

EMERGENCY MANAGEMENT OF INJURIES SUSTAINED DURING CHILD SEXUAL ASSAULT

The emergency management of the acutely injured child is demanding and stressful for the practitioner and the entire health care team.



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Although child sexual assault has always been a dark and often painstakingly concealed fact of our human condition, the incidence of severe injury associated with these attacks appears to be increasing.¹ Child rape victims have a higher incidence of genital injury than their adult counterparts.² In addition, children are becoming victims at a younger age, with incidences of attempts at penetrative vaginal rape being well documented — even in young infants under one year of age.³ These severe and brutal assaults can result in serious and sometimes life-threatening injury to the young child.⁴ A systematic approach to the care of these individuals is essential in order to achieve a satisfactory outcome. Traditionally the management of child rape victims has focused on the forensic, psychosocial and transmissible disease aspects of the attack, but the child with a severe and sometimes life-threatening injury needs to be detected and promptly treated.

Children with severe injuries after sexual assault are usually referred to tertiary referral centres or specialists for their definitive care, but most cases initially present to general practitioners or district surgeons. In this article I concentrate on the emergency management of injuries sustained by child victims of sexual abuse. Els *et al.*⁵ have published a more thorough description of the approach to the overall management of the sexually abused child in the South African context.

It is mandatory that all medical practitioners have a working knowledge of the approach to this problem. In addition, it is the doctor's ethical and societal duty to take responsibility for the accurate and complete collection of forensic evidence and to be willing to participate in the medicolegal process in its entirety.

GOALS OF MANAGEMENT

The goals of management of these patients can be summarised as follows:

- acute phase management of injuries sustained
- prevention of transmissible diseases and pregnancy
- collection of forensic evidence
- management of social circumstances
- physical, social and psychological rehabilitation.

Referral of patient

The correct emergency care of the seriously injured child or infant sexual assault victim is vitally important. The patient should be referred to the closest tertiary care centre capable of dealing with the severely injured child and providing holistic care. This includes resuscitation, medical, surgical, psychological, social and rehabilitation components of care. This must include the ability to resuscitate and treat children with life-threatening injury. Unstable or ill patients should be transferred without delay. It is preferable that a senior practitioner experienced in the management and assessment of child abuse cases should be in charge of

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Acute phase management of injuries sustained

The initial assessment should focus on the patient's general condition. Signs of shock, such as tachycardia, pallor, poor peripheral perfusion and hypotension, should be sought. Life-threatening bleeding can occur in the abdominal cavity. When hypovolaemic shock is diagnosed, urgent restoration of intravascular fluid volume and resuscitation according to the principles of Advanced Trauma Life Support (ATLS) should be carried out. Standard peripheral venous access with an appropriate sized catheter should be obtained. In the event of severe shock and cardiovascular collapse it may be necessary to obtain intraosseous access. Crystalloid resuscitation in up to 3 boluses of 20 ml/kg body mass can be administered. In the event of severe shock

and exsanguination this should be followed by administration of whole blood or packed red cells.

Any source of external bleeding should be controlled by the application of a gauze dressing and local pressure. Plugging the vagina, rectum or any wound is not advisable as the injury can be exacerbated and evidence can be altered, and it creates the opportunity for lost swab foreign bodies. Definitive genital examination should be deferred until the patient is stable. Most patients are in pain and distressed. The administration of intravenous analgesics such as morphine (0.1 mg/kg) or an equivalent greatly facilitates the assessment and resuscitation. It should be given as soon as the patient is sufficiently stable. Little credence is given to the notion that the administration of opioids renders the examination of the abdomen unreliable. Indeed, the treatment of pain usually makes the child more co-operative and enhances the clinical examination of the abdomen.

