Case Report

Primary Bladder Neck Obstruction with Normal Prostate: Successful Management by Bladder Neck Incision—A Case Report

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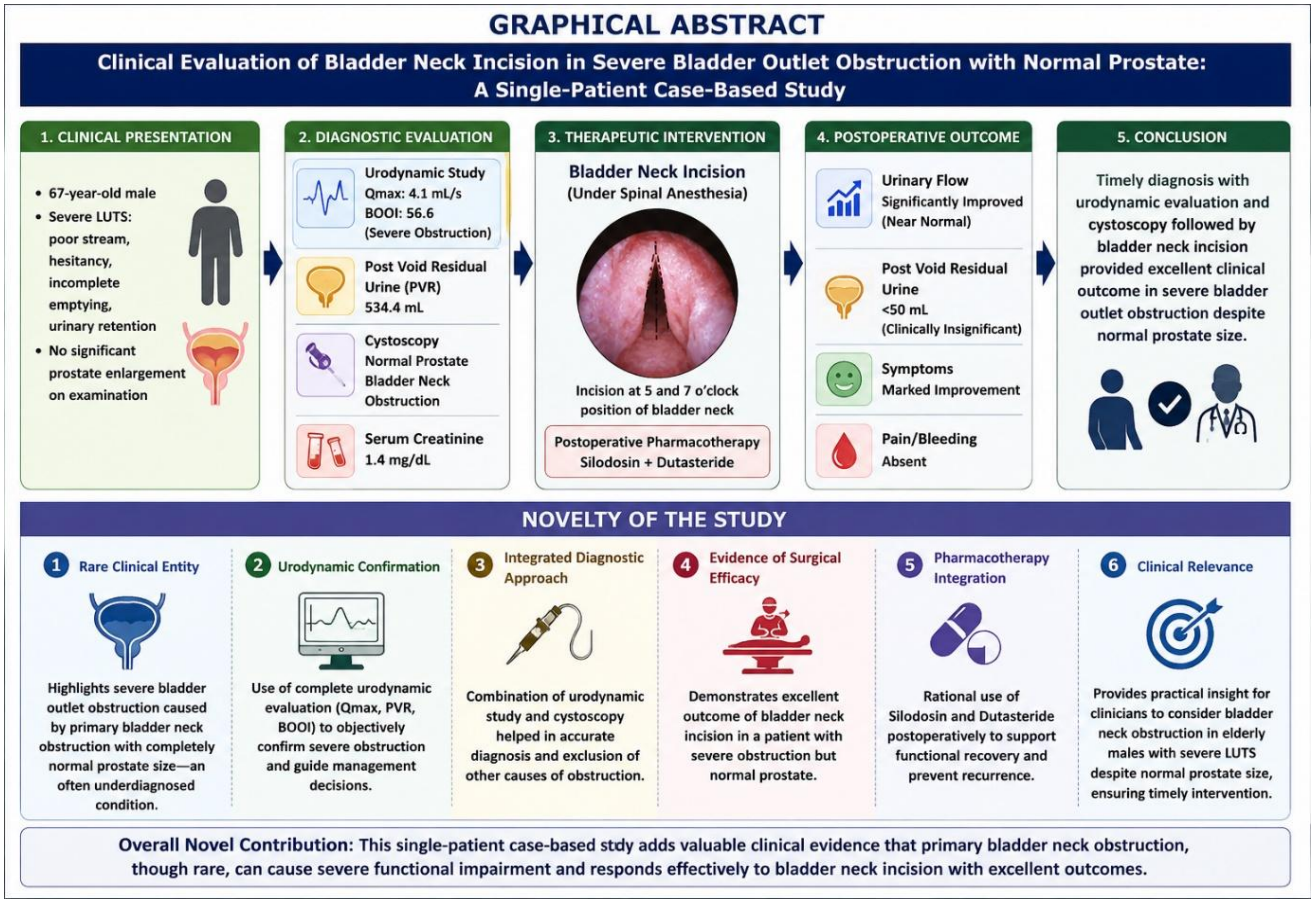
ABSTRACT

