Injury in Women Who Are Raped

What Every Critical Care Nurse Needs to Know

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Sexual assault is considered the silent, violent epidemic. However, many critical care nurses are unaware of the injury patterns that may indicate that their patient has been sexually assaulted. In addition, critical care nurses are often uncertain how to proceed when caring for someone with a suspected sexual assault. This article provides both background information about sexual assault and guidance to critical care nurses on how to manage this difficult situation. Key word: Sexual Assault.

[Dimens Crit Care Nurs, 23(2): 62-68]

Sexual assault is an epidemic that is both silent and violent. The National Violence Against Women (NVAW) survey found that of the 8000 women surveyed, 18% had experienced an attempted or completed rape at some time in their lives. In the year prior to the survey, 2% of the participants reported being raped, physically assaulted, or both.[1] Considering the number of women who experienced multiple assaults per year, an estimated 876,000 rapes and 5.9 million assaults are perpetrated against US women annually. Of those 6.8 million rapes and physical assaults, 2.6 million will result in physical trauma to the woman and 792,200 will result in the survivor receiving some type of healthcare.[1] Therefore, nurses working with acutely and critically ill trauma patients will undoubtedly care for patients who have been sexually assaulted.

Routine screening and examination for sexual assault is not a standard component of critical care nursing. Most rape examinations are performed in the emergency department (ED). ED nurses have a heightened awareness of the problem of sexual assault because they routinely screen for domestic violence as part of their admission assessment and frequently care for survivors of sexual assault. However, because of the prevalence of violence against women in particular, critical care nurses working in trauma intensive care and general critical care units need to enhance their knowledge of sexual assault. In particular, they need to understand the basic epidemiology of injury following rape, the typical pattern of genital and nongenital injuries that occur, and the nursing care strategies that are essential for this patient population. With this knowledge, critical care nurses can recognize injury patterns that occur with sexual assault and ensure that patients receive the appropriate assessment and care.

The purpose of this article is to provide information relevant to critical care nursing practice about the assessment and management of young adult and adult women who are sexually assaulted. In particular, the type and location of injuries that are commonly seen after sexual assault and rape will be described. Nursing care strategies to assist nurses in critical care practice will be described to enable nurses to manage these patients with skill and sensitivity.

UNDERSTANDING INJURY FROM SEXUAL ASSAULT

Rape is defined as forced sexual intercourse (vaginal, anal, or oral penetration, including incidents where the penetration is from a foreign object) including both psychological coercion as well as physical force. Attempted rapes are included in the definition, which includes both male as well as female victims and both heterosexual and homosexual rape. In addition, attempted rape includes verbal threats of rape.[1,2] Sexual assault describes a wide range of victimizations, separate from rape and attempted rape. Sexual assault includes unwanted sexual contact between the victim and offender, may or may not include force, and does include grabbling or fondling. Sexual assault also includes verbal threats.[1,3]

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RATES OF INJURY

The reported incidence of both anogenital and nongenital injury in adolescent and adult females resulting from sexual assault ranges widely depending on the assessment technique used by the investigators. Nongenital injury rates are reported in the range of 30% to 76%, and genital injury rates in the range of 5% to 87%.[4] A general head-to-toe assessment is generally performed to identify nongenital injury. In contrast, a variety of examination techniques are available to assess for genital injury (Table 1). To better understand the incidence and pattern of injury that result from sexual assault, a general overview by anatomic region will be provided.

INJURIES TO THE HEAD, FACE, AND NECK

Healthcare providers and law-enforcement authorities have questioned whether nongenital injuries are markers for sexual assault. Tintinalli and Hoelzer used a retrospective chart review to evaluate 372 female sexual assault victims seen by a rape-counseling center.[5] They found that at least one anatomic area was injured in 32% of the women. There were 148 anatomic sites of injury in 118 patients, with 81% of the injuries classified as mild (bruises, scratches, abrasions, and erythema), 17% moderate (lacerations, large hematomas, fractures), and 0.6% severe (major skeletal fractures or trauma that required operative repair). The most common injuries were to the face and neck. Because they found more nongenital injuries than genital, the investigators recommended that face/head/neck injuries be considered characteristic of the rape syndrome rather than genital injuries.[5] Other investigators have also found that injuries to the face, head, and neck are common during sexual assault and occur in approximately 25% to 33% of women who are assaulted.[6-8] Although examination techniques have improved since these studies were completed, the findings still raise the important issue that injuries to the face, head, and neck should heighten the suspicion of a healthcare provider that a sexual assault may have occurred.

