Transurethral Resection of a Bladder Tumor in Pregnancy: Decidual Reaction Bladder Endometriosis

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Abstract

Background: Decidual reaction bladder endometriosis (DRBE) is exceedingly rare with few reported cases in the literature. It presents as a bladder mass during pregnancy, and may be accompanied by lower urinary tract symptoms. Histologic diagnosis is necessary to rule out primary bladder malignancy. We present a case of a bladder tumor identified during pregnancy. The mass was managed endoscopically and found to be DRBE, a rare benign entity.

Case Presentation: We present a 31 year old 15 weeks pregnant nonsmoker woman with a rapidly enlarging bladder mass concerning for primary bladder malignancy. Mass confirmed on formal renal/bladder ultrasound and in-office cystoscopy. After informed consent was obtained, the patient was taken to the operating room. A 5.5 cm bladder mass, with an atypical nodular appearance and minor calcifications, was identified. Transurethral resection of the mass was performed. Final pathology report showed florid endometriosis with stromal decidualization. Final diagnosis: pregnancy induced vesical decidualized endometriosis simulating a bladder tumor. Patient continued routine obstetrics follow-up, and has experienced no pregnancy-related complications. Three months after delivery the patient will follow up with outside urology provider for cystoscopy, and subsequent surgical management should it be necessary.

Conclusion: DRBE is a rare benign bladder mass that presents in pregnancy. It can grow rapidly raising concern for an aggressive primary bladder malignancy. Any bladder mass identified in pregnancy should undergo early, appropriate work-up given the potential risk for bladder cancer. After diagnosis, DRBE is most often managed conservatively. After delivery, should the patient experience ongoing urinary symptoms, medical and surgical treatment options are available. Overall, DRBE is considered rare, but should be considered in the differential diagnosis for any bladder mass presenting during pregnancy.

Keywords: decidual reaction bladder endometriosis, pregnancy, transurethral resection of bladder tumor, bladder malignancy

Introduction and Background

BLADDER ENDOMETRIOSIS is rare and occurs in only 1% of women with endometriosis.¹ Decidual reaction bladder endometriosis (DRBE), or ectopic endometrial tissue within the bladder that has undergone changes related to active pregnancy, is exceedingly rare, with few reported cases in the literature at the time of this publication.¹ Typically, DRBE presents with lower urinary tract symptoms (LUTS), and a bladder mass is eventually identified. In the pregnant patient, a bladder mass is problematic. It still requires early appropriate work-up and management, but is associated with increased risk, especially in the first trimester. In this report, we describe a case, and subsequent endoscopic management, of a bladder tumor in a young pregnant female patient.

Case Presentation

A 31-year-old 15 weeks pregnant nonsmoker woman presented with an incidentally identified bladder mass and LUTS. The mass was found on routine pregnancy ultrasound (US) and confirmed with a formal renal/bladder US (mass within the posterior aspect of the urinary bladder measuring ~1.5 cm, Fig. 1). The patient underwent cystoscopy observing the mass identified on US. A repeat cystoscopy 1 month later showed rapid enlargement concerning for an aggressive primary bladder malignancy. The patient was referred to our tertiary care urology center for further management. After thorough evaluation and an informed discussion, the patient was taken to the operating room for endoscopic exploration. On complete cystoscopy a large 5.5 cm bladder

FIG. 1. Formal bladder ultrasound revealing a 1.5 cm posterior bladder mass.

mass, with an atypical nodular appearance, minor calcifications, and a small central os, was identified along the posterior cephalad bladder wall. We attempted to cannulate this os, but noted immediately it was blind-ending and did not represent a fistulous tract. The decision was made to perform a transurethral resection of bladder tumor (TURBT). The mass was unroofed with several superficial cuts (Fig. 2). We continued the resection down to the level of detrusor fibers. The mass was well vascularized and appeared to be full thickness not allowing for a complete resection. The TURBT chips were evacuated from the bladder. Excellent hemostasis was achieved with loop cautery. A Foley catheter was placed, the patient was taken to recovery, and eventually discharged to home the same day. Foley catheter was discontinued at home without issue 2 days postoperatively. At 1 month, the patient noted significant improvement in urinary symptoms. Final pathology report showed florid endometriosis with

FIG. 2. An intraoperative view of the now 5.5 cm atypical, nodular appearing posterior wall bladder mass. Superficial mucosal layer resected using a monopolar resection loop.

stromal decidualization. Final diagnosis: pregnancy induced vesical decidualized endometriosis simulating a bladder tumor. Patient has continued routine obstetrics follow-up, and has experienced no pregnancy-related complications. Three months after delivery, the patient will follow up with outside urology provider for a cystoscopy and subsequent surgical management should it be necessary.