Primary bladder neck obstruction (PBNO) is an uncommon but clinically significant cause of bladder outlet obstruction (BOO) that may occur even in the absence of significant prostatic enlargement and may result in chronic urinary retention, recurrent urinary tract infections, bladder dysfunction, and renal impairment if diagnosis is delayed. We report the case of a 67-year-old male presenting with severe lower urinary tract symptoms, including poor urinary stream, urinary hesitancy, incomplete bladder emptying, and chronic urinary retention. Uroflowmetry demonstrated a maximum urinary flow rate (Qmax) of 4.1 mL/s, while post-void residual urine volume was 534.4 mL. Pressure-flow urodynamic evaluation revealed a bladder outlet obstruction index (BOOI) of 56.6, confirming severe bladder outlet obstruction. Cystoscopic examination demonstrated a normal-sized prostate with marked narrowing at the bladder neck, establishing the diagnosis of primary bladder neck obstruction. The patient underwent transurethral bladder neck incision under spinal anesthesia without perioperative complications. At follow-up, urinary flow improved significantly, post-void residual urine decreased to less than 50 mL, and obstructive urinary symptoms resolved completely with preservation of renal function. These findings are consistent with recent evidence supporting bladder neck incision as an effective treatment for appropriately selected patients with PBNO. This case highlights the importance of considering PBNO in elderly patients presenting with severe lower urinary tract symptoms despite a normal-sized prostate. Comprehensive urodynamic assessment combined with cystoscopic evaluation is essential for accurate diagnosis, while timely bladder neck incision provides excellent functional recovery and may prevent long-term complications.

Keywords: Primary Bladder Neck Obstruction, Bladder Outlet Obstruction, Lower Urinary Tract Symptoms, Cystoscopy, Urodynamics, Urinary Retention.



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INTRODUCTION

Bladder outlet obstruction (BOO) represents a major cause of lower urinary tract symptoms (LUTS) among elderly male patients and significantly affects quality of life[1-4]. Common symptoms include weak urinary stream, hesitancy, incomplete bladder emptying, urinary retention, frequency, and nocturia. Benign prostatic hyperplasia (BPH) remains the most frequently recognized cause of BOO in aging males; however, bladder outlet obstruction may also occur in the absence of significant prostatic enlargement[5].

Primary bladder neck obstruction (PBNO) is characterized by inadequate opening of the bladder neck during voiding without an obvious mechanical cause such as enlarged prostate or urethral stricture. The condition is often overlooked due to nonspecific symptom presentation and frequent overlap with other lower urinary tract disorders[6]. Delayed diagnosis may result in chronic urinary retention, recurrent urinary tract infections, upper urinary tract deterioration, and impaired renal function [7].

Urodynamic evaluation remains one of the most reliable diagnostic tools for differentiating functional bladder outlet obstruction from other voiding disorders. Parameters such as maximum urinary flow rate (Qmax), detrusor pressure, and bladder outlet obstruction index provide objective evidence for diagnosis and severity assessment.[8] In patients with persistent severe obstruction refractory to conservative therapy, surgical intervention including bladder neck incision (BNI) provides significant symptomatic and functional improvement[9]

The present study reports a single-patient clinical evaluation of severe bladder outlet obstruction in a 67-year-old male with normal prostate size, emphasizing diagnostic challenges, therapeutic intervention, and clinical outcome following bladder neck incision.

Novelty of the Case

Although benign prostatic hyperplasia is the most common cause of bladder outlet obstruction in elderly men, this case demonstrates that severe obstruction can occur in the absence of significant prostatic enlargement. The clinical value of this report lies in correlating urodynamic findings, bladder outlet obstruction index, cystoscopic confirmation, and successful surgical management within a single case. It reinforces the need for clinicians to consider primary bladder neck obstruction in the differential diagnosis of elderly patients presenting with severe lower urinary tract symptoms and chronic urinary retention despite a normal prostate.

CASE REPORT

The present work was designed as a single-patient observational clinical study based on authenticated hospital records, biochemical investigations, diagnostic imaging, urodynamic reports, treatment records, and follow-up clinical observations.[10] A 67-year-old male patient presenting with severe lower urinary tract symptoms including poor urinary flow, incomplete bladder emptying, urinary hesitancy, and chronic urinary retention was evaluated.

