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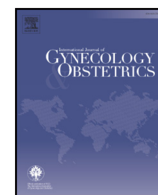

CLINICAL ARTICLE

Treatment of rape-induced urogenital and lower gastrointestinal lesions among girls aged 5 years or younger

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ABSTRACT

Objective: To evaluate outcomes after treatment of rape-induced urogenital and lower gastrointestinal lesions among young girls. *Methods:* In a retrospective study, data were assessed from girls aged 5 years or younger who were treated for sexual-assault-related injuries at the General Referral Hospital, Panzi, Bukavu, Democratic Republic of Congo, between 2004 and 2014. Data were obtained from review of charts, records of the mother's impressions and physical examinations, and photographic evidence. Elective surgery had been reserved for patients experiencing fecal and/or urinary incontinence. *Results:* Overall, 205 girls aged 5 years or younger presented with rape injuries: 162 (79.1%) had only mucocutaneous lesions, 22 (10.7%) had musculocutaneous lesions, and 21 (10.2%) had musculocutaneous lesions complicated by fecal and/or urinary incontinence. Among the 21 girls who underwent perineal surgery, two with fecal and urinary incontinence and perforation of the peritoneum of Douglas pouch were additionally treated by laparoscopy. Among 16 patients with fecal incontinence, the continence score had improved significantly at 10.4 months after surgery ($P < 0.001$). Concomitant urinary incontinence subsided for four of five patients but persisted for one who had a gunshot wound to the vagina. Cosmetic outcome was normal in 19 cases. *Conclusion:* For rape survivors aged 5 years or younger, a treatment strategy by which surgery is reserved for incontinent patients provided good cosmetic and functional outcomes.
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1. Introduction

The prevalence of sexual crime in the east of the Democratic Republic of Congo is related to the armed conflicts in the region. In these conflicts, rape is often used as a weapon. The high prevalence of sexual crimes signifies a systematic violation of fundamental individual human rights and creates a climate of impunity [1]. Child rape is defined as forced vaginal, anal, or oral penetration perpetrated on a child, whether or not genital lesions are thereby induced [2]. The prevalence is mostly unknown because of difficulties in reporting the cases and collecting data [3].

Conservative treatment is the widely recommended approach for superficial rape-induced lesions in children [4]. However, in the case of more substantial lesions, a treatment strategy including surgery is controversial [5].

The aim of the present study was to evaluate the outcome of treatment of genitourinary and lower gastrointestinal lesions among rape survivors aged 5 years or younger who attended the Panzi Hopital Général de Référence (HGRP), Bukavu, South Kivu, Democratic Republic of Congo.

2. Materials and method

In a retrospective study, data were assessed from consecutive girls aged 5 years or younger who were treated for sexual-assault-related injuries at the HGRP between January 1, 2004, and December 31, 2014. The study was approved by the ethical committee of the Catholic University of Bukavu (identification number UCB/CIE/10B/2014). All participants' legal representatives had given written consent for treatment and data collection.

The data recorded for each patient at presentation were age and sex, site of the crime (home or outside the home), and characteristics of the rapist (civilian or military, family acquaintance or not, and individual or multiple assailants). Fecal and/or urinary incontinence was assessed. The perineal lesions were described in medicolegal terms and classified as follows: mucocutaneous lesion; muscular disruption, including (or not) the sphincters; and the presence or absence of macroscopic blood.

All patients benefitted from supportive psychotherapy. Initial medical treatment included a sitz bath in potassium permanganate solution, and tetanus and hepatitis B vaccination. Patients who sought medical help within 72 hours of the rape were treated using a postexposure

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prophylaxis kit (Zidolam, GlaxoSmithKline). Patients presenting with isolated mucocutaneous lesions were discharged after assessment, whereas those with muscular lesions were hospitalized until they showed full recovery.

Patients affected by fecal and/or urinary incontinence were re-evaluated under general anesthesia after the emergency treatment was completed. Re-exploration under anesthesia was performed with parental consent, and aimed to fulfill the medicolegal description of the lesions and confirm an indication for surgical exploration. Photographic evidence of the perineal lesions was requested in all cases. Surgical intervention was delayed until signs of infection had subsided and the perineal lesions had macroscopically healed.

