

Bladder Mass in Newborn: Case Report and Review of Literature



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Benign proliferative lesions of the bladder are exceptional in neonates. We describe a case of a 3-day-old neonate, presenting with bloody meconium and sonographic diagnosis of bladder mass. Cystoscopic biopsies were performed and a diagnosis of polypoid cystitis was made. The patient was treated conservatively and the lesion healed during follow-up. We review the literature of other cases of neonatal bladder masses. *UROLOGY* 86: 1004–1007, 2015. © 2015 Elsevier Inc.

Benign proliferative lesions of the bladder are considered rare in children and exceptional in neonates. The presenting symptom of these lesions is sometimes hematuria, but it may include urinary obstruction and inflammation or be completely asymptomatic. The diagnosis is not always straightforward, even by experienced pathologists,¹ and in some cases the etiology can remain unclear. We describe a 3-day-old female neonate with a polypoid cystitis of the bladder and review the literature.

CASE REPORT

A full-term 1-day-old female neonate was admitted at the Neonatal Intensive Care Unit of our department presenting bloody meconium. Physical examination was unremarkable. Routine laboratory tests showed the following: red blood cell count, 3.9×10^6 per mm^3 ; white blood cell count, 18,100 per mm^3 (neutrophils, 59%; lymphocytes, 35%); hemoglobin, 14.5 g%; and platelets, 262,000 per mm^3 . Abdominal X-ray was negative. At observation, the abdomen was flat and nontender at palpation. A 6-Fr Foley catheter was put in for monitoring the diuresis. Samples of urine, blood, and meconium were collected for culture, and the patient was started on intravenous ampicillin and netilmicin. On day 3 of life, because of the persistence of rectal bleeding, an abdominal ultrasound was performed, which was negative except for a well-vascularized pseudopolypoid mass at the posterior wall of the urinary bladder measuring 7 mm

(Fig. 1). On day 4 of life, laboratory tests were repeated as follows: red blood cell count, 3.4×10^6 per mm^3 ; white blood cell count, 43,300 per mm^3 (neutrophils, 59%; lymphocytes, 35%); hemoglobin, 13.2 g%; and platelets, 339,000 per mm^3 . Collection of 3 urine samples for cytology testing was started for 3 consecutive days. On day 7, urine and meconium culture were negative, and urinary cytology displayed typical urothelial cells, several granulocytes, and some red cells. A cystoscopy was performed, showing a rose, grape-like polypoid lesion between the posterior and superior wall of the urinary bladder (Fig. 2), and 4 endoscopic biopsies were performed. The urinary catheter was removed the day after the procedure. At histologic examination, the samples had pseudopolypoid appearance. Edema and acute inflammatory infiltrate composed of neutrophilic granulocytes were evident in the lamina propria with exocytosis of the neutrophils from the venules (Fig. 3A,B). Reactive atypia of the overlying urothelium were also evidenced. The histologic features were suggestive of polypoid cystitis. The blood culture documented a candida albicans infection and intravenous amphotericin was started. After initiation of therapy for fungal infection, the patient's condition improved day by day and rectal bleeding disappeared. On day 14, the patient underwent a bladder ultrasonography, which showed that the mass had significantly reduced. On day 20, blood count was regular, ultrasound showed no sign of bladder lesion and the patient was discharged. Patient was followed up at 1, 3, and 6 months with abdominal ultrasound, which were negative.

COMMENT

In the newborn period, bladder masses are extremely rare, including rhabdomyosarcomas (RMS),²⁻⁴ inflammatory pseudotumor of the bladder,¹ hemangioma,⁵ nonspecific/reactive lesion,⁶ and polypoid cystitis/inflammatory pseudopolyp.⁶ The neonatal presentation of RMS has an incidence of approximately 4 in 1,000,000