INJURY TO THE TRUNK AND EXTREMITIES

Generally, expert clinicians suggest that injuries to the trunk are more often intentional injuries and injuries to the extremities are more often accidental or unintentional. This clinical rule of thumb is particularly helpful when assessing injury in the general trauma population, when injuries in the center of the body (head, neck, trunk) may indicate sexual assault.[5,7] However, extremity injury in female patients who have been sexually assaulted is fairly common as well. A study by Penttila and Karhumen of both female adults and children found that almost one-half of the patients had an upper extremity injury and more than 40% had a lower extremity injury. Generally injuries to the extremities are minor and include bruising, abrasions, and minor lacerations of the soft tissues.[6]

GENERAL GUIDELINES FOR NONGENITAL ASSESSMENT

American Medical Association (AMA) Sexual Assault Guidelines point out a range of nongenital areas that can be injured by a variety of mechanisms.[9] Common injuries include:

- forcible signs of restraint such as rope burns on the wrist or ankles
- mouth injuries that occur because of gagging
- mouth injuries from forced oral sex such as a torn frenulum (small fold of mucus membrane connecting two structures) of the lip and a torn frenulum beneath the tongue
- petechiae of the face and conjunctiva due to choking
- broken teeth, swollen jaw or cheekbones, and eye injuries from being punched or slapped
- muscle soreness or stiffness of the shoulder, neck, knee, hip, or back from being restrained to allow for sexual penetration
- abrasions and bruises on the upper limbs, head, and neck.

INJURY TO THE EXTERNAL GENITALIA

The use of colposcopy is generally accepted to be the most sensitive examination technique to identify both

TABLE 1 Types of Examination Methods for Survivors of Sexual Assault

Examination Method and Description	Rates of Genital Injury (%)	Positive Aspects	Negative Aspects
Visual Inspection: During gross, direct visualization the healthcare provider performs a standard gynecologic and forensic examination unaided by magnification or staining techniques	5-53[4,8,20,24]	Simple exam; does not require equipment other than that used during a standard gynecological exam Inexpensive Does not require extensive training in the use of advanced technology	Does not allow for visualization of microscopic injuries Does not provide photographs of forensic evidence Is associated with missed injuries
Toluidine blue is a nuclear stain that adheres to areas of abraded skin and microlacerations	40-58[26,27]	Inexpensive Does not require extensive training in the use of advanced technology May highlight injuries not visible on visual inspection	May cause mild burning when applied May cause a mild local sensitivity Not as sensitive as colposcopy; does not allow for identification of as many injuries as colposcopy
Colposcopy: Examiner uses instrument to illuminate, magnify, and photograph external and internal gynecological structures. Current colposcopes are composed of an internal light source and a binocular system that can magnify structures across a range of 0.6–40 times the image.[12,16]	53-87[4,10,11,16]	Used for adults and children Provides photographic evidence of injury Has a light source and binoculars that enable identification of microscopic injury Locates the highest number of injuries Anatomic structures and parameters such as the hymenal opening can be measured Repeated exams are unnecessary; photographs or digital images can be shown to experts[4,12,16,17]	Equipment can cost up to $20,000 Requires additional training and computer skills

external and internal genital injuries.[4,10-12] The first description of a forensic exam using a colposcope appeared in 1981 in a report by a Brazilian physician.[13] With a colposcope, the examiner was able to identify 11.8% more cases of sexual assault than were found by visual inspection in 500 patients. Other physicians and investigators soon replicated these findings.[14-16] For example, Lenahan and others studied 17 sexual assault survivors and compared findings from the colposcopic technique to gross visualization alone. They found that the colposcope documented trauma in 9 of 17 cases (53%) whereas gross visualization documented trauma in 1 case (6%).[16]

Among the most frequently injured anatomic sites during sexual assault are structures that are components of the external genitalia (Figure 1). The posterior fourchette is commonly regarded as the most frequent site of injury, with injury rates as high as 70%.[11] The posterior fourchette, also known as the posterior commissure of the vagina, is a tense band of tissue that connects the two posterior ends of the labia minora. It extends inferiorly as a low tissue ridge that fuses in the middle.[17-18] The AMA Sexual Assault Guidelines emphasize the importance of examining the posterior fourchette, noting that vaginal injuries due to sexual assault are typically accompanied by pain or bleeding with small tears in the posterior fourchette, and erythema, abrasions, or bruising.[9]

