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Fatal Anorectal Injuries: A Series of Four Cases

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ABSTRACT: Anorectal injuries associated with sexual practices have become more frequently reported in the last decade. Although anorectal injuries are commonly reported in cases of sexual abuse of children, fatalities are very rare. In this series of cases, we report a case of fatal child abuse resulting from anal intercourse. In addition, there are two cases of death in females as a result of heterosexual "fisting" or "handballing." The fourth case of the series is that of a homicidal injury produced by rectal impalement with a 31 inch length of threaded pipe.

KEYWORDS: pathology and biology, anorectal injury, sexual assault, homicide, autopsy, rape

The incidence of reported anorectal trauma including perforation of the rectum has been rising for the past 15 to 20 years [3,10]. Deaths due to untreated anorectal trauma resulting from sexual activity remain rare. The following four cases of fatal anorectal injuries represent a compilation of 10 years' experience of the authors.

Case Reports

Case One

This 21-month-old white female was brought to an emergency room where her mother stated that the victim had been experiencing "cold symptoms" for one week. She had vomited the day before and appeared to the mother to "become sicker" on the day of presentation. On arrival, the child was cold and rigor mortis was beginning to develop.

At autopsy, dehydration was evident with sunken orbits, a depressed anterior fontanelle and tenting of the skin of the abdominal wall. There were contusions and abrasions over the right side of the face near the hairline and contusions were present over the lower extremities. The anus measured 1.5 centimeters in diameter. There were two radial lacerations from the anus into the perineum

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measuring 1 and $\frac{1}{2}$ and $\frac{1}{2}$ inches in length. There also was an ulceration at the anal verge that was $\frac{3}{4}$ inches in diameter and $\frac{1}{8}$ inches deep.

On internal examination, multiple loops of distended small bowel were found, and all peritoneal surfaces were covered with a large amount of green-yellow purulent exudate. This exudate filled the greater and lesser peritoneal sacs and the pericolic gutters. A $\frac{3}{4}$ inch in diameter, transmural area of perforation and necrosis was found on the anterior rectal wall 2 inches above the pectinate line (Fig. 1). Microscopic examination of rectal sections revealed a transmural acute inflammatory process. The cause of death was peritonitis due to rectal perforation. The father subsequently confessed to having anal intercourse with the child.

Case Two

This 28-year-old female was found dead in a bathtub. At autopsy, there were no injuries except to her perineum. The vagina was lacerated and there was an erosion of the vaginal mucosa near the cervix with blood in the vaginal vault. The anus and rectum showed extensive lacerations that were especially prominent on the posterior and lateral aspects (Fig. 2). On internal examination, massive hemorrhage was found in the rectosigmoid region (Fig. 3). Aspiration of gastric contents and pulmonary edema were also noted. A vaginal swab done at the time of autopsy revealed the presence of sperm although rectal and oral swabs did not. Toxicology studies

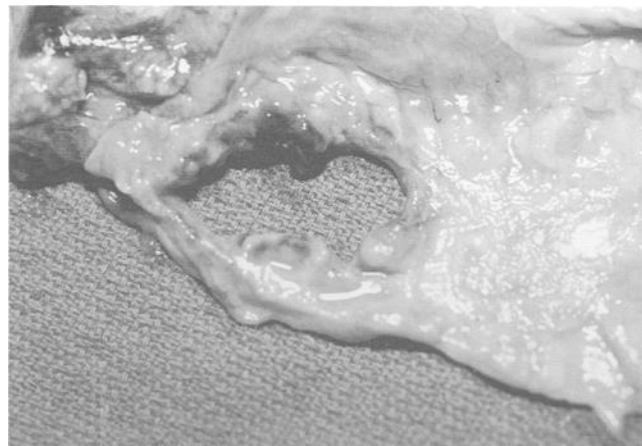


FIG. 1—Case 1. The mucosal surface of the rectum shows an area of perforation with a necrotic upper edge. This defect measures $\frac{3}{4}$ in diameter.



