

## RENAL LITHIASIS

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### ABSTRACT:

Two hundred and fifty patients with Urinary Tract Calculi, who were operated upon were studied in the period between 1986 to 1989. The maximum patients presented between thirty one and forty years of age. Male to female ratio was 4.6-8.1. One hundred and twelve patients had Renal and sixty patients had Ureteric Stones. Seventy eight patients had stone in the bladder and Urethra.

the commonest symptom was pain, haematuria alone was present in twelve patients and pyuria alone in six patients. Urinary tract infection was present in one hundred and eighty patients. The overall mortality rate was 1.6%. Only one patient had recurrence. Majority of the stones were calcium oxalate or calcium phosphate.

### INTRODUCTION:

The urinary calculi have been the subject of diagnostic and therapeutic effort since ancient times. There is a recorded case of a urinary tract calculus found in mummy in Egypt which dated to 4800 B.C. Even today it continues to be a major worldwide health concern and has remained unresolved despite tremendous clinical research. In developing countries including Pakistan, it is a substantial clinical problem and contributed to 9.1% of total surgical admissions in our unit.

The present study aimed at finding the prevalence of urolithiasis in our local population and evaluates our experiences in the management of patients with urolithiasis.

### MATERIALS AND METHODS:

Two hundred and fifty patients were investigated and operated upon in the Surgical "A" Unit, D.H.Q. Hospital, Abbottabad over a period of four years from 1986 to 1989. The patients came from different parts of Hazara Division, and represented all the social classes.

All the patients with urinary symptoms were subjected to routine examination of urine and X-ray KUB. The patients with urinary calculi, diagnosed radiologically, were admitted. In two patients, the stones were diagnosed incidentally when plane abdominal x-ray was done for other abdominal conditions. In one patient, the stone was radiolucent and removed during prostatectomy. The patients managed conservatively are not

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included in the series.

The signs and symptoms on admission are shown in Table-1. The majority of patients presented with more than one symptom. The duration of symptoms varied from hours to years but in most cases the duration was less than twelve months.

**Table-1:**

Symptoms	Number of Patients	Percentage
Pain	201	80.4
Burning	201	80.4
Dysuria	190	76.0
Frequency	30	12.0
Haematuria	12	4.8
Pyuria	6	2.9
Retention	10	7.2
Other	4	3.6
Family History	26	10.4
Recurrent Stones	1	0.4
Proctectomy	23	9.2
Bladder Neck REsection	5	2.0
With infection	180	72.0

Following admission, routine investigations were done including blood complete picture, ESR, X-ray chest, X-ray KUB, routine examination of urine and blood urea. An intravenous pyclogram (IVP) was done only in patients with nephrolithiasis and ureterolithiasis. In others, the kidney functions were judged by blood urea. Retrograde pyclography was done only in two cases where the IVP showed a non-functioning kidney.

The stones were analysed for their chemical nature by the kit supplied by Merck (Merkognost-Cat. NO. 11003).

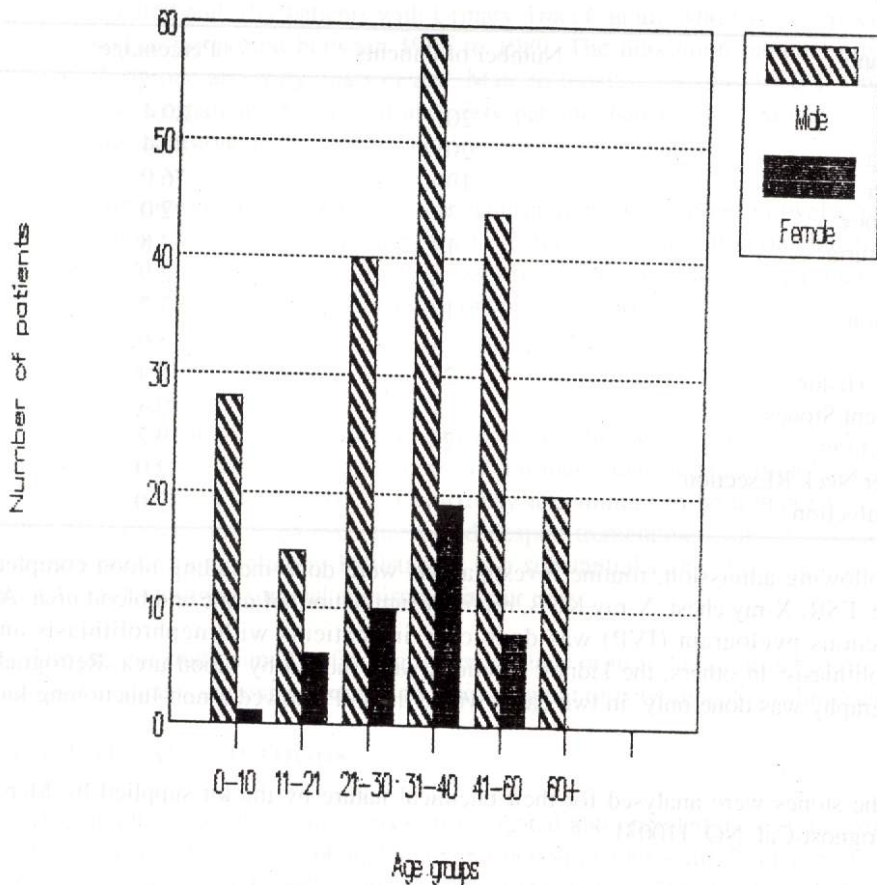
A proforma was designed giving details of:-