The labia minora also has a relatively high rate of injury (53%).[11] The labia minora are two folds of tissue that lie between the labia majora. The labia majora consist of two folds of skin and adipose tissue that form the lateral borders of the vulva.[18] The labia minora enclose the vestibule, an almond-shaped area above the posterior fourchette and below the clitoris. The external urethral meatus (urinary opening) is located within the vestibule.[18] Other areas that are often injured are the hymen and fossa navicularis, a shallow depression located on the lower portion of the vestibule, inferior to the vaginal opening and extending to the posterior fourchette.[17,18] In a recent study using colposcopy with females ages 14 to 19 following sexual assault, the investigators found that 36% had tears of the posterior fourchette, 32% had redness of the labia minora, and 28% had redness of the fosse navicularis. No injury was found in 36% of the subjects.[19]

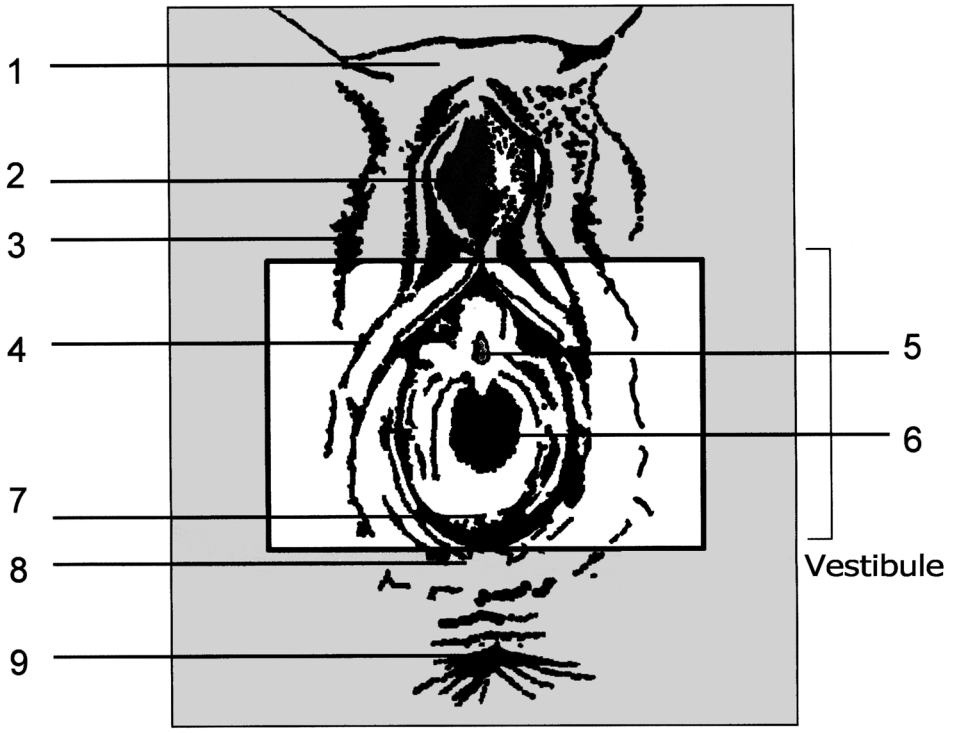

Figure 1. Illustration of the external female genitalia with the anatomical areas identified that are important during the external examination. The center white area is the vestibule. (1) *mons pubis*; (2) clitoral hood; (3) labia *majora*; (4): labia *minora*; (5): urethral orifice; (6) hymenal orifice (vagina); (7) *fossa navicularis*; (8) posterior fourchette; (9) anus.

Although it is important to contact a qualified sexual assault forensic examiner to complete the examination of any patient who has been assaulted, it is equally important to be aware of the external injuries that may indicate sexual assault. Critical care nurses frequently insert urinary catheters in women following traumatic injury. During the insertion process, inspect the external structures to determine the presence of injury with particular attention to the posterior fourchette and labia minora. If you suspect that the patient has been assaulted, contact a forensic examiner immediately. Also, be certain that all clothing from the victim is kept to give to the forensic examiner. The clothing may contain vital evidence.

INJURY TO THE INTERNAL GENITALIA

Although not as common as injury to the external genitalia, internal injuries also occur during sexual assault. One research team reported that in 311 adolescent females and women, 13% had cervical injury and 11% vaginal injury.[10] Most internal injuries are relatively minor and do not require medical care, although approximately 1% to 3% of women are hospitalized for their injuries, which may even require surgical correction.[20,21]

ANAL INJURY

Anal and rectal injuries are known markers for marital rape. Although in married couples the most frequent type of forced sex is vaginal intercourse, the second most frequent type is forced anal intercourse.[22] In a study of 311 rape victims, 55 reported anal contact.[10] Therefore, if you suspect your patient has been sexually assaulted, it is important to recognize that they may have anal injury. Be sure to report any anal pain or bleeding from the rectum.

