

## Case Report

# Urinary bladder inverted papilloma causing persistent hematuria in a pregnant woman: report of a case

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## Abstract

Bladder cancer is a common urological malignancy, mostly seen in men in the 6th and 7th decades. It is less common in women and very rare during pregnancy. Inverted papilloma is a tumor where surface epithelial cells grow into the underlying supportive tissue. It may be detected in the urinary tract and in particular in renal pelvis, ureter, bladder and urethra, and may mimic malignancy. Diagnosis and treatment is hard because of pregnancy and the best treatment option is not certain due to lack of experience. Here is a case of inverted papilloma in a pregnant woman which was followed up by a team of urologist, anesthetist, obstetrician and neonatologist.

## Key words:

Pregnancy, transurethral resection, bladder cancer, inverted papilloma

## Introduction

In all malignancies, bladder cancer ranks the 7th in males and 17th in females [1]. Bladder cancer is less common in women with a ratio of 3-4:1 [2,3]. Inverted papilloma (IP), which is evaluated in benign urothelial neoplasms, is a rare benign epithelial neoplasm of urinary tract [4,5]. It can be seen in every part of urinary tract but mostly in bladder [4,6]. Urological tumors are rare in pregnancy. To the best of our knowledge there have been 40 cases that were evaluated as bladder cancer during pregnancy, but it is not certain that how many of them were diagnosed as inverted papilloma due to limited knowledge (7). In this report we present the case of a pregnant woman reveal-

ing a mass in urinary bladder at 22 weeks of gestation which is eventually diagnosed as inverted papilloma.

## Case presentation

In the 2nd trimester obstetric ultrasonography (USG), 28x26x25 mm solid mass was detected in the right wall of the bladder in a thirty-three year old otherwise healthy pregnant woman (Figure 1). Bilateral maternal kidneys were normal and 22 week live fetus was also determined. There was no specific finding in the personal history of patient except for smoking (10 year/package). There were no macroscopic hematuria and urinary tract symptoms. Complete blood count, liver and kidney function tests were in normal ranges. However there was microscopic hematuria in urinalysis (+3 erythrocyte). Cystoscopic evaluation confirmed the mass. Urinary bladder cytology sample was reported as benign. Transurethral resection – bladder (TUR-B) was planned but the patient didn't accept an operation. Due to benign cytology of urinary bladder and benign appearance in magnetic resonance imaging (MRI) as seen in

## Article history:

Received 18 10 2014

Accepted 15 12 2014

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Figure 2, patient was followed-up by USG and urinalysis until birth. During USG controls, mass size did not increase. There was no systemic or obstetric complication during the follow-up period. Trans urethral resection was performed at the same session with Cesarean section at the 38th week of pregnancy. Term infant was 3150 gr and healthy. 2 cm of papillary tumor was resected from the right wall of the bladder. Pathologic examination revealed it to be “inverted growth pattern papilloma” (Figure 3). Patient was discharged 2 days after the operation without any complication. Three months after delivery, control cystoscopy was normal and the following control cystoscopy was planned 6 months later.

as vaginal bleeding and preliminary diagnoses are miscarriage risk, placenta previa and abruption of placenta etc. Most common cause of microscopic hematuria in pregnancy is cystitis [9]. For this reason antibiotics are commonly prescribed. Symptoms like dysuria, urgency and abdominal pain are very common during pregnancy because of the compression of the fetus to the bladder.

**Figure 1.**



*Ultrasonographic image of 28x26x25 mm solid mass detected in right wall of urinary bladder.*

## Discussion

Inverted papilloma may mimic bladder carcinoma even in pregnancy. However, there are limited studies in the literature reporting inverted papilloma during pregnancy [8]. Consequently it is difficult to quantify the incidence of inverted papilloma during pregnancy. The most common symptom is painless macroscopic or microscopic hematuria in pregnant women [1]. Dysuria, urgency and abdominal pain are seen less frequently [7]. In our case there was only microscopic hematuria. In these patient groups, there can be a delay in the diagnosis because the urinary symptoms are so common in pregnancy. Severe symptoms like hematuria are generally considered

