INTERNATIONAL JOURNAL OF SOCIAL HEALTH
https://ijsh.ph/index.php/rp
Volume 5 Number 6 June 2026
E-ISSN: 2984-7079

A 10 Months Old Girl Presented with Vaginal Bleeding : A Case Report

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Keywords:
Vaginal bleeding; children; yolk sac tumor; diagnostic; prepubertal.

Abstract

Vaginal bleeding is rare in prepubertal children and can be challenging to diagnose, requiring differentiation between infection, mechanical causes, or other aetiologies. A 10-month-old female was referred from her paediatrician with a complaint of vaginal bleeding with purulent discharge for three months prior to admission. She presented with abdominal distention for two days prior to admission and absence of urination for one day prior to admission. There was no history of trauma or abuse. Physical examination revealed abdominal distention and a mass-like, distended bladder on palpation without tenderness. Laboratory examination showed leukocytosis (18.7 × 10^3/L), hypochromic microcytic anaemia (8.30 g/dL), hyperkalaemia (6.8 mmol/L), decreased renal function (estimated glomerular filtration rate 3 mL/min/1.73 m^2), and metabolic acidosis consistent with acute kidney injury (AKI) failure. Urinalysis was normal. On the day of admission, abdominal X-ray showed an intra-abdominal mass suspected to be an umbilical mass or calcification. Abdominal ultrasound revealed ascites, an overdistended bladder with cystitis, duplex collecting system of the right kidney with moderate bilateral hydroureteronephrosis. Dialysis was planned due to AKI failure. One day after Foley catheter insertion, laboratory evaluation showed normal renal function, normokalaemia, and normal blood gas analysis. Dialysis was postponed. Voiding cystourethrography demonstrated an inflammatory process outside the uterus and bladder, chronic cystitis, and right duplex collecting system. Abdominal MRI revealed a solid sacrococcygeal mass. Laboratory evaluation showed leukocytosis (20.99 × 10^3/L), hypochromic microcytic anaemia (7.20 g/dL), normal β-human chorionic gonadotropin (β-HCG), and elevated alpha-fetoprotein (AFP >20,000 ng/mL). Urinalysis showed high leucocyte count (308/hpf) and bacteria >10,000/L. Laparotomy with biopsy revealed a germ cell tumour.

INTRODUCTION

Vaginal bleeding is rare in prepubertal children and diagnosis can be challenging, requiring differentiation between infection, mechanical causes, or other aetiologies (Bloomfield et al., 2023; Csorba & Elfrink, 2026; Drever et al., 2023; Howell & Flowers, 2016; McCaskill et al., 2018; Söderström et al., 2016). Guidelines on the management of prepubertal vaginal bleeding from professional societies are lacking due to the relatively uncommon nature of the presentation (Drever et al., 2023; French, 2025; Howell & Flowers, 2016; Söderström et al., 2016).

Prepubertal vaginal bleeding attributable to a presacral or pelvic mass poses a diagnostic challenge because the bleeding source may initially be mistaken for urinary haematuria, particularly in the absence of a visible genital lesion (Bloomfield et al., 2023; Zheng et al.,

2020). Progressive tumour growth may simultaneously compress the bladder outlet, distal ureters, and pelvic viscera, precipitating urinary retention, bilateral hydroureteronephrosis, and postrenal acute kidney injury (AKI) — a sequence that can overshadow the primary oncological diagnosis (Abou-Zeinab et al., 2024; Kovacevic et al., 2019). Only a limited number of cases describing vaginal bleeding as the initial manifestation of a sacrococcygeal malignant germ cell tumour (GCT) in infancy have been reported in the literature (Suárez et al., 2023; Nguyen et al., 2022; Ogunrinde et al., 2024), and none with concurrent AKI failure requiring consideration of dialysis (Ogunrinde et al., 2024; Abou-Zeinab et al., 2024).

The urgency of this research is based on several factors. First, vaginal bleeding in a prepubertal child is always abnormal and should never be dismissed as benign without thorough investigation; yet literature suggests that initial bleeding episodes are often attributed to vulvovaginitis or urethral prolapse, delaying diagnosis by weeks to months. Second, sacrococcygeal yolk sac tumours are highly aggressive but potentially curable with multimodal therapy (chemotherapy and surgery); diagnostic delay can allow tumour progression, metastasis, and reduced survival. Third, the concurrent AKI from urinary obstruction is reversible with prompt decompression, but without recognition of the underlying aetiology, the AKI may be attributed to primary renal disease rather than postrenal obstruction. Fourth, the absence of standardised protocols for evaluating prepubertal vaginal bleeding when a mass is not immediately palpable means that clinicians may not order tumour markers (AFP, β-hCG) or pelvic imaging until late in the diagnostic process. Fifth, documentation of rare presentations such as this case is essential for building the evidence base to inform future guidelines (Adachi et al., 2023; Mathew et al., 2023; Prasad et al., 2024).