Perineal and genital examination

Most child rape victims can be satisfactorily examined without the need for general anaesthesia or administration of powerful sedatives. In certain cases where the examination cannot be deferred, a sedative such as midazolam (0.1 mg/kg IV) is acceptable.⁵ Infants are best examined in the knee-chest supine position and older children in the lateral knee-chest position. Where there are extensive perineal tears, ongoing unexplained bleeding, a suspicion of a foreign body or abnormal abdominal signs, examination under general anaesthesia may be necessary.

Perineal injuries

Approximately 40% of perineal injuries in South African children are due to sexual abuse.⁶ Most serious injuries in paediatric rape or sexual assault victims are genital. The young child is easily subdued and serious non-genital injury is uncommon. The nature and distribution of genital

injuries vary with the sexual assault and the age of the child.

These injuries are usually graded according to the traditional 'obstetric classification' (Table I). In older children, in whom there is less disproportion between the size of the assailant's penis and the child's genital structures, minor injuries usually result. These include vulvar bruising and abrasions, mucosal tears of the introitus, hymen and vaginal walls, or bruising of the anal canal and mucosal tears (first-degree tears). In more severe cases, usually in younger children or in more brutal attacks, the vaginal injury may extend into the adjacent tissue and may involve the perivaginal and transverse perineal muscles but spares the sphincter complexes (second-degree tears). Most girls presenting with severe perineal injuries after sexual assault are under 5 - 6 years of age. In the infant subjected to a concerted attempt at penile penetration or forced insertion of a foreign body, rectovaginal disruption usually occurs. In these cases there is complete disruption of the posterior fourchette, perineal body and anal sphincters, with a tear extending for a variable distance into the vagina and rectum. Once these muscular defences are breached there is a serious risk of vaginal vault, proximal rectal and intra-abdominal injuries.⁶

Most first-degree tears will heal satisfactorily without the need for suture. In selected circumstances, definitive primary suture will provide quicker and superior healing and is probably warranted. Iodine vaginal douches are not recommended for treatment or prophylaxis in prepubertal girls.

Second-degree tears can be sutured, either primarily (if presenting early) or secondarily, without the need for covering colostomy.

The most critical decision involves the need to perform diverting colostomy. Colostomy is usually indicated in the following circumstances:

- complete perineal disruption with common rectovaginal channel
- all third-degree tears

Table I. **Grading of perineal injuries**

First degree	Skin lacerations involving the introitus, anus or perineal skin
Second degree	Lacerations extending onto perirectal or vaginal tissues, sparing anal sphincters
Third degree	Compound lacerations involving anal and/or vaginal walls and sphincters

Table II. **Prophylactic antibiotics after sexual assault**

Erythromycin suspension	30 - 60 mg/kg/day po in 4 doses for 7 days
and cephalexin	100 mg/kg/day po in 4 doses for 7 days
or	
Ceftriaxone	60 mg/kg IMI stat
and metronidazole	7.5mg/kg/dose po 8-hourly for 7 days

Table III. **Antiretroviral prophylaxis after child rape**

Zidovudine	180 mg/m ² /dose po twice daily for 28 days
and	
Lamivudine	4 mg/kg/dose po twice daily for 28 days

- injuries presenting late with established sepsis or evidence of necrotising fasciitis
- late occurrence of rectovaginal fistula.

In cases where a colostomy is indicated, definitive surgical repair is performed when the perineal wounds have healed completely and inflammation has subsided. It is usually performed approximately 2 - 4 months after the injury.

Abdominal injuries

Injury to intra-abdominal organs is rarely a result of a sexual assault, but if not detected can cause death from blood loss or later from septic intra-abdominal sequelae. We treated a rape victim with an injury to the posterior fornix of the vagina, with multiple loops of small bowel prolapsing through the perineum. In experienced hands abdominal examination is usually

sufficiently sensitive to detect signs of intraperitoneal injury. In cases where there is abdominal tenderness, a plain radiograph and ultrasound examination are recommended. Prompt referral to a surgeon for laparoscopy or exploratory laparotomy is essential.

