



Jack Stone - A Rare Case of Submucosal Vesical Calculus

Authors

**Dr Siddharth Singh (M.S., FMAS, FIAGES, DMAS)¹, Dr Mohd. Athar (M.S F.I.O.S)²,
Dr Ashish Km. Chaudhary³, Dr Anand Vyas (M.B.B.S)⁴, Dr Shashwat Tiwari⁵,
Dr Siddhant Singh⁶**

^{1,2}Associate Professor, Department of General Surgery, G.S.V.M Medical College, Kanpur (U.P), India

³Assistant Professor, Department of General Surgery, G.S.V.M Medical College Kanpur (U.P), India

⁴Junior Resident (PG IIIrd Year), Dept of General Surgery, G.S.V.M Medical College, Kanpur (U.P) India

⁵Senior Resident, Department of General Surgery, G.S.V.M Medical College, Kanpur (U.P) India

⁶Junior Resident, Department of General Surgery, G.S.V.M Medical College, Kanpur (U.P), India

Corresponding Author

Dr Siddharth Singh (M.S., FMAS, FIAGES, DMAS)

Email: siddharthrs@yahoo.com

Abstract

Jack stone resembles the toy jacks. It has a core with radiating spicules. Jackstone implanted submucosally in the urinary bladder has not been reported yet.

Keywords: *Jackstone, vesical calculus, submucosal jackstone, toy jack.*

Case Report

A 40 yr. old male came in our OPD with complains of lower abdominal pain and burning micturition for 1 year (off & on episodes). Ultrasound of the lower abdomen reported normally distended, mildly thickened and oedematous bladder wall measuring approx. 5mm (cystitis) and calculus of approx. 20 mm seen in bladder lumen. Kidney and prostate were normal. Urinalysis confirmed urinary tract infection. Patient underwent open cystolithotomy and intraoperatively it was observed that the stone was lying submucosally in pedunculated fashion. Incision was given over the mucosal surface containing the stone and the stone was extracted (pic.1) Bladder closed in two layers with perivesical drain and perurethral foley's catheter

which was removed on seventh postop. day. After two weeks the patient came for follow up with complete resolution of pain and urinary symptoms.

Picture 1 Showing the Stone insitu before and after extraction.



Discussion

Bladder stones are mainly of two types primary and secondary. When there is no functional, anatomic and infectious factor responsible than it is called as primary stone. Secondary stones develop in bladder mainly in cases of lower urinary tract obstruction, infection, foreign body etc. Composition of bladder stone comprises of calcium oxalate, uric acid, cysteine (in cases of cystinuria) triple phosphate calculus (ammonium, magnesium and calcium phosphates). Symptoms of bladder stones varies from increased frequency of urination, pain referred to tip of penis, hematuria (passage of bright red blood) at the end of micturition, lower abdominal pain increased by movement.^[1]

Jackstone is named so as it resembles a child's toy. They are mainly reported in animals like cats, dogs etc. composed of silica^[2]. In humans it is composed of calcium oxalate dihydrate^[3]

In this case a nidus may have lodged in the wall of the urinary bladder and the mucosa has grown over it making the calculus submucosal. The chemical composition of stone extracted in this case obtained using Fourier transform infrared spectroscopy (FTIR) was calcium oxalate monohydrate (90%) and calcium oxalate dihydrate (10%).

Ethical Policy

This is a case report so no special permission was required from the ethical committee for the same. However, a written consent of the patient was taken for publication.

Conflict of interest: None.

Author's Contribution Statement

Conception and design & collection of data - Dr. Siddharth Singh

Analysis and interpretation of data & Final approval of the manuscript – Dr. Mohd Athar

Drafting the manuscript & critical revision of the manuscript – Dr. Ashish Chaudhary, Dr. Anand Vyas & Dr. Shashwat Tiwari

Obtained Funding – None

Overall Responsibility – Dr. Siddharth Singh

References

1. Douenias R, Rich M, Badlani G, Mazor D, Smith A. Predisposing factors in bladder calculi. Review of 100 cases. *Urology* 1991;37:240-3.
2. Osborne CA, Clinton CW, Kim KM, Mansfield CF. etiopathogenesis, clinical manifestations and management of canine silica urolithiasis. *Vet Clin North America Small Anim Pract* 1986;1:185-207.
3. Dretler S. Stone fragility: A therapeutic distinction. *J Urol* 1988;139:1124-7.