Sexual Assault Forensic Examination

84

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When the survivor of a sexual assault seeks medical care, in addition to addressing their medical needs, their forensic needs must also be addressed. This is best achieved by a specialist examiner, who is trained to conduct a Sexual Assault Forensic Examination (SAFE). When the examiner is a nurse, she or he is referred to as a Sexual Assault Nurse Examiner (SANE). In designated centers, the forensic examiner and the nurse, physician, law enforcement officials, social workers, and patient advocates work together as a Sexual Assault Response Team (SART).

The process of caring for survivors of sexual assault continues to evolve and reflects the advances in forensic science, judicial reform and our understanding of assault survivor psychology.

However, when an emergency medical condition exists, it should be addressed by the designated medical team. The role of the SAFE examiner becomes secondary in these situations. Life- or limb-threatening injuries always take priority over forensic evidence collection, although emergency medical care can often be rendered without compromising existing evidence.

84.1 Indications

- Survivors of sexual assault who seek and consent to forensic examination.
- The upper limit of time for evidence collection varies from state to state (e.g., 96 h in New York State [1]).

84.2 Contraindications

- Absolute
  - If the survivor does not consent to evidence collection
- Relative
  - If the upper time limit has been exceeded

84.3 Materials and Medications

- Ideally, a designated SAFE room should be available.
- Standardized sexual assault evidence collection kits.
- Gloves.
- Camera.
- Portable light source.
- Swab dryer.
- Wood's lamp.
- Anoscope.
- Colposcope, ideally with a camera.
- Support material for survivors: information pamphlets, clothing.
- Prophylactic medications: antibiotics, antiretrovirals, contraceptives.

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84.4 Procedure: "Prepare the Patient, Prepare the Room"

1. Informed Consent
   - A separate consent is required for the SAFE. Obtaining consent has important psychosocial implications for the survivor and returns "control" and "choice" to him or her at this critical time [2]. If the survivor chooses not to undergo a SAFE, the examiner must respect his or her decision. Consent is not an "all-or-none" phenomenon and survivors can chose to consent to some steps and decline others. The examiner should be respectful of their decision.
   - Consent for the SAFE should include consent for evidence collection, forensic photography, release of evidence to law enforcement, and permission to discuss the findings of the SAFE with investigators.
2. Law Enforcement Involvement
   - State laws vary in terms of reporting requirements for sexual assault. The examiner should be familiar with the requirements in the state in which she or he practices. All survivors should be offered law enforcement involvement and the benefits of doing so should be outlined to them.
3. Evidence Collection
   - Sexual assault evidence collection kits are specialized preassembled kits containing essential materials for collecting and preserving evidence (Fig. 84.1). The kit contains written instructions, swabs, envelopes, body diagrams, and an integrity seal for the examiner's use.
4. Forensic Interview and History Taking
   - The forensic interview is the first step in the SAFE process. It is a therapeutic as well as a forensic exercise, designed to establish rapport with the survivor, offer support, and gather information to help guide the medical care and direct evidence collection. Acquiring information is a continuous process that ends only when the survivor-SAFE interaction ends.
   - The survivor's exact words with quotation marks should be recorded. A simple factual account of events should be documented. Avoid biased or prejudicial language, such as "allegedly" or "claims." Relevant information includes the time of the assault, the type of contact involved (offender-survivor and survivor-offender), the number of people involved, and the survivor's activities since the assault. A basic medical and obstetrical-gynecological history is also relevant. The SAFE interview is not an investigative interview. Investigation of the sexual assault is the role of law enforcement.
5. General Physical Examination
   - The patient should be asked to undress over a paper sheet to allow any trace evidence to fall and be collected. She or he should be given a gown to wear. A systematic head-to-toe examination should be undertaken. Identify any injuries, no matter how minor. Document them in writing, on a body diagram (Fig. 84.2), and, when possible, with photography. Pay attention to areas that can be easily overlooked: in the mouth, behind the ears, under the chin, and the soles of the feet, for example. Take time to palpate the scalp for areas of tenderness.
6. Injury Documentation
   - Always take time during documentation. Describe the type of injury—abrasion, contusion, laceration, or bite mark. Document the size and site of the injury, ideally include a measuring device in the photograph. A commonly used scale is the one provided by the American Board of Forensic Odontology (ABFO) (Fig. 84.3). If an injury appears to have a shape or pattern (e.g., linear, circular, curvilinear, petechial), describe it without drawing specific conclusions.
7. Bite Marks
   - Bite marks require additional evaluation because they may have salivary trace evidence associated with them. In addition to being described and photographed, they should be swabbed and the dried swabs included in the evidence collection kit.
8. Forensic Pelvic Examination
   - The purpose of the genital examination (external and speculum) is to identify injury and collect forensic evidence.
9. Inspection
   - Visually examine the external genitalia. Separate the labia and look in skin folds and at the posterior fourchette for injury. The TEARS mnemonic (T = tear, E = ecchymosis, A = abrasions, R = redness, S = swelling) is a useful tool while inspecting and documenting. External genital injury findings can be photographed using a standard camera (digital or conventional 35 mm) or a colposcope camera for additional magnification.
10. Speculum Examination
    - Insert a moistened speculum under a good light source and inspect the vault and cervix for any injuries or possible trace evidence for collection (pooled secretions, hair, retained condom, debris). A colposcope (Fig. 84.4) is a useful adjunct and allows for magnification and assists in injury identification and photodocumentation.
    - Bimanual pelvic examination may be a part of some protocols but is not mandatory.
11. Rectal Examination
    - Inspect the area looking for fissures, bleeding, or secretions. Anoscopy, if indicated by this history and permitted by the survivor, should be performed and the findings documented and photographed.