The novelty of this research lies in four main aspects. First, this case represents the first reported instance of a sacrococcygeal yolk sac tumour presenting with the triad of: (a) persistent prepubertal vaginal bleeding for three months; (b) severe postrenal AKI (estimated glomerular filtration rate 3 mL/min/1.73 m^2) requiring consideration of dialysis; and (c) urinary tract infection complicating obstructive uropathy. Second, the rapid renal recovery (normal renal function within 24 hours of bladder decompression) provides clear evidence of reversible postrenal AKI in an infant—a physiological demonstration that obstructive nephropathy in young children can recover dramatically once the obstruction is relieved. Third, this case illustrates the diagnostic utility of systematic localisation of the bleeding source: normal urinalysis after catheterisation (clear urine) followed by recurrent vaginal bleeding (whilst urine remained clear) definitively established the vaginal origin of blood. Fourth, the markedly elevated AFP (>20,000 ng/mL) with normal β-hCG is diagnostic for yolk sac tumour, distinguishing it from other germ cell tumours and neuroblastoma—a pattern consistent with the literature but demonstrated here in the context of this unique presentation.

This report presents a case of a 10-month-old female with bloody discharge, acute kidney failure, and urinary tract infection leading to a malignant germ cell tumour. This case highlights the importance of a structured, multidisciplinary diagnostic approach to prepubertal vaginal bleeding.

METHOD

This is a single-patient case report based on clinical information documented during admission to a tertiary paediatric centre in Ngoerah Hospital, Bali, Indonesia. Data sources included the admission history, serial physical examinations, laboratory results, radiology reports, specialist consultations, operative notes, and pathology summary. The diagnostic work-up focused first on stabilisation of obstructive kidney injury and electrolyte disturbance, then on anatomical evaluation of bleeding and urinary obstruction. Recorded investigations included blood counts, renal profile, electrolytes, acid-base assessment, urinalysis, urine culture, abdominal radiography, abdominal ultrasonography, voiding cystourethrogram, magnetic resonance imaging, tumour markers (AFP and β-hCG), and surgical biopsy. Interventions included bladder catheterisation, monitoring for dialysis, blood transfusion, antibiotic therapy, and subsequent oncology referral for systemic treatment. Parental consent had been done for this case.

RESULTS AND DISCUSSION

A 10 month old female referred from a pediatrician with one day of anuria and a history of bloody-purulent discharge for approximately three months. The bleeding was barely noticeable initially, but gradually progressed to significant amounts staining the diaper. The mother also reported reddish urine was since 3 months prior to the hospital. There was no complaints of fever, pain when urinating. Abdominal distention was acknowledged in the last 2 days prior to hospital. Tenderness was denied. She has no history of trauma and abuse. Defecation was said to be normal.

From physical examination, vital signs were within normal limits, pale conjunctiva, abdominal distention, mass-like bladder was found on palpation, with no tenderness. Fresh blood was spotted on the diaper. Genitals appeared normal with no evidence of any mass, trauma, rash, or excoriation. Laboratory examination shown leukocytosis (18.7 10^3/L), hypochromic microcytic anemia (8.30 g/dL), hyperkalemia (6.8 mmol/L), hemostatic function were within normal limits, decreased renal function (eGFR 3 mL/min/1.73m^2), and metabolic acidosis depicting AKI failure. Foley catheter was failed to be inserted at the first attempt at Triage. Patient was admitted to Pediatric High Care Unit with diagnosis of observation of blood discharge from the vaginal or urethral, acute kidney injury stage failure due to renal dd/prerenal, abdominal distention suspected solid tumor intraabdominal, mild normochromic normocytic anemia due to bleeding, electrolyte imbalance, and well nourished.

On the 1st day of admission, abdominal X-ray shown an opacity of intraabdominal pressing towards the small bowel peripherally and cranially, suspected intraabdominal mass and round opacity at the right L5 paravertebral suspected umbilical mass or calcification. Abdominal USG shown ascites, overdistended bladder with cystitis, duplex collecting system right renal with moderate bilateral hydroureteronephrosis. The patient was planned to dialysis due to AKI failure.