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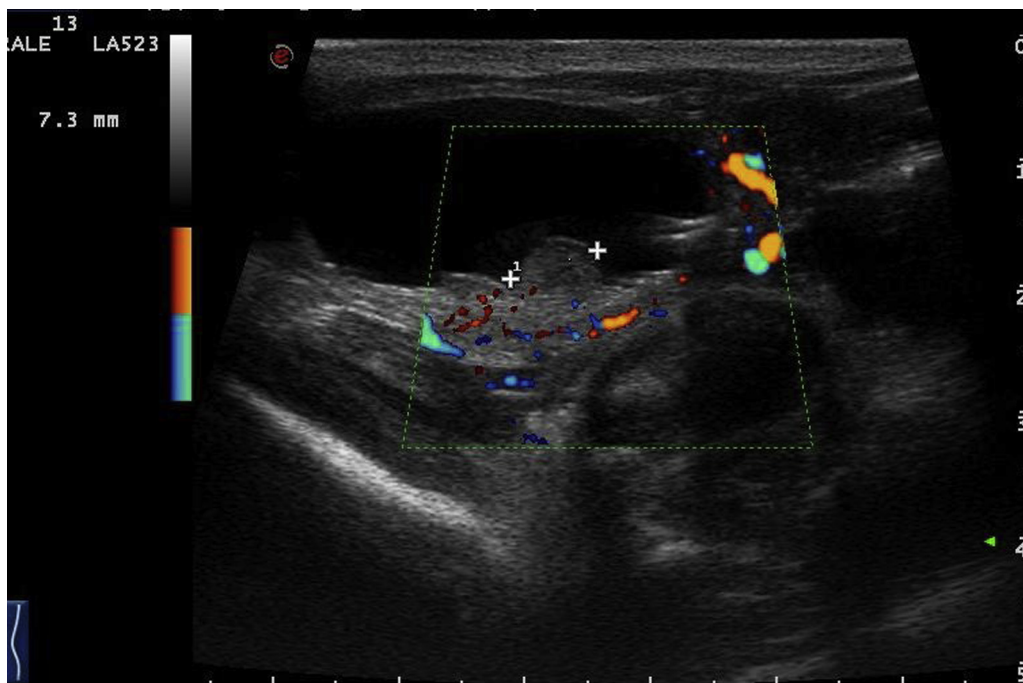


Figure 1. Bladder ultrasound shows a vascularized pseudopolypoid mass at the posterior wall of urinary bladder measuring 7 mm (maximum diameter). (Color version available online.)



Figure 2. Cystoscopic view of neonatal bladder lesion. (Color version available online.)

live births.⁷ The radiologic features of bladder RMS are not specific and benign mural masses of the bladder are difficult to differentiate from RMS.⁴ A precise diagnosis can demand additional clinical and pathologic examination. On the other hand, sometimes benign lesions of the bladder are often misdiagnosed as malignant lesion, even by experienced pathologists.¹ In fact, inflammatory pseudotumor of the bladder, a benign reactive proliferative lesion of myofibroblasts,⁸ was misdiagnosed for sarcoma in 4 of 38 cases described in pediatric age that underwent total cystectomy or pelvic exenteration; 2 had chemotherapy and radiotherapy.^{1,9} Just 1 case of

inflammatory pseudotumor has been described in newborns. The etiology of this entity in the bladder remains unclear. Inflammatory pseudotumor has been associated with urinary tract infection, previous surgery, or trauma, but in most patients no etiologic factor has been determined.^{1,2,9} Urinary bladder hemangioma should be included in the differential diagnosis of intravesical polypoid mass on ultrasonography in children. Although hemangioma is a common benign tumor occurring in various parts of the body, it is a very rare primary tumor of the bladder. We could identify only a single reported case of bladder hemangioma in a newborn,⁵ which underwent cystoscopic biopsies. If a hemangioma is suspected, we propose avoiding endoscopic biopsy or resection because of the risk of bleeding, which can be very difficult to control through a small pediatric instrument. The newborn case reported here had a polypoid cystitis, only the second described case in English literature in neonatal age.⁶ It was not sonographically or cystoscopically distinguishable from other localized lesions. All reported neonatal cases of bladder mass are summarized in Table 1. Differential diagnosis in the neonatal period with a reversible, reactive condition producing exophytic mucosal projection into the lumen of the bladder is impossible by imaging studies. In addition, blood and serologic tests are unremarkable for making a correct diagnosis. Pathologic examination of a biopsy specimen obtained endoscopically can allow a diagnosis even if cystoscopic biopsy in newborns could be inconclusive because they are too superficial and thus cannot be considered a without-complication procedure. In cases of hemangioma, biopsy can result in a profuse,

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