Case Report

Case Series: Vaginal Rupture Injuries after Sexual Assault in Children and Adolescents

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A B S T R A C T

Background: Vaginal rupture after sexual assault is a rare but life-threatening occurrence requiring prompt recognition and treatment. Herein, we describe four such cases in children. Our purposes are to increase clinicians' awareness of the physical trauma that a sexual abuse victim can suffer and increase recognition that these victims require immediate trauma services.
Cases: Each patient had obvious hymenal and vaginal lacerations with a vaginal apical rupture injury and secondary acute blood loss. None of the four victims sustained infectious sequelae.
Summary and Conclusion: Providers should have a low threshold for managing sexual abuse victims as trauma cases when they have obvious hymenal and vaginal lacerations and genital bleeding, proceeding expeditiously to examination using general anesthesia when appropriate.
Key Words: Sexual abuse, Genital injury, Vaginal rupture

Introduction

Recently published guidelines for the medical assessment and care of children who might have been sexually abused are very helpful and outline how examinations should be conducted and the medical findings interpreted.[1] Vaginal rupture (colporrhexis) after sexual assault or abuse is a rare but life-threatening occurrence requiring urgency in evaluation and management. This injury is associated with significant hemorrhage, and prompt recognition and treatment are necessary to prevent hemorrhagic shock and mortality.[2] Although anogenital injuries are commonly described,[3–5] the medical literature contains little information regarding vaginal rupture injuries. According to Reddy,[6] these injuries typically involve the right fornix and might extend across the posterior fornix and through to the rectovaginal pouch of Douglas. Our purpose was to increase awareness of this injury in children by describing four cases of vaginal rupture after sexual assault in children who presented to our institution between 1984 and 2014.

Cases

Case 1

A 2-year-old female with vaginal bleeding was brought to the emergency department (ED) by her mother and the mother's paramour. On arrival, the patient was hemodynamically stable. A social worker was called within 15 minutes. Examination under conscious sedation in the ED revealed significant perineal injuries, and at this time (75 minutes from arrival) the gynecology service was notified. Because it was difficult to determine the extent of these injuries, the patient was expedited to the operating room for surgical management by the gynecology service.

Surgical findings were significant for ecchymosis of the external genitalia, a midline third-degree perineal laceration extending to a depth of 2.5 cm, transecting the hymen, perineal body, and anal sphincter (Fig. 1). This laceration extended internally toward the posterior fornix, and measured 4 cm in length. The posterior fornix was lacerated from 4 to 11 o'clock at the level of the cervicovaginal junction, and the underlying peritoneum was intact. The anal sphincter was reapproximated with interrupted sutures of 4-0 polyglactin (Vicryl) and 2-0 Dexon. The remainder of the third-degree laceration was closed in multiple layers with 4-0 Dexon sutures. On completing the perineal laceration repair, the posterior fornix rupture injury was observed using vaginoscopy and were hemostatic with the lacerated tissue edges anatomically opposed; this was left to heal by secondary intention. A full forensic examination was completed in the operating room.

The patient's estimated intraoperative blood loss was 25 mL, and her hemoglobin concentration declined from 10.5 to 8.3 g/dL. Her postoperative course was uncomplicated, and she was discharged home on hospital day 2. She received prophylactic antibiotics for chlamydia and gonorrhea in accordance with hospital protocol. Chlamydia and gonorrhea tests as well as HIV, rapid plasma reagin (RPR), and hepatitis B serologies were all negative. An interval examination under anesthesia and vaginoscopy at 3 months revealed appropriate healing of the injuries without evidence of vaginal stricture or stenosis. The mother's paramour was subsequently convicted of forcible rape.

All authors have nothing to disclose.

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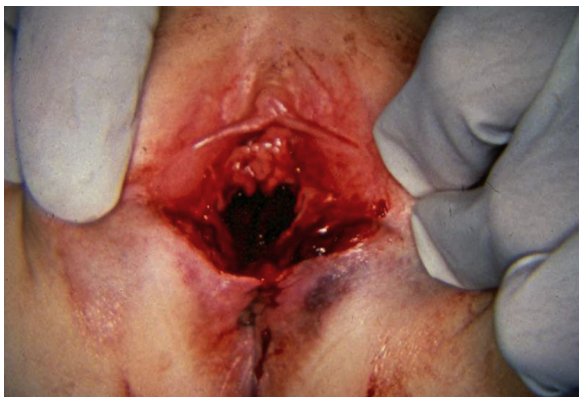

Fig. 1. Case 1. Third-degree perineal laceration with associated perianal bruising, transection of the hymen at 6 o'clock, and a vaginal laceration.

