9(16.07%) in renal pelvis, 17 (30.35%) in ureter, 12 (21.42%) in urinary bladder and 3(5.35%) in urethra. Emokpae & Gadzama⁴ observed predominance of bladder stones 38.86% and less frequent presence of renal stones (17.1%). Different degree of agonizing loin pain was the commonest presenting feature in this study. Among all 47 (83.92 %) patients presented with different form of pain with or without other associated symptoms. Recurrent UTI is also much common 19 (33.92%) with few cases of haematuria 11 (19.64%) and dysuria 13 (23.21%). Asymptomatic urinary lithiasis was 8 (14.28%). Presenting features of urolithiasis found here are more or less similar to the findings of other observations.^{11,12} Urinary stone is now considered a major health problem among military persons all countries and also in Boarder Guard Bangladesh that may interrupt the strength of a unit.¹³

CONCLUSION

Urolithiasis is one of the major public health issues among BGB with a highest frequency in the upper tract. Pain is the major presenting feature. Regular urinary tract screening may help in early detection and proper management.

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