Discussion and Review of Literature

Identification of a bladder mass during pregnancy presents a clinical challenge for the practicing urologist. Differential includes benign polyp, leiomyoma, primary malignancy, placenta percreta, and endometriosis.² It is important to note there is a low, but nonetheless real, risk of bladder malignancy even in the young healthy pregnant patient. These patients often present in a nonspecific manner. Some are asymptomatic and present with a bladder mass identified on routine prenatal US. Others present with LUTS: dysuria, urinary frequency/urgency, bladder spasms, and/or hematuria. Unfortunately, voiding complaints are common during pregnancy. A urinalysis and culture should be performed to rule out urinary tract infection. Next, imaging should be obtained in the form of a transvaginal or formal renal/bladder US. This will often identify a bladder mass if one is present. If no abnormalities are identified, and voiding complaints continue or worsen, one should consider repeating an US at a later date, or move to direct bladder observation through cystoscopy. If a bladder mass is identified urine cytology should be obtained, and, depending on overall tumor appearance (high-grade) and characteristics (rapidly enlarging, positive cytology), definitive diagnosis through TURBT should be considered. The vast majority of bladder cancers in pregnancy are low-grade/stage, and TURBT can typically be deferred until after delivery. If TURBT is required (based on tumor appearance, growth rate, or positive urine cytology), it should be performed in the second trimester given the increased risk of general anesthesia in the first (birth defects, spontaneous abortion) and third (premature labor) trimester. Further surgical management, beyond diagnostic TURBT, should be addressed as part of a multidisciplinary panel.

In our experience, thoughtful use of transurethral endoscopic management confers appropriate surgical risk for mother and fetus, provides diagnostic information to guide management, and in some cases is therapeutic. In the case presented earlier, the bladder mass was resected, and a definitive diagnosis was provided: DRBE. Ectopic decidual reactions during pregnancy are the result of metaplastic changes in the uterine endometrium induced by progesterone.³ It is a benign entity, but DRBE may grow rapidly raising concern for an aggressive primary malignancy. Diagnosis requires a tissue biopsy. After initial diagnosis, unless symptoms remain severe, further intervention should be delayed until after delivery. After delivery, DRBE may regress, and no further management is required in that case. Should further management be required one may consider medical vs surgical therapy. First-line medical therapies include combined hormonal contraceptives and progestogens. They are considered safe, effective, and well tolerated.¹ Should medical management fail, or the patient wishes to undergo definitive surgical management, partial cystectomy is considered first line given the full thickness nature of bladder endometriosis.¹

On literature review, few published case reports of DRBE were identified. Faske and colleagues reported on an incidental finding of a bladder mass on US in an asymptomatic obstetrical patient.² Patient underwent a TURBT. DRBE was identified and no further management was needed. Patient experienced no pregnancy-related complications. Gn and colleagues reported a similar case; however, the patient presented with LUTS (dysuria, suprapubic pain) and flank pain.³ US revealed a bladder mass with unilateral hydronephrosis to the level of the bladder. A nephrostomy tube was placed, and the bladder mass partially resected through TURBT. Diagnosis was DRBE. One month after delivery an antegrade nephrostogram showed complete resolution of hydronephrosis and the nephrostomy tube was removed. Finally, Lambrechts and colleagues provided a detailed report on a 19 weeks pregnant woman who presented with intermittent hematuria.⁴ Vaginal examination identified a retropubic nodule that led to US showing a well-vascularized mass at the bladder dome concerning for primary urachal cancer. Owing to concern for uncontrolled bleeding and the malignant potential of the mass, the patient underwent an open exploration and partial cystectomy. Postoperative recovery was uneventful, with no adverse effects on the pregnancy. Overall, DRBE is rare, but should be considered in the differential when a bladder mass is identified in pregnancy.

Conclusion

DRBE is a rare benign bladder mass that presents in pregnancy. It can grow rapidly raising concern for an aggressive primary bladder malignancy. Any bladder mass identified during pregnancy should undergo early appropriate work-up given the potential risk of primary bladder malignancy. After diagnosis, DRBE can most often be managed conservatively until after delivery. At that time, medical and surgical treatments are available if the patient experiences ongoing urinary symptoms. Finally, although DRBE is especially rare it should be considered in the differential diagnosis for all bladder masses presenting in pregnancy.

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Abbreviations Used

DRBE = decidual reaction bladder
endometriosis
LUTS = lower urinary tract symptoms
TURBT = transurethral resection of bladder tumor

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