Clinical assessment included detailed medical history, physical examination, laboratory investigations, uroflowmetry, post-void residual urine (PVR) measurement, and urodynamic evaluation. Biochemical parameters including renal function tests were assessed to evaluate systemic impact of chronic urinary obstruction. Diagnostic urethrocystoscopy was performed to determine the anatomical cause of obstruction and to differentiate bladder neck pathology from benign prostatic enlargement or urethral stricture. [11]

All therapeutic interventions, perioperative findings, and postoperative outcomes were documented. Written informed consent was obtained from the patient prior to academic publication, and all personal identifiers were removed to maintain patient confidentiality in accordance with ethical publication standards. [12]

Clinical Learning Point:

- Primary bladder neck obstruction should be considered in elderly men with severe LUTS despite a normal-sized prostate.
- Pressure-flow urodynamic study and cystoscopy are complementary investigations for establishing the diagnosis.
- Early bladder neck incision can provide excellent symptomatic and functional outcomes in appropriately selected patients.
- Timely intervention may prevent chronic urinary retention, bladder dysfunction, and renal impairment.

DISCUSSION

The patient presented with severe lower urinary tract symptoms (LUTS), including poor urinary stream, urinary hesitancy, incomplete bladder emptying, and chronic urinary retention, suggestive of advanced bladder outlet obstruction (BOO). Baseline uroflowmetry demonstrated a markedly reduced maximum urinary flow rate (Qmax) of 4.1 mL/s, while post-void residual (PVR) urine was 534.4 mL, indicating significant impairment of bladder emptying. Pressure-flow urodynamic evaluation revealed a bladder outlet obstruction index (BOOI) of 56.6, confirming severe bladder outlet obstruction [1,8,22]. Mildly elevated serum creatinine (1.4 mg/dL) suggested early renal functional compromise secondary to prolonged urinary retention. Cystoscopic examination revealed a normal-sized prostate with marked narrowing at the bladder neck, confirming the diagnosis of primary bladder neck obstruction (PBNO) and excluding significant benign prostatic hyperplasia or urethral stricture as the underlying cause [2,22,24] .

Considering the severity of obstruction and persistent symptoms, the patient underwent transurethral bladder neck incision under spinal anesthesia. The procedure was completed successfully without intraoperative complications. Postoperative recovery was uneventful, with

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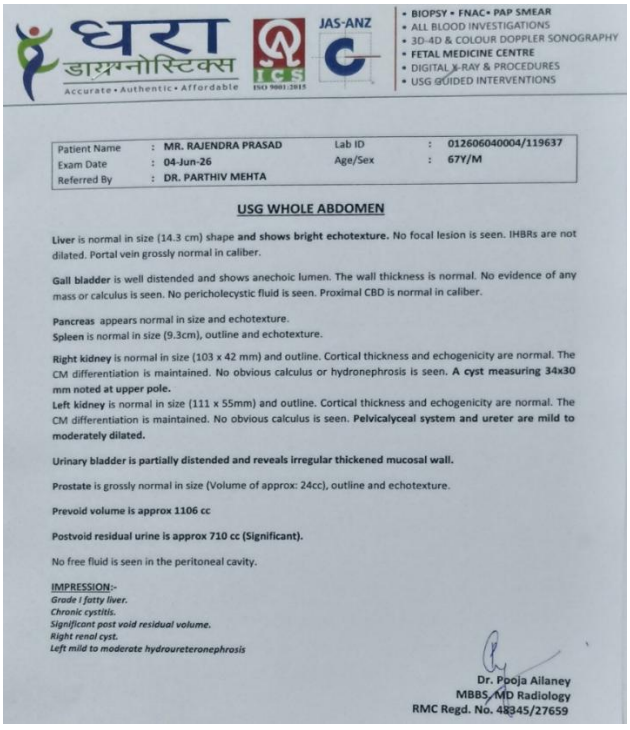
no significant hematuria, postoperative pain, or urinary complications. Follow-up assessment demonstrated marked improvement in urinary flow, reduction of post-void residual urine to less than 50 mL, complete resolution of obstructive symptoms, and preservation of renal function, indicating excellent functional recovery following surgical intervention [9,19,21,25].

Benign prostatic hyperplasia remains the most common cause of BOO in elderly men; however, PBNO should be considered when severe obstructive symptoms occur despite a normal-sized prostate [4,21,22]. Recent studies have highlighted that PBNO is frequently under-recognized because its clinical manifestations closely resemble those of BPH, often leading to delayed diagnosis and inappropriate treatment [23,24]. Therefore, objective diagnostic evaluation using pressure-flow urodynamics and cystoscopy is essential for distinguishing PBNO from detrusor underactivity, dysfunctional voiding, and urethral stricture [8,22,26].