**Figure 2.**

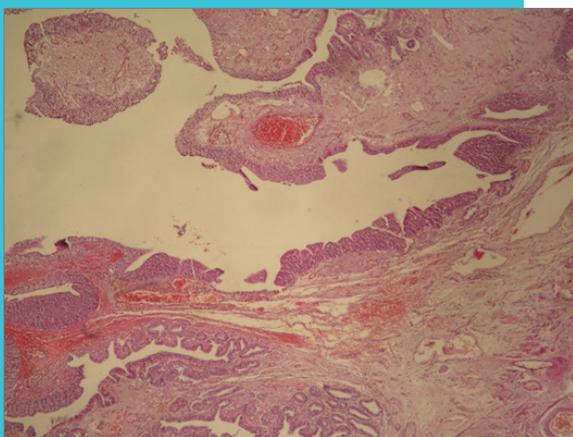


*Sagittal MR image of pregnant patient. The thickening of bladder wall spotlighted*

However patients with macroscopic hematuria or medical treatment resistant microscopic hematuria should be evaluated with urinary system ultrasonography and cystoscopy should be performed after USG if necessary. Most common diagnostic method is urinary ultrasonography [7,10]. In the literature there are cases that were diagnosed with intravenous pyelography (IVP) and cystoscopy [7]. Due to radiation risk of IVP and complications of cystoscopy, USG should be the first non-invasive diagnostic method. For pregnant women, staging should be performed with MRI instead of computerized tomography because of side effects of radiation [7]. IP, which is evaluated in benign urothelial neoplasms, is a rare benign epithelial neoplasm of urinary tract [4,5]. It can be seen in every part of urinary tract but mostly in bladder [4,6]. Although known to be benign, there are rare cases that show recurrence or malign transformation. According

to the literature, there is no side effect caused by IP during pregnancy (8). Most important differential diagnosis problem is the low-grade urothelial neoplasms that show endophytic growth pattern [11]. Some authors do not advocate frequent and long-term follow-up because of the histologic appearance, rareness of multiple foci, very low recurrence rate, and absence of progression. However they can be seen with urothelial carcinomas [12]. In a study by Yu et al, 10 out of 62 inverted papilloma cases occur with urothelial carcinoma simultaneously or consecutively. Also in the same study, it is reported that two cases had recurrence [6]. Most authors agree that patients with inverted papilloma must be considered at risk of recurrence. Thus, they should undergo cystoscopy and radiologic surveillance periodically and continue follow-up observations for at least 2 years [13].

**Figure 3.**



*Histopathology representing an inverted papilloma of the urinary bladder that was cystoscopically resected (Hematoxylin and eosin stain).*

According to the literature on the pathological diagnoses and treatment, TUR-B can be performed for pregnant women [10,14]. Follow-up procedure until birth can be an option for the cases if there is no invasion on the MRI. However, for this procedure, multidisciplinary approach with a team including of experienced urologist, anesthetist,

obstetrician and neonatologist and close monitoring are necessary. The treatment of low-grade transitional tumors can be delayed until birth with close USG follow-up [7]. It could be considered a risk factor for transitional cell carcinoma of the urinary tract and it is clinically prudent to exclude transitional cell carcinoma when IP is diagnosed and plan a careful follow-up scheme if the histologic diagnosis was definitive or doubtful. Careful follow-up is needed if the histologic diagnosis is definitive or doubtful. Flexible cystoscopy is recommended every four months for the first year and then every 6 months for the subsequent 3 years. Routine surveillance of the upper urinary tract following inverted papilloma of the lower urinary tract is not considered to be necessary [13].

In our patient tumor was detected in the 2nd trimester. She did not accept the operation during her pregnancy, the urine cytology was benign and there was no invasion in MRI. Consequently our patient was followed-up until birth with urinalysis and USG. Cesarean section was performed for birth and transurethral resection of bladder was also performed at the same session. Pathology was reported as “inverted growth pattern papilloma”. There are limited studies in the literature reporting inverted papilloma during pregnancy. Hernández Castrillo et al. reported a 41 years old case at 26 weeks of gestation presenting with gross hematuria. Diagnoses were made with cystoscopy and sonography. The tumor was managed successfully by transurethral electroresection under raquianesthesia and tocolytic agents were employed. There were no adverse effects on the pregnancies [8]. However, in our case, the patient did not accept any surgical intervention during pregnancy. In conclusion, bladder cancer during pregnancy is rare. IP is also rare making it impossible to provide an estimate of its incidence ratio. However the similarity of symptoms can lead to a delay in diagnosis. For this reason if hematuria is detected during pregnancy, urinary system should be examined carefully and differential diagnoses like cystitis, abruptio of placenta, placenta previa etc. should be kept in mind. Moreover, cystoscopy should be performed if necessary and bladder cancer risk should always be kept in mind.

#### **Conflict of Interest**

Authors declare no conflict of interest

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