Age, Sex, Social-economic status, Dietary habits, symptoms, Past and present history of stones and clinical manifestation and other parameters.

## RESULTS :

The highest representation was between the age groups of 31 to 40 years. There was 202 males and 48 females and the male to female ratio was 4.7:1. the age-wise and sex-wise distribution of urolithiasis is shown in fig-1.

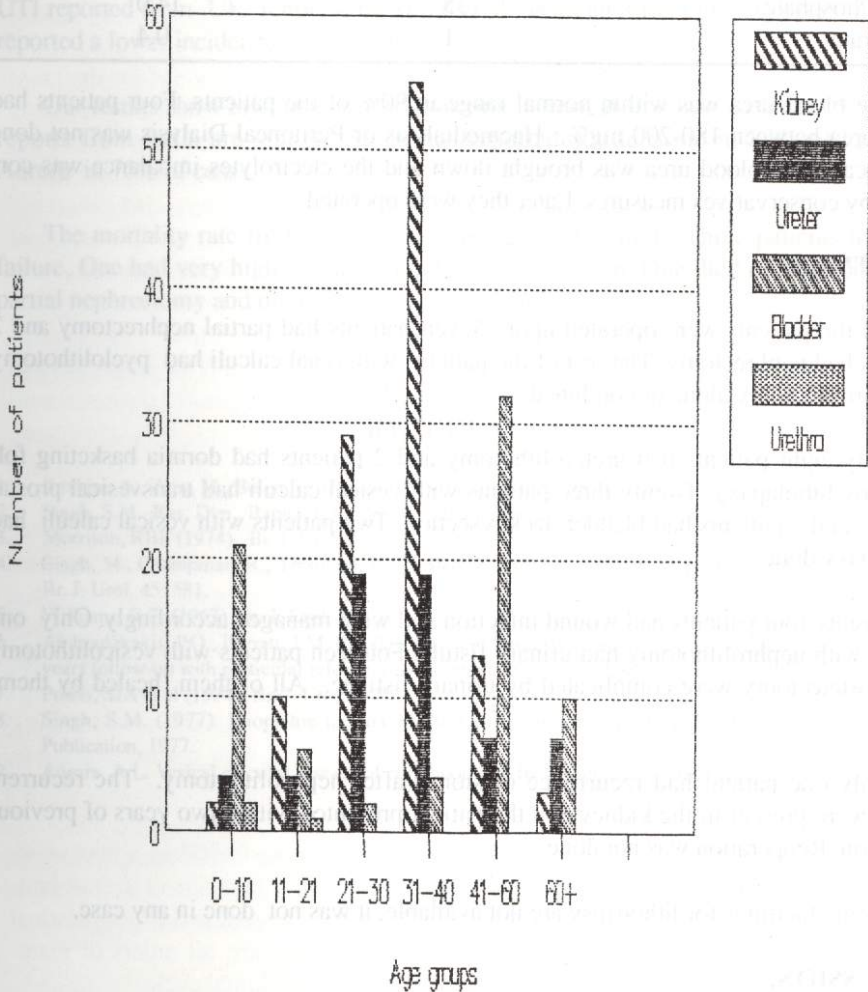
**FIG-1**  
**AGE AND SEX WISE DISTRIBUTION OF UROLITHIASIS**



Though most of the patients presented with more than one symptoms, loin pain and burning micturition were the commonest symptoms (80.4%). The microscopic examination of urine showed the presence of infection in 72% (180 patients), pyuria alone was present in only 6 patients. Haematuria alone was present in 12 patients (4/8%) Table-12. Twenty six patients had a past or family history of renal colics, passage of stones in the urine or operations on the urinary tract.