Although α1-adrenergic blockers may provide symptomatic improvement in selected patients, surgical intervention remains the preferred treatment for patients with severe obstruction, chronic urinary retention, or failure of conservative management [21,24]. Transurethral bladder neck incision effectively reduces bladder outlet resistance, improves urinary flow, decreases post-void residual urine, and provides durable symptomatic relief with a low complication rate [19,21,25,27]. The excellent postoperative outcome observed in the present case is consistent with recent evidence supporting bladder neck incision as a safe and effective treatment for appropriately selected patients with PBNO [21,25].



धरा डायग्नोस्टिक्स
Accurate • Authentic • Affordable
JAS-ANZ
• BIOPSY • FNAC • PAP SMEAR
• ALL BLOOD INVESTIGATIONS
• 3D-4D & COLOUR DOPPLER SONOGRAPHY
• FETAL MEDICINE CENTRE
• DIGITAL X-RAY & PROCEDURES
• USG GUIDED INTERVENTIONS

Patient Name : MR. RAJENDRA PRASAD
Exam Date : 04-Jun-26
Referred By : DR. PARTHIV MEHTA
Lab ID : 012606040004/119637
Age/Sex : 67Y/M

USG WHOLE ABDOMEN

Liver is normal in size (14.3 cm) shape and shows bright echotexture. No focal lesion is seen. IHBRs are not dilated. Portal vein grossly normal in caliber.

Gall bladder is well distended and shows anechoic lumen. The wall thickness is normal. No evidence of any mass or calculus is seen. No pericholecystic fluid is seen. Proximal CBD is normal in caliber.

Pancreas appears normal in size and echotexture.
Spleen is normal in size (9.3cm), outline and echotexture.

Right kidney is normal in size (103 x 42 mm) and outline. Cortical thickness and echogenicity are normal. The CM differentiation is maintained. No obvious calculus or hydronephrosis is seen. A cyst measuring 34x30 mm noted at upper pole.
Left kidney is normal in size (111 x 55mm) and outline. Cortical thickness and echogenicity are normal. The CM differentiation is maintained. No obvious calculus is seen. Pelvicalyceal system and ureter are mild to moderately dilated.

Urinary bladder is partially distended and reveals irregular thickened mucosal wall.

Prostate is grossly normal in size (Volume of approx: 24cc), outline and echotexture.

Prevoid volume is approx 1106 cc

Postvoid residual urine is approx 710 cc (Significant).

No free fluid is seen in the peritoneal cavity.

IMPRESSION:-
Grade I fatty liver.
Chronic cystitis.
Significant post void residual volume.
Right renal cyst.
Left mild to moderate hydroureteronephrosis

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MBBS, MD Radiology
RMC Regd. No. 48345/27659

An important clinical aspect of this case is that significant bladder outlet obstruction occurred despite the absence of clinically significant prostatic enlargement. The combination of markedly reduced Qmax, elevated BOOI, high residual urine volume, and cystoscopic confirmation enabled an accurate diagnosis and appropriate surgical management. Early intervention prevented further deterioration of bladder function and may have reduced the risk of progressive renal impairment associated with prolonged urinary retention [22,24].

The present report is limited by its single-patient design and the absence of long-term follow-up. Nevertheless, it contributes to the growing evidence supporting comprehensive urodynamic assessment and cystoscopic evaluation in patients with persistent LUTS that cannot be explained solely by benign prostatic hyperplasia. Larger prospective multicentre studies are required to establish standardized diagnostic algorithms and optimize the management of primary bladder neck obstruction [23,26,27].

Table 1: Baseline Clinical and Diagnostic Parameters

Parameter	Observation
Age	67 years
Sex	Male
Clinical Symptoms	LUTS, weak stream, retention
Serum Creatinine	1.4 mg/dL
Maximum Flow Rate (Qmax)	4.1 mL/s
Post Void Residual Urine	534.4 mL
Bladder Outlet Obstruction Index (BOOI)	56.6
Prostate Size	Normal
Diagnosis	Primary Bladder Neck Obstruction

Table 2: Therapeutic Intervention and Postoperative Outcome

Parameter	Observation
Procedure	Bladder Neck Incision
Type of Anesthesia	Spinal Anesthesia
Intraoperative Complication	None
Postoperative Pain	Absent
Postoperative Bleeding	Absent
Urinary Flow	Significantly Improved
Post Void Residual	<50 Ml
Clinical Outcome	Marked Improvement

