Case Report



# Urinary Bladder Hamartoma: First Reported Case in Germany and Literature Review of a Rare Benign Lesion

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# Urinary Bladder Hamartoma: First Reported Case in Germany and Literature Review of a Rare Benign Lesion

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**Abstract**

This article covers a rare, benign tumor called hamartoma of the urinary bladder, made up of disorganized but normal bladder tissues like urothelium, fibrous stroma, smooth muscle, and fat. It lacks malignant features such as cellular atypia or necrosis. Patients often present with lower urinary tract symptoms (LUTS) and hematuria. Bladder hamartomas have been linked to syndromes like Peutz-Jeghers. Treatment typically involves transurethral resection, with rare recurrence; partial cystectomy is occasionally needed. This case report details the first known case in Germany and the 16th globally, involving a young patient, and includes a thorough literature review.

**Keywords:** hamartoma; urinary bladder; gross hematuria; uropathology

## Introduction

Hamartomas are abnormally arranged growths of normal cells Indigenous to the organ, resulting in the formation of a mass or tumor [1,2]. They can manifest in various body parts, including the lungs, intestines, urinary bladder, skin, heart, brain, and breasts [1,3,4].

Although most hamartomas are asymptomatic, some can cause symptoms like painless hematuria, irritative voiding symptoms, or urinary retention if they grow sufficiently large [5]. The cause of hamartoma is still unknown, research has suggested that it may be associated with certain genetic disorders. [4,6–8]. The literature indicates that the tumor is rare, with only 15 published cases to date [4]. Notably, the rarity of this condition can lead to misdiagnosis; however, appropriate testing and diagnosis can result in proper treatment with positive outcomes. Here, we report the case of a 22-year-old male with bladder hamartoma presenting with LUTS. In addition, we provide a comprehensive review of the existing literature on this uncommon condition.

## Case Presentation

A 22-year-old man was admitted to our urology department with LUTS persisting for two months, significantly reducing his quality of life due to nocturia (more than three to four times per night) and pollakiuria during the day. A normal urinalysis with U-Stix ruled out urinary infection.

Ultrasonography of the bladder revealed an intravesical growth. Despite the absence of clinical risk factors such as smoking, exposure to carcinogens, or advanced age, the lesion was initially suspected to be urothelial carcinoma. However, urine cytology revealed no neoplastic cells.

Cystoscopy demonstrated a large mass between the trigone and the posterior bladder wall, closely localized to the ureteral ostia. Photodynamic diagnosis (PDD) with hexaminolevulinate was negative (Figure 1). A biopsy was performed in the initial session to exclude malignancy.

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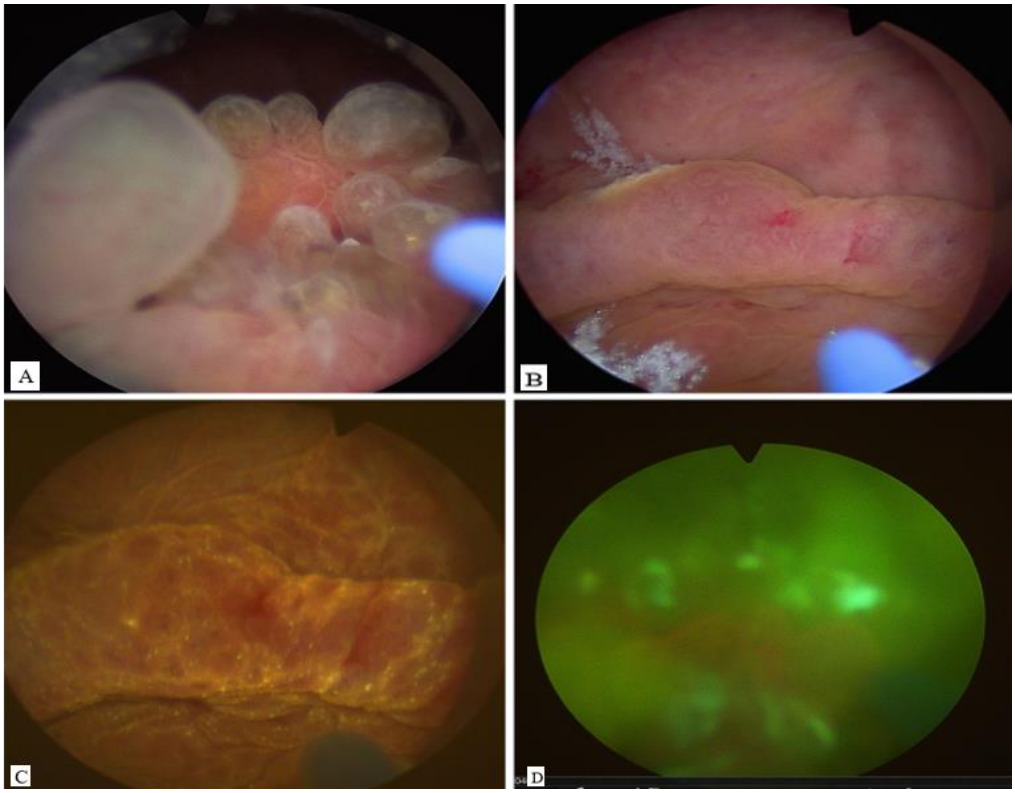