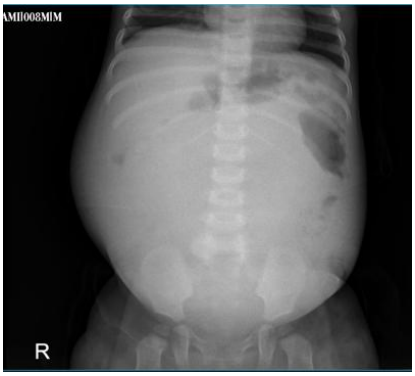

Figure 1. Abdominal X-Ray on the 1st day of admission showing opacity of intraabdominal pressing towards the small bowel peripherally and cranially, suspected intraabdominal mass and round opacity at the right L5 paravertebral suspected suspected umbilical mass or calcification.

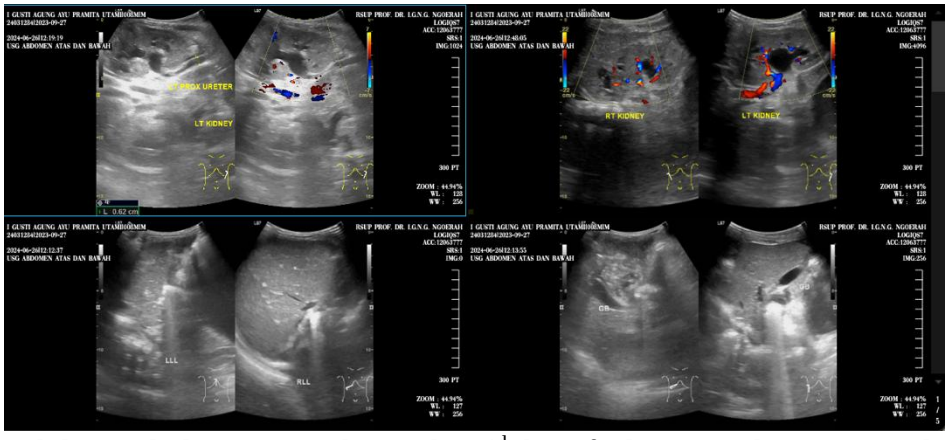

Figure 2. Abdominal ultrasonography on the 2nd day of admission showing overdistended bladder with cystitis, duplex collecting system right renal with moderate bilateral hydroureteronephrosis.

A day after foley catheter insertion, laboratory evaluation was done, normocytic normochromic anemia (7.3 mg/dL), CRP was elevated (24.4 mg/L), procalcitonin was slightly increased (0.32 ng/mL), improved renal function, hypokalemia, normal blood gas was found. Urinalysis was normal. Dialysis was then postponed. Therefore the diagnosis of AKI failure was concluded of post renal obstruction suspected of abdominal mass, and the blood was coming from vagina. During hospitalization, patient had fever of 38.1 C, bleeding and pus has stopped until the 4th day of admission. Patient was also consulted to Obstetric and gynaecology, therefore the cause of bleeding from reproduction was excluded.

On the 5th day of admission, there was fresh bloody discharge from vagina of 50 ml. Bleeding was stopped without medication. Urine was clear yellow in the urine bag. Urine culture resulted as no growth. Patient was treated with blood transfusion, Cefotaxime for 5 days and planned for voiding cystourethrography. Voiding cystourethrography was done on the 10th day of admission and shown inflammation process outside uterine and bladder, chronic cystitis, and right double collecting system. Abdominal MRI shown solid heterogenic mass at the pelvic to abdominal, pressing towards bladder, uterus, rectum, and distal colon to proximal ureter

causing moderate right hydronephrosis, suspected malignant sacrococcygeal mass, suspected immature teratoma dd/neuroblastoma, lymphoma.