FIG-2

SITES OF URINARY STONES



The Vesical stones were highest in children under 10 years of age and in patients above forty years of age with Benign Prostatic Hyperplasia or Bladder neck obstruction. Ninety one patients with renal stones had a single stone and 21 patients had multiple stones. Eighteen patients had bilateral stones. Only 6 patients had stag-horn calculi. six patients had bilateral ureteric calculi and 4 patients had multiple ureteric calculi. Two patients had unilateral renal calculi and contrilateral ureteric stones. There patients had both vesical and renal stones. Chemical analysis of stones revealed calcium oxalate 63.6%, calcium phosphate 22% and triple phosphate 14% Table-2:

**Table-2: CHEMICAL ANALYSIS OF STONES.**

Nature	No. Patients	Percentage
Calcium Oxalate	159	63.6
Calcium Phosphate	55	22.0
Triple Phosphate	35	14.0
Pure Urate	1	0.4

The blood urea was within normal range in 90% of the patients. Four patients had blood urea between 180-200 mg%. Haemodialysis or Peritoneal Dialysis was not done in any case, the blood urea was brought down and the electrolytes imbalance was corrected by conservatives measures. Later they were operated.

### TREATMENT

All the patients were operated upon. Seven patients had partial nephrectomy and 2 patients had nephrectomy. The rest of the patients with renal calculi had pyelolithotomy or nephrolithotomy alone or combined.

Fifty eight patients had ureterolithotomy and 2 patients had dormia basketing followed by litholapaxy. Twenty three patients with vesical calculi had transvesical prostatectomy and 5 patients had bladder neck resection. Two patients with vesical calculi had litholapaxy done.

Twenty four patients had wound infection and were managed accordingly. Only one patient with nephrolithotomy had urinary fistula. Fourteen patients with vesicolithotomy and prostatectomy were complicated by urinary fistulae. All of them healed by themselves.

Only one patient had recurrence of stones after nephrolithotomy. The recurrent stones were present in the kidney and the patient presented within two years of previous operation. Reoperation was not done.

As the facilities for lithotripsy are not available, it was not done in any case.

### DISCUSSION:

Our findings of maximum representation of patients in this series fall at 31 to 40 years. These results are comparable with those reported previously<sup>1,2</sup> The male to female ratio is 4.68:1. The same observations were made in Australia<sup>3</sup> but contrasts markedly with the ratio of 2.6:1 reported in India.

the renal stones were found in 44.8% of patients and ureteric stones in 24% of patients. Lower urinary tract stones were found in 31.2% of patients. Therefore, renal and ureteric stones are more common than vesical stones in our study. These results are

reported by other workers also.<sup>1,2,3</sup>

Only one patient had recurrence of renal stones. This is not in agreement with those reported by other workers<sup>1,3,6</sup> who have reported a higher recurrence of urinary stones.

The urinary tract infection (UTI) was present in 72% of patients. The incidence of UTI reported from UK reported by Singh et al<sup>4</sup> is about 80%. Other workers however, reported a lower incidence of infection.<sup>3,5,7</sup>

Our results show low incidence of infection in vesical stones in children (24%). The reports from India are similar. Singh has reported sterile urine in 82% of cases and Aurora in 70% of cases.

The mortality rate from Urolithiasis was 1.6% (patients). Three patients had renal failure. One had very high blood urea before the operation. One died of septicemia after partial nephrectomy and died on the fourth day.

#### REFERENCES:

1. Ibrahim, A., Zein, M., Beileil, O. Clinical Aspects of urolithiasis in Sudan.
2. Singh, S.M., Ras, Dvn., Bapna, B.C. (1971). Indian J. Med. Res, 59: 1077.
3. Morrison, RBL. (1974). Br. J. Urol, 56:117.
4. Singh, M., Champman, R., Tresiderd, G.C., Blandy, J. (1973). The fate of unoperated Staghorn Calculus. Br. J. Urol. 45: 581.
5. Williams, R.E. (1963). Br. J. Urol. 5: 416.
6. Androulakis, P.O., Barratt, J.M. Ransley, P.g., and Innes, Williams. Urinary Calculi and children A 5-15 years follow-up with particular reference to recurrent and Residual Stones. Br. J. Urol. 1982; 54: 180.
7. Powis, SJA et al (1974). Br. J. Urol; 1: 355.
8. Singh, S.M. (1977). Idiopathic urinary bladder stones disease in India. Ed. by R.Van Reen. OHEW Publication, 1977.
9. Aurora, A.L. Vesical calculus disease of childhood. Ed. by R.Van Reen OHEW Publication, 1977.