In short, the available research studies identify a pattern of injury that seems to be associated with sexual assault, including injuries at the posterior fourchette, labia minora, or fossa navicularis. Although forced anal intercourse occurs less often than forced vaginal intercourse, it is also associated with injury.

DIFFERENTIATING FROM INJURIES THAT OCCUR WITH CONSENSUAL SEX

Women of reproductive age who have been sexually active may have lacerations in the vagina, but they tend to be higher in the vagina after consensual sex than those who are raped.[4] However, an absence of rigorous studies with large sample sizes limits our knowledge about injuries following consensual sex. Injury after consensual sex usually occurs in approximately 10% of women.[11] The injuries also tend to be minor and limited to a single site such as a small area of erythema, several petechiae, or a single tear. In a recent international study, the investigators followed 107 sexually active women, aged 18 to 35 years, over a 6-month period to

assess for changes in vaginal and cervical appearance.[23] By using colposcopy, 56 alterations were found during 314 inspections. The most common types of lesions were petechiae (30 of 314), erythema (9 of 314), abrasions (5 of 314), and edema (4 of 314). The incidence of these conditions was highest when the inspections followed intercourse in the previous 24 hours or after tampon use.

DOCUMENTING INJURY

Injury is defined as any tissue trauma visible on inspection including tears, ecchymosis, abrasions, redness, or swelling (TEARS).[10] The TEARS classification system uses the following types of injury to organize genital injury:

1. **Tears** are any breaks in tissue (skin and mucous membranes) integrity including fissures, cracks, lacerations, cuts, gashes, or rips.
2. **Ecchymosis** is skin or mucous membrane discoloration due to the damage of small blood vessels causing bruising or black and blue areas.
3. **Abrasions** (excoriations) are the removal of the epidermis from skin or mucous membranes.
4. **Redness** is a descriptor for erythematous tissues that are abnormally inflamed due to irritation.
5. **Swelling** is edematous or transient engorgement of tissues. By using these terms consistently, nurses can specify the exact type of injury and all speak the same injury language, which increases the accuracy of documentation and decreases any confusion about the type of injury.

Although experts estimate that approximately 30% to 40% of patients have no nongenital injury,[7,9,24] the more clear the documentation of injury the better. Note the exact size, shape, and location of each injury and use a traumagram (diagram of the figure of a patient to show the extent and location of injury) to document your findings. The AMA Guidelines provide the following example of the specificity needed in the documentation: "Five red bruises are observable on the patient's upper right arm. They are oval shaped and approximately one inch in diameter. Four are located on the outer portion of the upper arm, and one is noted on the inside of each upper arm."[9(p11)]

MANAGING THE NURSING CARE

Care of the sexual assault survivor is complex and requires specialized training in posttraumatic stress disorder, forensic nursing, and trauma nursing. However, critical care nurses are frequently in situations in which, if they are knowledge about sexual assault, they can improve the level of care for these complex patients. While untrained nurses should not attempt to perform a sexual assault forensic examination, knowledge about the exam and the pattern of injuries that may occur is essential for nursing practice in this age where violence against women is epidemic.[1]

Critical care nurses may have questions about how to proceed if they suspect that a patient has been sexually assaulted (Table 2). Remember that only a small percentage (estimated at 17%) of known sexual assault survivors seek attention from a healthcare provider.[9] Therefore, all health providers need to be aware that any patient they examine may have been assaulted at some time in their lives, and possibly prior to the hospital admission for a traumatic injury. However, it is also important to remember that although most women will be injured during a sexual assault, a significant proportion will have no injuries. In 1992, Patel, Courtney, and Forster argued that if a procedure such as a colposcopy is required to support a women's report of alleged rape, we risk of doubting women's histories unless demonstrable injuries occur.[25] The same danger exists with using nongenital injury to predict rape and sexual assault. If we demand that nongenital injuries be present to support alleged rape, we give the message to women that they must sustain physical injuries in order to be believed. None of these alternatives are acceptable. Caution and consultation from experts are the best strategies.