FIG. 2—Case 2. The anus is grossly dilated and shows multiple radial tears. The scale is 5 cm in length.

were negative. The cause of death was massive hemorrhage due to rectal and vaginal trauma. Her boyfriend was subsequently convicted of sexually assaulting her by forcing a fist in her vagina and rectum. He had placed her in the bathtub in an attempt to revive her.

Case Three

This 25-year-old female was found in her blood covered bed. Copious quantities of blood were also found on the floor as well as in the adjacent bathroom. On external examination of the body, there were two small abrasions present on her forehead. A small tear was found at the right ventral portion of the vaginal introitus. The anus was dilated and surrounded by extensive stellate lacerations (Fig. 4).

On internal examination, there was a large amount of free blood in the pelvis with extensive retroperitoneal hemorrhage dissecting upward and surrounding the kidneys. The serosa of the rectum and distal $\frac{1}{3}$ of the sigmoid colon was dark purple-gray. The mucosa was red-purple with dark purple spots, but close examination failed to reveal a laceration. Histologic exam of rectal sections revealed submucosal and periserosal hemorrhage. No sperm were identified on the oral, rectal or vaginal smears. A blood alcohol level of 400 mg/dL was measured, but no other drugs were detected.



FIG. 3—Case 3. The anus is grossly dilated and shows tears that are most prominent at the 3 and 9 o'clock positions. Scale length is in cm.

A male acquaintance was convicted of assaulting her by repeatedly inserting a fist in her rectum.

Case Four

This 21-year-old male was found lying face down in a creek. His ankles and wrists were bound with lengths of electrical extension cord, and his mouth was covered with adhesive tape. Protruding from his anus was a 20 inch segment of 1 inch in diameter, 31 inch in length threaded plumbing pipe with an elbow fitting on the exposed end. At autopsy, the pipe was found to perforate the posterior wall of the rectum, pass through two loops of small bowel in the lower abdomen and lodge in the parenchyma of the right kidney. Flakes of gray paint from the pipe were present throughout the penetration track. There was a 500 cc right perinephric hematoma and a hemorrhage behind the rectum at the site of perforation. There were also small bowel mucosal hemorrhages at the penetration sites. The remainder of the abdominal viscera were not injured. The distance from the anus to the renal hilum was 11 inches.

There were multiple contusions and lacerations of the face and lips. Two stamp abrasions were found on the right hand and the right upper arm and shoulder showed multiple linear abrasions. The ligature binding the wrists left deep furrows, but no furrows were found in the ankles. Two ligature furrows surrounded by patterned abrasions were found on the left anterior portion of the neck approximately $\frac{1}{4}$ inch apart. There was a contusion hemorrhage on both sides of the larynx under the perichondrium of the



FIG. 4—Case 3. Massive retroperitoneal hemorrhage is seen on the posterior pelvic wall. Scale length is 3 cm.

anterior thyroid cartilage, but there were no fractures of the cartilage or hyoid bone. Death was due to anorectal penetrating injury combined with ligature strangulation.

Discussion

Virtually all of the reported surgical repairs of anorectal injuries have been from cases of consensual sexual activity [10]. There is a single case report of the repair of a perirectal hematoma in a prisoner who was the victim of a homosexual anal rape [2]. Injuries due to anal intercourse in adults are fairly uncommon. Deaths resulting from injuries resulting from the purposeful introduction of an object in the rectum remain infrequent and unusual. As an example, Marti et al. [6], report four out of 22 rectal injuries repaired by their group over a ten year period were due to anal intercourse. Sohn et al. [10] report a series of eleven patients seen over a four year period who required surgical treatment of injuries sustained as a result of "fisting" or "handballing." Fist penetration of the anus and rectum as a sexual practice was first described in detail in the medical literature by Navin in 1981 [8]. "Fisting" or "handballing" are two of the slang terms used to identify this sexual act that involves introducing a heavily lubricated, clenched fist through the anus into the rectal ampulla. Insertion may continue past the upper rectum, and finally reach the sigmoid colon or, less frequently, the descending colon. Amyl nitrite, marijuana, LSD, mescaline, and alcohol have been reported as being used prior to

engaging in consensual fist penetration since they are believed by the participants to relax the anal sphincter [8].