Table 3: Comparison of the Present Case with Previously Published Studies

Parameter	Previous Studies	Present Case
Age	Variable	67 years
Prostate size	Usually normal	Normal
Qmax	Reduced	4.1 mL/s
BOOI	Elevated	56.6
Cystoscopy	Narrow bladder neck	Present
Treatment	Bladder neck incision	Bladder neck incision
Outcome	Symptomatic improvement	Excellent recovery

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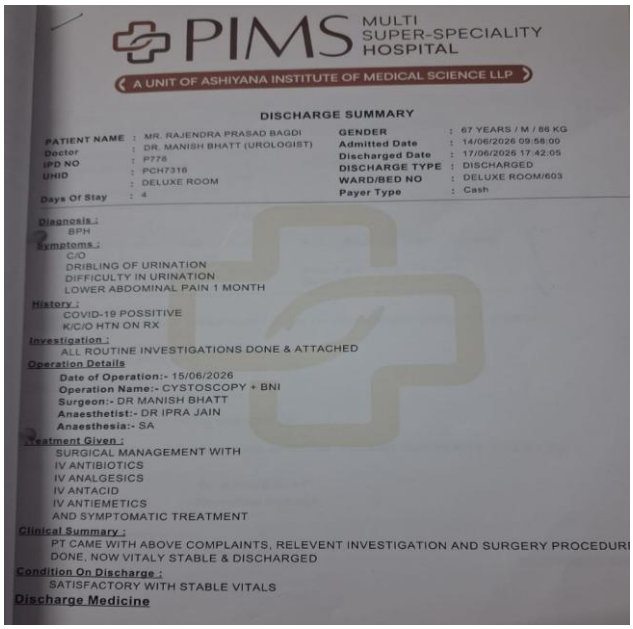

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DISCHARGE SUMMARY

PATIENT NAME : MR. RAJENDRA PRASAD BAGDI
Doctor : DR. MANISH BHATT (UROLOGIST)
IPD NO : P778
UHID : PCH7316
: DELUXE ROOM
Days Of Stay : 4
GENDER : 67 YEARS / M / 86 KG
Admitted Date : 14/06/2026 09:58:00
Discharged Date : 17/06/2026 17:42:05
DISCHARGE TYPE : DISCHARGED
WARD/BED NO : DELUXE ROOM/603
Payer Type : Cash

Diagnosis :
BPH
Symptoms :
C/O
DRIBLING OF URINATION
DIFFICULTY IN URINATION
LOWER ABDOMINAL PAIN 1 MONTH
History :
COVID-19 POSSITIVE
K/C/O HTN ON RX
Investigation :
ALL ROUTINE INVESTIGATIONS DONE & ATTACHED
Operation Details
Date of Operation:- 15/06/2026
Operation Name:- CYSTOSCOPY + BNI
Surgeon:- DR MANISH BHATT
Anaesthetist:- DR IPRA JAIN
Anaesthesia:- SA
Treatment Given :
SURGICAL MANAGEMENT WITH
IV ANTIBIOTICS
IV ANALGESICS
IV ANTACID
IV ANTIEMETICS
AND SYMPTOMATIC TREATMENT
Clinical Summary :
PT CAME WITH ABOVE COMPLAINTS, RELEVENT INVESTIGATION AND SURGERY PROCEDURE DONE, NOW VITALY STABLE & DISCHARGED
Condition On Discharge :
SATISFACTORY WITH STABLE VITALS
Discharge Medicine