In the acute care setting, if you suspect that your patient has been sexually assaulted, a high priority is to create a safe environment for the patient. Conversely, there is a need to protect rapidly decaying physical evidence that will establish that a crime has occurred. Remain with the patient, speak quietly, and move slowly to reinforce that the environment is safe. Ask the patient's permission to call a rape crisis advocate and contact the emergency department for further advice on how to handle the situation. Do not ask the patient for details about the assault unless you are a trained forensic examiner. Again, be sure to keep the clothing intact for the examiner. A well-meaning but detailed discussion of the assault may further traumatize the patient. In addition, the patient's perceptions may be disrupted because of the stressful situation, and extensive probing may create discrepancies between the patient's statements and the medical record.[9]

SUMMARY

The majority of women who are sexually assaulted will have sustained some type of physical injury. The sooner they are examined by a qualified sexual assault forensic examiner, the more likely they will receive the care they require for long-term health. Although acute and criti-

TABLE 2 Answers to Questions About Sexual Assault to Guide Critical Care Nursing Practice

Question	Answer
1. What should I ask my patients so that I can find out it they are victims of domestic violence?	Several questions are generally used to screen for domestic violence: • *Have you felt unsafe in a relationship in the past year?* • *Do you feel unsafe in a current relationship?* • *Have you ever had any trouble with domestic assault or violence?* If yes, answer, "You are safe now and we have people who can help you here."
2. What do I do if I suspect that one of my patients has been sexually assaulted?	If you suspect your patient has been abused, talk to her empathetically and supportively. Make her feel as safe as possible. Ask her what hurts on her body. Call in assistance such as the social worker in your area or a community advocacy group. Let her know you believe her and will find trained providers to help her, such as police, social service, and advocates. Avoid leading questions; questions by healthcare providers should ask for information for medical diagnosis and treatment only. Document statements made by the patient and the injuries you see on her body objectively.
3. If I suspect abuse, what do I do with the patient's clothes?	Preserve the scene by making sure the patient and the physical evidence (ie, her clothing) stay intact until a forensic nurse can do the complete exam. To preserve evidence, clothing should be bagged separately in brown paper bags rather than plastic bags. Use care when removing the patient's clothes so as not to cut the clothing where there are preexisting tears or stains. Document the details of your patient's appearance—examination of clothing, demeanor, and injuries is the beginning of the forensic exam.
4. What injuries might I be able to see that would lead me to suspect sexual assault?	Injuries found on any part of her body: facial, neck, trunk, and extremities. The injuries may be noticeable only when a head-to-toe physical exam is performed. Assist the patient in undressing. The patient may be unaware of bruising, abrasions, or points of tenderness until a "hands-on" physical exam is done. Be aware of a "pattern of injuries" in sexual assault or domestic violence patients. Intentional injuries tend to be toward the center of the body and accidental (unintentional) injuries more toward the extremities. In victims of domestic violence, injuries are most often inflicted where they can be easily hidden. The injuries may be in different stages of healing. Use caution as you document injuries to remain as objective as possible; note the size, color, and type of injuries without further interpretation of those injuries.
5. Are there other symptoms that might make me suspicious of a sexual assault?	Other symptoms may include emotional, psychological, or behavioral signs. For example, your patient may be withdrawn, tearful, fearful, or anxious. She may be angry and shocked after the assault or she may hide her feelings by being very subdued and controlled. Vague complaints can also make one suspicious of domestic violence; in particular, abdominal pain, "soreness everywhere," or symptoms of sexually transmitted diseases may suggest further assessment is needed.
6. How can I obtain help for my patient if she is emotionally upset about a rape or sexual assault?	Call for assistance from the social worker in your department, the advocacy group in your community, and/or the psychiatric department in your facility. Recognize that the rape trauma syndrome has two phases (acute and long term) and reactions and disturbances are complex and varied.
7. What are my legal responsibilities if I suspect sexual assault or domestic violence?	As a healthcare provider, it is your responsibility to contact the police if you suspect a violent crime has been committed, whether it be a gunshot, burn, sexual/domestic violence, or other type of assault. Upon contacting the police, you only need to state that you have a potential victim of violent crime in your department. You do not need to provide specific demographic information such as the patient's name, social security number, or address. It is the job of the police to respond and file a detailed report.

cal care nurses do not have the knowledge and skills to perform the forensic examination, they need to have a high index of suspicion when they see a pattern of injury that suggests sexual assault. When such a situation occurs, nurses can help the patient receive the best possible care by notifying healthcare practitioners who are expert in managing survivors of rape and sexual assault.

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