12. Evidence Collection
    - The evidence collection kit should be opened and the contents laid out in a systematic way. Once the evidence collection kit has been opened, it cannot be left unattended at any time. Each envelope should be labeled with the survivor's name and the time and date of collection. The required swabs and slides are included in the kit.
13. Collection of Biological Material
    - Evidence collection will include oral, anal, and vaginal swabs. Swabs should be allowed to air dry before being placed back in the envelopes. Trace evidence should be collected and may include nail scrapings, dried secretions, loose hair collection, and possible foreign bodies (e.g., soil, condom). A Wood's lamp may help the examiner to identify dried secretions on skin or clothing. When each step is completed, the envelope will be closed, sealed, and signed by the examiner and returned to the box.
    - When completed, the Sexual Assault Evidence Collection Kit (SAECK) is closed, the provided evidence seal placed on the box, and the seal signed and dated by the examiner. The evidence is then given to law enforcement (if the patient consents) or maintained in a predesignated, secure locked area if law enforcement is not yet involved in the case. Each time evidence is passed from person to person, the transfer must be documented in writing to ensure it is not compromised or tampered with in any way. This is the underlying principle of maintaining a "Chain of Custody." This chain must be maintained for evidence to be admissible in court.
14. Collection of Clothing
    - Clothing may be considered "evidence" and collected in some cases. Depending on the case, this may include underwear and any feminine hygiene products. These may fit in the evidence collection kit itself. Larger items of clothing and/or shoes will need to be collected separately. They should be placed in an appropriately sized paper bag and labeled with the patient's name. The bag should be sealed, signed, and dated by the examiner in the same way as all other evidence. Any additional evidence should remain with the SAECK. The survivor should be provided with replacement clothes and underwear.
15. Forensic Photography
    - Although the examiner is not expected to be a specialized forensic photographer, photodocumentation of injuries is an important part of the SAFE. A separate consent is required. Either a conventional 35-mm camera or a high-resolution digital camera is acceptable.
    - At least one image should include the survivor's face or some form of identifying marks. Near and far images should be taken. The camera should be held at 90° to the surface to avoid distortion of the image. A tape measure should be included when an injury is being photographed. An identifier, like medical record number or case number, should be visible in the image if possible. The examiner should document in the records that photographs were taken.
16. Investigations
    - Baseline complete blood count (CBC), chemistry panel, and liver function tests are generally drawn before initiation of human immunodeficiency virus (HIV) prophylaxis. Serologic tests for syphilis, hepatitis B virus (HBV), hepatitis C virus, and HIV should be obtained. Urine should be sent for analysis and pregnancy testing. Urine for toxicology may be useful in selected cases. Testing for gonorrhea and chlamydia before starting prophylactic antibiotics may be undertaken, but this remains controversial.
17. Prophylaxis
    - Survivors should be offered prophylaxis against pregnancy, common sexually transmitted infections, HBV, and HIV. The current Centers for Disease Control and Prevention (CDC) guidelines recommend the following:
      (a) HBV vaccination should be offered to sexual assault victims at the time of the initial examination if they have not been previously vaccinated. Postexposure HBV vaccination, without hepatitis B immunoglobulin (HBIG), should adequately protect against HBV infection. Follow-up doses of vaccine should be administered 1–2 and 4–6 months after the first dose.
      (b) An empirical antimicrobial regimen for chlamydia, gonorrhea, and trichomonas should be offered.
        - Recommended regimens:
          - *Ceftriaxone* 125 mg intramuscularly in a single dose
          - *PLUS*
          - *Metronidazole* 2 g orally in a single dose
          - *PLUS*
          - *Azithromycin* 1 g orally in a single dose
          - *OR*
          - *Doxycycline* 100 mg orally twice a day for 7 days
      (c) Emergency contraception protocols are state and institution specific. A negative pregnancy test should be documented before evidence collection. Commonly prescribed regimens are "Plan B," "Ovral," and the recently approved "Ella."
      (d) Update tetanus profile if indicated.
      (e) HIV postexposure prophylaxis.
        - All patients with significant exposure should receive pretest counseling and postexposure prophylaxis as per CDC guidelines [3]. The regimens are complex (Table 84.1).

