

A Study of Surgical Management of Vesicle Calculus in Pediatric Patients

Roshan Chanchlani¹, Arvind Joshi²

¹Assistant Professor Department of Paediatric Surgery, Gandhi Medical College and Hamidia Hospital, Bhopal, Madhya Pradesh 462001, India. ²Associate Professor, Department of Surgery, Chirayu Medical College and Hamidia Hospital, Bhopal, Madhya Pradesh 462030, India.

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Abstract

In Paediatric Surgery practice in our region Urinary bladder calculi is common health problem. *Material and Methods:* It's a retrospective study of all cases of bladder stone admitted and operated in two tertiary care centers in Bhopal between June 2012 to June 2018. The data was collected regarding age, sex, socioeconomic status, surgery and its complications. Routine blood investigations, Kidney function test X ray KUB and USG KUB was done in all patients. All patients underwent Suprapubic cystolithotomy and were followed. *Results:* Most of the patients were of age group 3-5 years and most of the patients were males. Burning in micturition 22 (62.85%) was the most common complain followed by dribbling of urine 15 (42.81%). Most of the patients 23 (65.71%) presented with complain of less than one month duration. Wound infection 4 (11.42%) was the most common complication followed by catheter block (5.71%) in this series. *Conclusion:* In developing nation Bladder stones are public health problem amongst children. Low protein diet, dehydration, deficiency of vitamin A, and poor socio-economic conditions are major risk factors identified for development of bladder stones. Surgical management is the preferred treatment modality.

Keywords: Bladder Stone; Health Problem; Suprapubic Cystolithotomy.

Introduction

Children remain at high risk for developing bladder stones in endemic areas [1]. Bladder stones are endemic in developing regions such as Southeast Asia and India [2]. They can occur in childhood and are related to malnutrition, especially in a protein-poor diet [3]. Higher prevalence of stone disease is found in hot, and dry climate like mountains, desert or tropical area. The traditional method of treatment for patients with the bladder stone is cystolithotomy and this is a viable option in cases of large, hard vesical calculi [4]. Extracorporeal shockwave lithotripsy treatment is a technically easy method to treat bladder stones, but its application may be questionable in children because of the difficulty in passing the stone fragments [5]. The study is done to evaluate the management of bladder stone in our region.

Material and Method

A retrospective study was carried out in two tertiary centers between between June 2012 to June 2018. All the patients presenting with clinical symptoms and investigations suggestive of vesicle calculus were included in the study. The patients presenting with stones in kidney, ureter and urethra were not included. Routine hematological investigations were done and a midstream sample of urine was collected for analysis for routine, microscopy, culture and sensitivity. Appropriate antibiotics as per urine culture and sensitivity were started. Open suprapubic cystolithotomy was done in all cases, a urethral catheter was kept for 5-8 days. In all cases, retropubic corrugated rubber drain was kept for 48 hours. Check dress was done on 3rd post operative day with drain removal and sutures were removed after 7-8 days.

Corresponding Author: Arvind Joshi, Associate Professor Department of Surgery, Chirayu Medical College and Hamidia Hospital, Bhopal, Madhya Pradesh 462030, India.
E-mail: roshanchanchlani@gmail.com

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Observation Tables

Table 1: Presenting complaints of the patient n=35

Presenting Complaints	Number	Percentage
Dribbling of Urine	15	42.81
Burning in Micturition	22	62.85
Abdominal Pain	10	28.57
Haematuria	4	11.42
Increased frequency of Micturition	10	28.57
Retention of Urine	4	11.42
Rectal prolapse	1	02.85

Table 2: Duration of complaints n=35

Duration in Months	Number	Percentage
< 1	23	65.71
1-3	7	20.00
3-6	2	05.71
6-9	2	05.71
>9	1	02.85

Table 3: Surgical Complications n=35

Complications	Number	Percentage
Wound Infection	4	11.42
Catheter blockage	2	05.71
Urinary leak	1	02.85
Haematuria	1	02.85

Discussion

In our region the incidence of urolithiasis is more as the climate is hot and humid there is high incidence of malnutrition, and water is having high mineral content. In our study, it was more common in male patients in the first decade of life this was consistent with studies of Kabra et al and Pritamdas et al who had similar results [6,7]. Most patients in our series were of low socioeconomic class with poor nutritional status. In this study, burning in micturition 22 (62.85%) was the most common complain followed by dribbling of urine 15 (42.81%). Most of the patients 23 (65.71%) presented with complain of less than one month duration. Abarchi et al found difficulty in micturition as the common presentation which was also noted in our study [8]. Most of the cases were radiologically diagnosed on the basis of Xray KUB and Ultrasonography of KUB region. Open surgery as suprapubic cystolithotomy was considered the gold standard treatment of bladder stone in pediatric patients for a long time, offering excellent success rates [9] In our study all the Patients underwent open surgery with suprapubic cystolithotomy. Wound infection 4 (11.42%) was the most common complication

followed by catheter block (5.71%) in this series. All of these patients were managed conservatively. Most of the patients were discharged in one week. Our study is comparable to study by Lam et al. which presents similar surgical results [10]. In children over all stone recurrence rates range widely from 3.6 to 67% [11]. There was no recurrence at 1 year follow up in our study.

Conclusion

In developing nation like India Bladder stones are public health problem amongst children. Low protein diet, dehydration, deficiency of vitamin A, and poor socio-economic conditions are major risk factors identified for development of bladder stones. Open Surgical management is the preferred treatment modality with less morbidity.

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