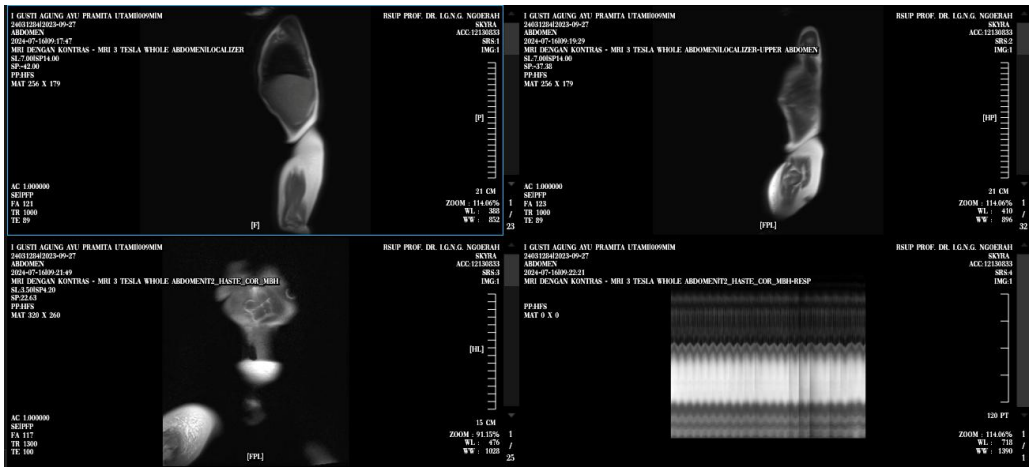

Figure 3. Abdominal MRI showing solid heterogenic mass at the pelvic to abdominal, pressing towards bladder, uterus, rectum, and distal colon to proximal ureter causing moderate right hydronephrosis, suspected malignant sacrococcygeal mass, suspected immature teratoma dd/neuroblastoma, lymphoma.

The patient was readmitted because of complex urinary tract infection and worsening abdominal distention. Laboratory evaluation showed leukocytosis (20.99 × 10^3/L), hypochromic microcytic anaemia (7.20 g/dL). Urinalysis showed high leucocyte count (308/hpf), nitrite positive, and bacteria >10,000/mL. The patient was referred to the haemato-oncology division. Tumour marker examination showed normal β-hCG and AFP >20,000 ng/mL. The patient was referred to paediatric surgery. Laparotomy with biopsy was performed, revealing a malignant germ cell tumour. Chemotherapy was commenced in August 2024.

This case illustrates an unusual but important presentation of an extragonadal malignant germ cell tumour in infancy. The diagnostic challenge was to determine whether the visible blood was urinary or vaginal in origin. The combination of a normal external genital examination, absence of haematuria on urinalysis after bladder decompression, and recurrence of visible vaginal bleeding despite clear urine in the catheter bag strongly supported a vaginal source. The subsequent identification of a sacrococcygeal mass and markedly elevated AFP redirected the diagnosis towards an AFP-secreting malignant germ cell tumour.

The case is consistent with the broader literature on red-flag features in prepubertal vaginal bleeding. Drever et al. (2023) emphasised that recurrent or heavy bleeding, associated discharge, systemic symptoms, and an abdominal or pelvic mass warrant urgent investigation for uncommon but serious causes. Assadi et al. (2024) described a seven-month-old infant with vaginal bleeding caused by an extragonadal vaginal germ cell tumour and elevated AFP, whilst Rwomurushaka et al. (2025) reported an eight-month-old infant with urinary retention caused by a sacrococcygeal yolk sac tumour. Compared with those reports, the present case is notable for the combination of recurrent vaginal bleeding and severe postrenal acute kidney injury requiring consideration of dialysis before rapid renal recovery following decompression.

The pathophysiological sequence in this patient is clinically important. Progressive growth of a presacral or sacrococcygeal tumour can compress the bladder outlet and distal

ureters, leading to urinary retention, bladder overdistension, and bilateral upper urinary tract dilatation. Rising intrapelvic pressure reduces renal blood flow and glomerular filtration, whilst prolonged obstruction causes tubular dysfunction, metabolic acidosis, and hyperkalaemia. The rapid improvement in renal function after catheter drainage strongly supports a postrenal mechanism. In addition, urinary stasis, impaired bladder emptying, and ongoing obstruction create favourable conditions for bacterial proliferation, explaining the later complicated urinary tract infection.

From a clinical perspective, this case supports several practical recommendations. First, any infant with recurrent vaginal bleeding should undergo systematic localisation of the bleeding source and careful screening for red flags such as abdominal distention, anuria, anaemia, and recurrent discharge. Second, when urinary obstruction is suspected, urgent decompression is both diagnostic and therapeutic. Third, pelvic imaging and tumour marker assessment, particularly AFP and β-hCG, should be obtained promptly when a mass is suspected. Finally, management should be multidisciplinary and include paediatric nephrology, paediatric surgery, radiology, and oncology. For malignant sacrococcygeal yolk sac tumours, multimodal therapy with chemotherapy and surgery is commonly required, and serial AFP measurement is important for monitoring treatment response and recurrence.

CONCLUSION

Any vaginal bleeding in prepubertal child should be considered abnormal. Prepubertal vaginal bleeding may be the first sign of an underlying pelvic malignancy and should never be dismissed, particularly when urinary obstruction or abdominal distension is present. Early localisation of the bleeding source, urinary decompression, comprehensive examination were critical to establishing the diagnosis and initiating treatment. The case we present adds to clinical understanding of a complex presenting symptoms leading to rare tumor in children.

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