In 1984, Reay and Eisele [10] reported the first fatality due to "fisting." Their female victim had a blood ethanol of 180 mg/dL. She was assaulted by a ship's crew member who escorted her to her stateroom after a shipboard party. Both of our deaths due to "fisting" were in females who were assaulted by males. One of these victims was very intoxicated with a blood ethanol level of 400 mg/dL. It should be noted that, although "fisting" has been reported as a common homosexual practice, the three reported fatalities have involved heterosexual couples.

Our case number one appears to be the only reported case where death resulted solely from injuries that occurred during the anal rape of a child. Although carefully evaluated in several large series of patients, severe anal damage as a result of rape appears in children to be quite rare. Specifically, in a series of 337 children evaluated for sexual abuse, only one patient, a 6-week-old girl, presented with rectal rupture and peritonitis [5]. In the eleven year experience of Black et al. [1], 147 of 617 patients evaluated for rape were under 16 years of age. Only 16 of the group of 147 had suffered significant anal injuries. In a series of 310 children evaluated for "sexual abuse," 104 had evidence of anal injury [7]. None of these children presented with an acute abdomen or required emergent surgical repair of injuries. Finkel [4] also describes two cases involving children with anal changes due to rape whose lesions healed without surgical intervention.

Fatal anorectal injuries are rare, but will remain undiagnosed unless the perineal and anorectal regions are thoroughly examined as a part of the forensic autopsy.

References

- [1] Black, C., Pokorny, W. J., McGill, C. W., and Harberg, F. J., "Anorectal Trauma in Children," *Journal of Pediatric Surgery*, Vol. 17, 1982, pp. 501-504.
- [2] Chen, Y. N., Davis, M., and Ott, D. J., "Traumatic Rectal Hematoma Following Anal Rape," *Annals of Emergency Medicine*, Vol. 15, 1986, pp. 850-852.
- [3] Falcone, R. E. and Carey, L. C., "Colorectal Trauma," *Surgical Clinics of North America*, Vol. 6, 1988, pp. 1307-1317.
- [4] Finkel, M. A., "Anorectal Trauma in Sexually Abused Children," *Pediatrics*, Vol. 84, 1989, pp. 317-322.
- [5] Hobbs, C. J. and Wynne, J. M., "Sexual Abuse of English Boys and Girls: The Importance of Anal Examination," *Child Abuse Neglect*, Vol. 13, 1989, pp. 195-210.
- [6] Marti, M. C., Morel, P., and Rohner, A., "Traumatic Lesions of the Rectum," *International Journal of Colorectal Diseases*, Vol. 1, 1986, pp. 152-154.
- [7] Muram, D., "Anal and Perineal Abnormalities in Prepubertal Victims of Sexual Abuse," *American Journal of Obstetrics and Gynecology*, Vol. 161, 1989, pp. 278-281.
- [8] Navin, H., "Medical and Surgical Risks of Handballing: Implications of an Inadequate Socialization Process," *Journal of Homosexuality*, Vol. 6, No. 3, 1981, pp. 67-76.
- [9] Reay, D. T. and Eisele, J. W., "Sexual Abuse and Death of an Elderly Lady by 'Fisting'," *American Journal of Forensic Medicine and Pathology*, Vol. 4, 1983, pp. 347-349.
- [10] Sohn, N., Weinstein, M. A., and Gonchar, J., "Social Injuries of the Rectum," *American Journal of Surgery*, Vol. 134, 1977, pp. 611-612.

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