**Figure 1.** Transurethral images of the polypoid lesion in the urinary bladder under white light (A-C) and fluorescent cystoscopy with hexaaminoläuvlinat with a negative signal (D).

Histopathological examination revealed that the tumor was a hamartoma of the urinary bladder with pronounced urocystitis cystica and glandularis of the intestinal type, in addition to extensive intestinal metaplasia, partially abundant in goblet cells, and focal mucin extravasation. No evidence of mitosis, necrosis, or atypical features was detected in either the epithelium or the stroma (Figure 2).

C D

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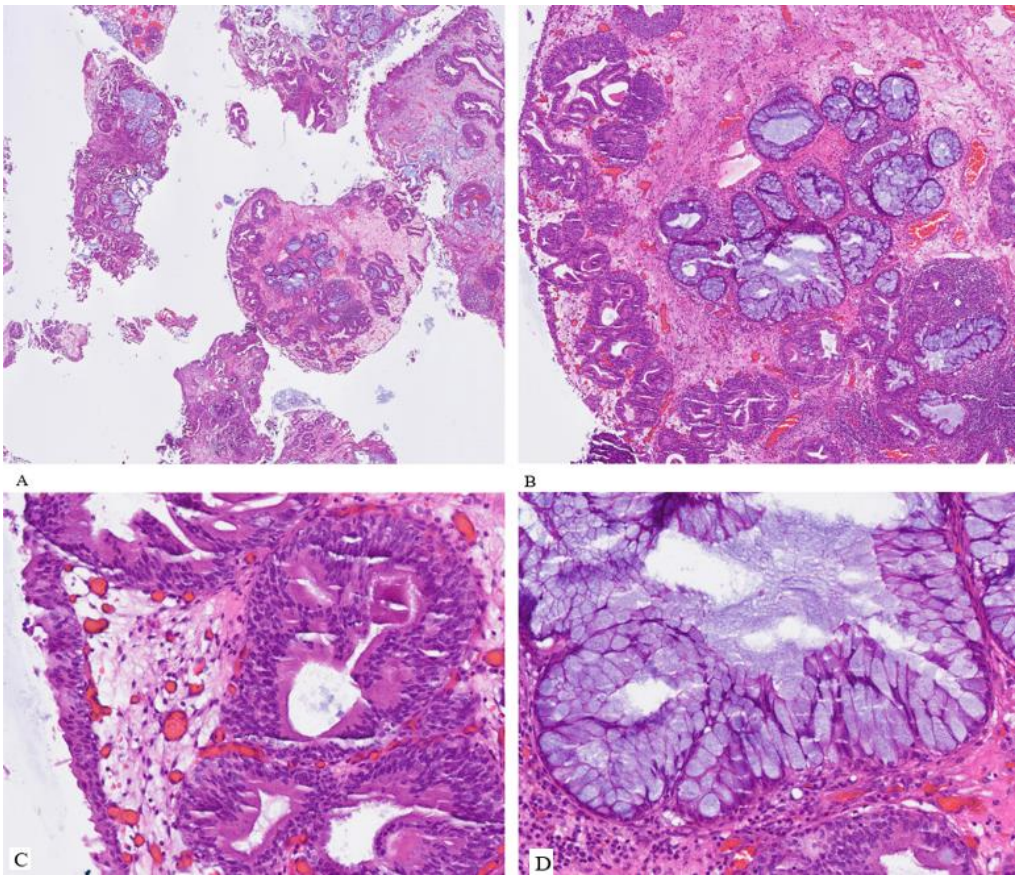


**Figure 2.** The lesion showed multiple fragmented tissue sections with irregularly shaped lobulesglandular structures within a fibro-muscular stroma (A, H&E stain, 4 × magnification) (B, H&E stain, 10 × magnification) (C, H&E stain, 20 × magnification) (D, H&E stain, 40 × magnification). Abbreviations: H&E, hematoxylin and eosin.