Injuries in males

Boys are, without doubt, frequently the victims of various forms of sexual abuse, but most large studies in different countries show that girls are the victims of rape 1.5 - 3 times more frequently than boys.⁷ In the study by the Red Cross Children's Hospital group, only 13% of victims were male.³ In a large French study 14% of victims were male.⁸ Anal rape in a male infant causing severe injury with sphincter disruption is rare. All infants requiring perineal repair seen at the Johannesburg University hospital complex have been female. This may be a reflection of different patterns of injury

after anal and vaginal penetrative rape in early life. Compared with the vagina, the anorectum appears to have greater elasticity and compliance and it seems that attempts at anal penetration, even in young children, can occur without the victim suffering any severe disruptive injury. Boys do suffer anal tears (usually mucocutaneous without major sphincter injury) after anal rape but very rarely require diverting colostomy and perineal repair.

Prevention of transmissible diseases and pregnancy

In postmenarchal females, a careful menstrual history and baseline pregnancy test should be performed to exclude pre-existing pregnancy, especially in sexually active adolescents. Emergency contraception using a progesterone-only regimen is recommended in cases of unprotected vaginal rape.

It is widely recommended that antibiotics are administered after a sexual assault, although even these are not reliably administered by emergency department staff.⁹ Most experts agree that treatment directed towards *Neisseria gonorrhoeae* and *Chlamydia trachomatis* is necessary. Acceptable antibiotic regimens are shown in Table II.⁵

The use of antiretroviral therapy directed towards the prevention of HIV and hepatitis viruses is much more controversial.¹⁰ Adherence to 28-day antiretroviral prophylaxis regimens is low¹¹ and the benefit has not been clearly defined by scientific study. Many have called for a reasonable approach to this problem, determined by the degree of perceived risk. South Africa is undoubtedly a high-prevalence area and international research has shown that the prevalence of sexually transmissible diseases and hepatitis virus positivity is higher in convicted sex offenders than in the general population.¹² The greater degree of tissue damage occurring in child rape victims must also predispose to greater risk of HIV transmission. Real rates of HIV transmission in paediatric rape are unknown but in the study of child rape victims at Red Cross Children's

Hospital a 1% seroconversion rate was noted.³ This occurred despite the fact that in the early part of the series patients were not tested and in the latter half of the study most victims received antiretroviral prophylaxis.¹³ The real risk in our environment is therefore much higher than 1%. It seems prudent therefore to provide antiretroviral prophylaxis to all children suffering penetrative rape, especially if accompanied by severe injury or if multiple offenders were responsible for the attack (Table III). This treatment should be supervised and monitored by a practitioner familiar with the administration of these drugs to small children. A baseline HIV antibody test should be performed to exclude pre-existing infection. If negative, the test should be repeated in 3 - 6 months.

Collection of forensic evidence

The proper collection of forensic evidence after child sexual assault is too complex to consider for this article.

The most senior person available, preferably one experienced in the examination of these cases, should be responsible for this essential task. New kits allowing for more efficient and secure collection of these specimens are now available. Great care must be taken to ensure that the chain of evidence is not broken and that labelling and transportation of specimens is meticulous. It is essential to report the case to your local Child Protection Unit of the South African Police.

Management of social circumstances

Frequently the perpetrator of these offences is a family member or known to the victim's family. Disrupted families are so common as to be almost the norm. Under these circumstances the child's safety cannot be assured. Early involvement of social workers and other community organisations is essential. The child should be discharged only when a safe receiving environment can be assured.

Rehabilitation

The physical, social and psychological rehabilitation of these unfortunate children will continue for the duration of their lives, often with little formal or institutional support. It is vital for health care practitioners to facilitate this process as much as possible.

References available on request.

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Awareness of the spectrum of injury is the single most important factor.

A systemic approach is essential.

Manage acute injuries first according to ATLS principles.

Institute therapy for prevention of transmissible disease and pregnancy.

Collect the necessary forensic evidence.

Manage the social circumstances.

Institute long-term support and rehabilitation.