For surgical repair of the injuries, general anesthesia was used and the patient was placed on the operating table in a gynecologic position. The hymenal carunculae were snapped by two Allis clamps, and outwards traction was applied. The tissue immediately posterior to the dorsal mucosa of the vagina was incised horizontally under traction. The plane between the posterior vaginal mucosa and the anterior side of the anal canal, corresponding to the lacerated rectovaginal septum, was dissected from a superficial to deep level, until the apex of the anal canal laceration was exposed. The two retracted ends of the external anal sphincter were identified and skeletonized. The anal canal was repaired from the apex of the laceration down to the anal skin using separate stitches of Vicryl 2/0. The two ends of the severed external sphincter were approximated by two U stitches of Vicryl 2/0. The lacerated superficial perineal muscles were sutured by a few separate stitches of Vicryl 2/0. The posterior vaginal mucosa was reconstructed by separate stitches of Vicryl 3/0, starting at the apex of the laceration going superficially. The hymen was subsequently reconstructed by separate stitches of Vicryl 3/0. The skin of the posterior commissure (fourchette) was closed by separate Lembert sutures of Vicryl 2/0. Colostomy was performed selectively.

When urinary incontinence was suspected, a Foley catheter was inserted. Patients affected by both urinary incontinence and fecal incontinence underwent urethral repair after placement of a Foley catheter. The anterior vaginal mucosa flap was dissected from the urethral canal, and the urethral mucosa was repaired by separate stitches of Vicryl 3/0. The suburethral muscles were identified and sutured by U stitches of Vicryl 3/0. The anterior vaginal mucosa was repaired by separate stitches of Vicryl 3/0. The Foley catheter was kept in place for an additional 14 days. Patients who presented with laceration of Douglas pouch underwent laparoscopic exploration using a 4-mm, 70° cystoscope (Hopkins II, Karl Storz, Tuttlingen, Germany).

For the present descriptive study, the duration between treatment initiation and surgical procedure, operative time, blood loss, perioperative and postoperative complications, and hospital stay were evaluated. The cosmetic outcome was evaluated by the authors on the basis of photographic evidence, and staged as normal or abnormal depending on the absence or presence of a cicatricial deformity.

For all patients, fecal incontinence was assessed before and after surgery by the mother and staged according to Kelly's classification [6]. Urinary incontinence was assessed by the mother on the basis of soiling of the child's underwear, before and after surgery. At conclusion of treatment, mothers rated their satisfaction on a scale of 1 to 5, with 1 indicating "very dissatisfied" and 5 indicating "very pleased."

The study data were statistically assessed with SAS version 9.4 (SAS Institute, Cary, NC, USA). Values were reported as median (range). The distribution of fetal incontinence scores before and after treatment was compared by a nonparametric Wilcoxon rank test for categorical data. A two-sided P value of less than 0.05 was considered to be statistically significant.

3. Results

During the study period, 3457 patients aged younger than 18 years were treated for rape-related injuries at the HGRP. Nine (0.3%) of the patients were male. In total, 205 (5.9%) patients were aged 5 years or younger and constituted the study group. In this group, all individuals were female and 145 (70.7%) were admitted within 72 hours of the assault.

None of the study patients suffered cerebral lesions. Isolated mucocutaneous lesions were noted in 162 (79.0%) girls. Of these girls, 26 (16.0%) presented with a lacerated hymen membrane. All 162 patients were allowed to leave the hospital without further treatment after thorough assessment. No readmission was required in this group.

Among the 205 study patients, 22 (10.7%) had musculocutaneous lesions without incontinence and were hospitalized until they showed clinical healing. None of these girls required surgical treatment.

A further 21 (10.2%) patients had musculocutaneous lesions together with incontinence and required surgical treatment (Figs. 1–3). In this group of survivors of rape with extreme violence, the mean age was 42 months (range 18–60). The crime scene of the rape was outside the home (in the bush) for 18 (85.7%) girls and at home for the other 3 (14.3%) girls. The rapist was unknown in 14 cases and known in 7 cases (a neighbor in three cases, a servant in two, and a soldier in two). One girl reported being raped by two men. For 20 girls in this group, the median time between the rape incident and presentation at HGRP was 1 day (range 0–435); for one girl, the date of rape could not be retrieved.

All surgical procedures were performed electively. The median time between admission and surgical treatment was 10 days (range 1–36). Two patients underwent surgery on the day after admission, but they had been admitted 69 and 170 days after the rape incident, respectively. One girl with peritonitis was treated by antibiotics while awaiting elective surgery.

Among the 205 study patients, 16 (7.8%) presented with isolated fecal incontinence and underwent perineal and anal sphincter repair. Three (1.5%) girls (aged 3.5, 5, and 5 years) who presented with combined fecal and urinary incontinence underwent concomitant urethral repair. Two (1.0%) girls (aged 1.5 and 5 years) presented with combined fecal and urinary incontinence and perforation of the vaginal vault.

Fig. 1. Initial musculocutaneous lesion with fecal incontinence.

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