Based on this finding, the patient was diagnosed with urinary bladder hamartoma was therefore made. We partially excised the hamartoma by transurethral resection in the second session to achieve locally controlled status and to minimize the hamartoma mass at the bladder outlet, which led to lower urinary tract symptoms. Complete resection was impossible because of both sides' close localization to the ureteral ostia.

The patient experienced rapid relief of symptoms after resection, with no nycturia on the first day after removal of the foley catheter. Human genetic testing revealed no evidence of any associated genetic diseases. The residual mass of the hamartoma was stable on control cystoscopy after 2 months, without new symptoms or mass increase.

## Discussion and Literature Review

A comprehensive literature evaluation about urinary bladder hamartoma was conducted by searching reputable academic databases such as PubMed, Google Scholar, and the Cochrane Library.

The present study incorporated the terminology urinary bladder hamartoma, hamartoma of the urinary tract, and bladder hamartoma. Our search showed 92 results. After Screening and evaluating the abstracts of all papers, only 15 Case reports with urinary bladder hamartoma were found and could be included; therefore, 77 studies had to be excluded.

The first urinary bladder hamartoma was reported by Lathan et al. in 1963, with gross hematuria and pyuria as the leading clinical manifestations [9]. In the reported cases of hamartomas, including the present case, male patients were affected in 11 of 16 instances (67%), and the mean age at diagnosis was 25 years [4].

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The leading clinical presentation was irritative lower urinary tract symptoms (LUTS) with or without gross hematuria (9/16, 56%). Gross hematuria was observed in 25% of the patients (4/16) [4]. Remarkably, 31,2% of lesions (5/16) appeared on the background of specific syndromes, such as Peutz-Jeghers syndrome [6,10], Beckwith-Wiedemann syndrome [8], Goldenhar syndrome [7], and Loeys-Dietz syndrome (LDS) [4]. Other rare findings were associated with schistosomiasis (1/16) [11], prenatal detection via ultrasound (US) (1/16) [12], and incidental findings on abdominal imaging (1/16) [4].

The posterior bladder wall was the most commonly affected area (8/16, 50%), followed by the bladder neck (4/16, 25%), trigone (3/16, 19%), anterior wall (1/16, 6.2%), left lateral wall (1/16, 6.2%), and the bladder dome (1/16, 6.2%) [4].

Ota et al. and Pescia et al. examined urine cytology without significant alterations or dysplasias [3,4].

Histopathological examination revealed that most lesions had a typical morphologic appearance: a lobulated mass composed of a mixed proliferation of tubular-glandular, nested, or even papillary epithelial components intermingled with smooth muscle bundles; fibromyxoid stroma with plump fibroblasts; and sometimes adipose tissue. [6]. Intestinal metaplasia and hypervascularity were other potential features observed in these lesions [3,5,6].

All patients underwent successful treatment with complete excision via transurethral resection, partial cystectomy (3/16) [1,3,10], or transvaginal excision (1/16) [6]. Intravesical mitomycin was administered before histological examination because of the suspicion of malignancy [6].

No disease recurrence was reported, even after follow-up periods of up to 60 months via cystoscopy and ultrasound [4].

Possible differential diagnoses for urinary bladder hamartoma include cystitis cystica et glandularis, von Brunn hyperplasia, nested/microcystic variant of urothelial carcinoma, inverted urothelial papilloma, and nephrogenic adenoma, particularly in cases with unclear intravesical growth [13].

However, its rarity and benign pathological features, which resemble cystitis cystica et glandularis or von Brunn nest hyperplasia, may mask its identification, potentially leading to underdiagnosis or misdiagnosis.

From a clinical perspective, most reported cases in literature have been successfully treated with transurethral resection. However, in selected cases where complete resection is not feasible, close surveillance is essential to monitor potential progression or symptom recurrence. Given the benign nature of these lesions, aggressive interventions such as radical cystectomy should be avoided unless malignant transformation is confirmed.

## Conclusions

This report presents the first documented case of urinary bladder hamartoma in Germany and the 16th worldwide. While complete transurethral resection is the preferred treatment, partial resection may be a viable alternative for patients with challenging tumor locations, preventing the need for partial cystectomy. Recognizing the benign nature of bladder hamartomas is crucial to avoid overtreatment and ensure appropriate patient management.

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**Consent to Participate:** Informed consent was obtained from all individual participants included in the study.

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