Case 2

A 7-year-old female child was found injured in a vacant apartment and brought to the ED. On arrival, her mental status was altered but she was arousable. She had bruising of her face, neck, and external genitalia, and her abdomen was tender and distended. A forensic examination was completed, and imaging studies were completed. The pelvic bedside examination was limited and revealed evidence of a perineal laceration associated with vaginal and perirectal bleeding (Fig. 2). The patient was transferred to the operating room for further evaluation (4 hours and 30 minutes after arrival in the ED).

Surgical findings were significant for a laceration transecting the hymen posteriorly and extending into the perineal body and the anal sphincter. A vaginal laceration at 8 o'clock extended internally to the vaginal apex with rupture of the posterior vaginal fornix from the 4 to 10 o'clock positions. This laceration penetrated through the peritoneum with secondary evisceration of the small bowel. Proctoscopy revealed a 1-cm anterior and a 2-cm posterior laceration of the anal mucosa extending toward the dentate line.

A laparotomy was performed through a Pfannenstiel incision. The small bowel herniation was reduced, the entire bowel was closely inspected, and a small nonexpanding hematoma at the base of the small bowel mesentery was identified. This was conservatively managed. The vaginal rupture injury penetrated through the peritoneum and was associated with a laceration of the broad ligament on the right side extending from the mid portion of the uterus to the right pelvic sidewall. A right ureteric contusion was noted, and the right iliac vessels were exposed but not injured. The peritoneum was reapproximated with 3-0 Dexon sutures. The apical vaginal defect was concomitantly reapproximated with interrupted sutures of 3-0 chromic sutures from a vaginal approach. The vaginal laceration was closed with interrupted 3-0 chromic sutures along the entire length of the vagina. Subsequently, the third-degree perineal laceration and anal sphincter were repaired in multiple layers with 3-0 chromic sutures. The perianal lacerations were repaired with simple interrupted sutures.

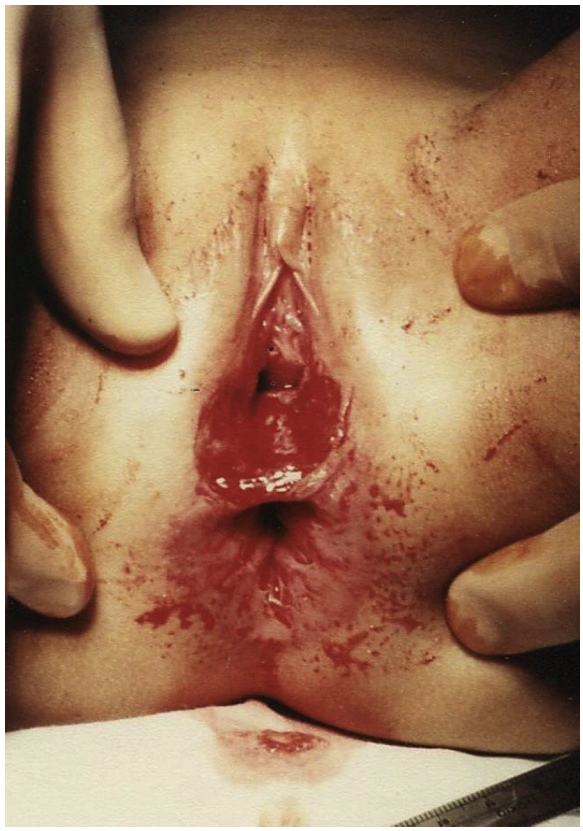

Fig. 2. Case 2. Laceration transecting the hymen and extending into the perineal body and capsule of the anal sphincter. Vaginal laceration at 8 o'clock, which extended internally to the apex of the vagina into the peritoneal cavity. Superficial perianal lacerations extending to the dentate line with a 1-cm laceration in the anterior anal mucosa and a 2-cm laceration in the posterior anal mucosa.

Additional forensic documentation and photo documentation took place under general anesthesia. The patient was transferred to the pediatric intensive care unit postoperatively. The patient's estimated intraoperative blood loss was 100 mL, and her hemoglobin declined from 11.3 to 10.6 g/dL. Her postoperative course was complicated by severe psychosocial distress necessitating an extended 22-day hospital stay. She received prophylactic antibiotics. Gonorrhea testing as well as HIV, RPR, and hepatitis B serologies were all negative. The male perpetrator was convicted of forcible rape and sodomy.

Case 3

A 12-year-old postmenarchal female adolescent was brought to the ED by ambulance after sexual assault. She was walking home when she was abducted and raped by a masked male stranger. On arrival, the patient complained of crampy lower abdominal pain. She was hemodynamically stable, and her abdomen was diffusely tender, most marked in the left lower quadrant with guarding but no rebound. A forensic examination was initiated per protocol. On pelvic examination, the external genitalia were blood stained and blood clots were egressing from the vagina. The gynecology team was consulted, vaginal packing was placed, and she was expedited to the operating room for a comprehensive evaluation.