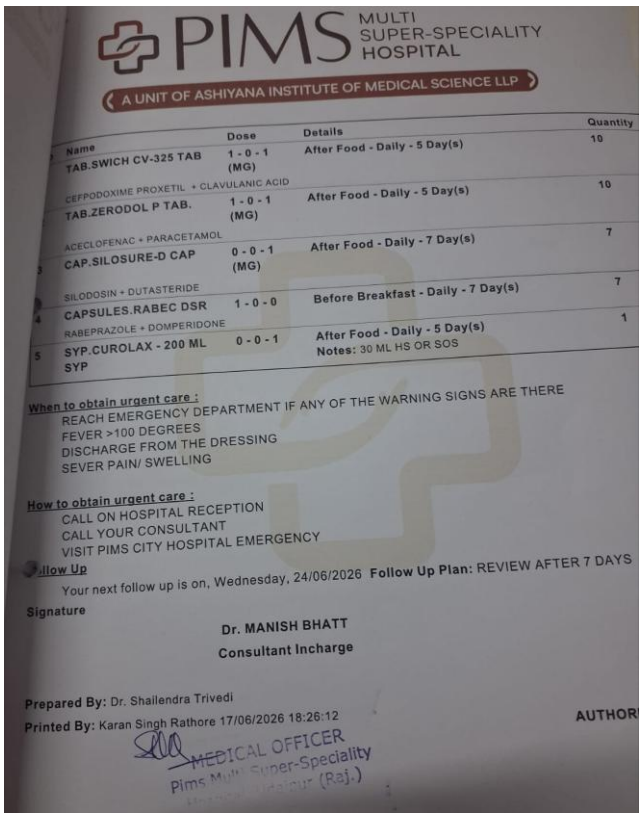
Strengths and Limitations

Strengths

- Objective diagnosis using uroflowmetry, BOOI, and cystoscopy.
- Complete perioperative and postoperative outcome.
- Clinically relevant uncommon presentation.

Limitations

- Single-patient case report.
- No long-term follow-up.
- No intraoperative photographs were available.



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	Name	Dose	Details	Quantity
1	TAB.SWICH CV-325 TAB CEFPODOXIME PROXETIL + CLAVULANIC ACID	1 - 0 - 1 (MG)	After Food - Daily - 5 Day(s)	10
2	TAB.ZERODOL P TAB. ACECLOFENAC + PARACETAMOL	1 - 0 - 1 (MG)	After Food - Daily - 5 Day(s)	10
3	CAP.SILOSURE-D CAP SILODOSIN + DUTASTERIDE	0 - 0 - 1 (MG)	After Food - Daily - 7 Day(s)	7
4	CAPSULES.RABEC DSR RABEPRAZOLE + DOMPERIDONE	1 - 0 - 0	Before Breakfast - Daily - 7 Day(s)	7
5	SYP.CUROLAX - 200 ML SYP	0 - 0 - 1	After Food - Daily - 5 Day(s) Notes: 30 ML HS OR SOS	1

When to obtain urgent care :
REACH EMERGENCY DEPARTMENT IF ANY OF THE WARNING SIGNS ARE THERE
FEVER >100 DEGREES
DISCHARGE FROM THE DRESSING
SEVER PAIN/ SWELLING

How to obtain urgent care :
CALL ON HOSPITAL RECEPTION
CALL YOUR CONSULTANT
VISIT PIMS CITY HOSPITAL EMERGENCY

Follow Up
Your next follow up is on, Wednesday, 24/06/2026 Follow Up Plan: REVIEW AFTER 7 DAYS

Signature
Dr. MANISH BHATT
Consultant Incharge

Prepared By: Dr. Shailendra Trivedi
Printed By: Karan Singh Rathore 17/06/2026 18:26:12
AUTHOR
MEDICAL OFFICER
Pims Multi Super-Speciality

CONCLUSION

Primary bladder neck obstruction should be considered in elderly male patients presenting with severe lower urinary tract symptoms even in the presence of normal prostate size. Comprehensive urodynamic assessment and endoscopic evaluation play essential roles in accurate diagnosis. Timely surgical intervention through bladder neck incision can provide substantial clinical improvement and prevent long-term complications associated with chronic urinary retention.

ACKNOWLEDGEMENT

The author expresses sincere gratitude to the patient and Doctor and family for providing informed consent for academic publication of clinical data. The author also acknowledges all healthcare professionals involved in diagnosis, surgical intervention, and patient care.

Ethics Statement

Ethical approval was not required for this single-patient case report according to institutional policy. The study was conducted in accordance with the ethical principles of the Declaration of Helsinki.

Patient Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying clinical information. Personal identifiers have been removed to protect patient confidentiality.

AI Declaration

Artificial intelligence-assisted language editing was used only to improve grammar, readability, and manuscript presentation. The authors take full responsibility for the scientific content, interpretation, and accuracy of the manuscript.

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Conflict of Interest: The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Author Contributions

Dr. Pooja Bagdi conceived the study, collected and interpreted the clinical data, performed the literature review, prepared the manuscript, critically revised the final version, and approved the manuscript for submission.

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