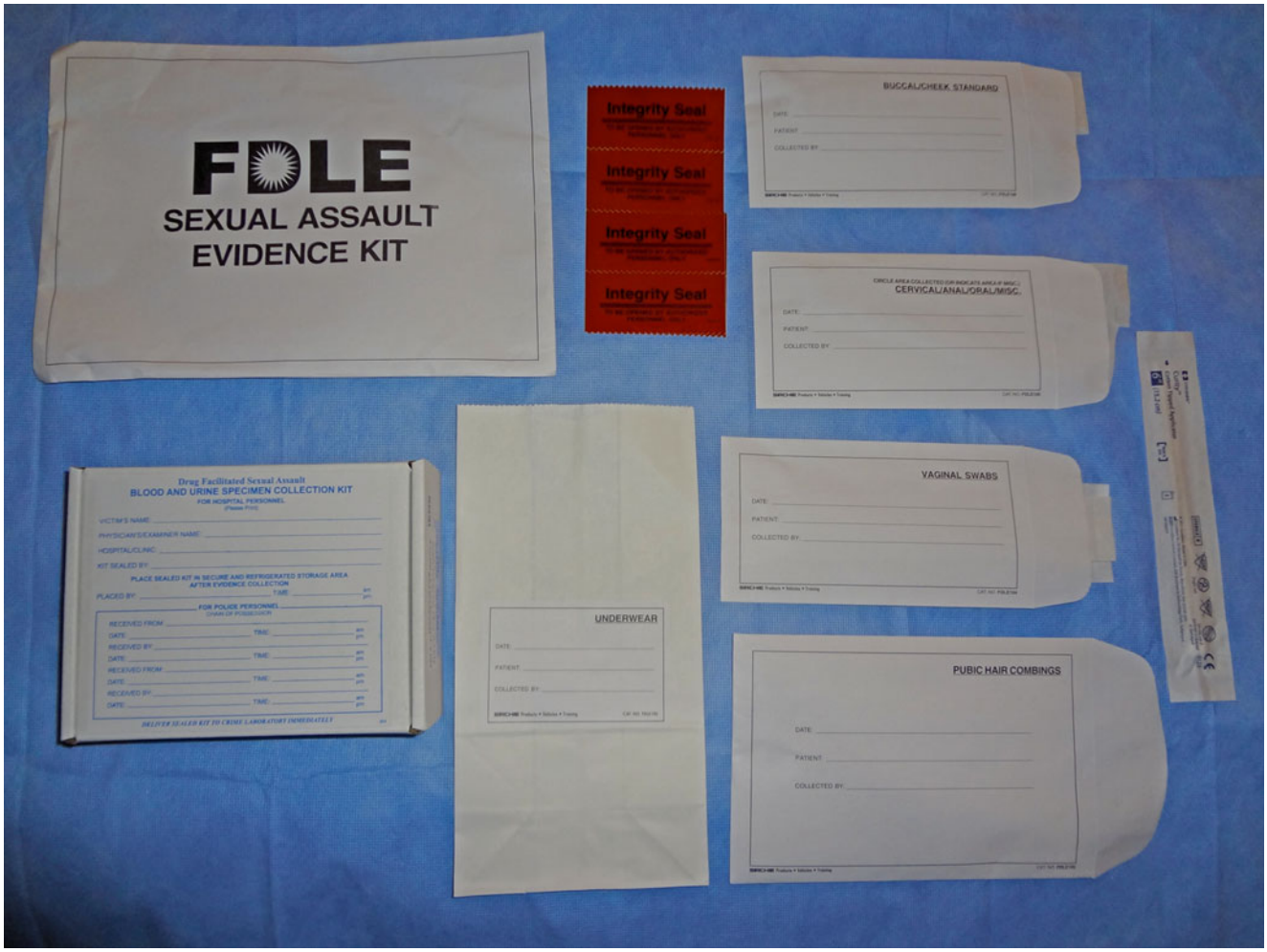

Fig. 84.1 Sexual assault evidence collection kit

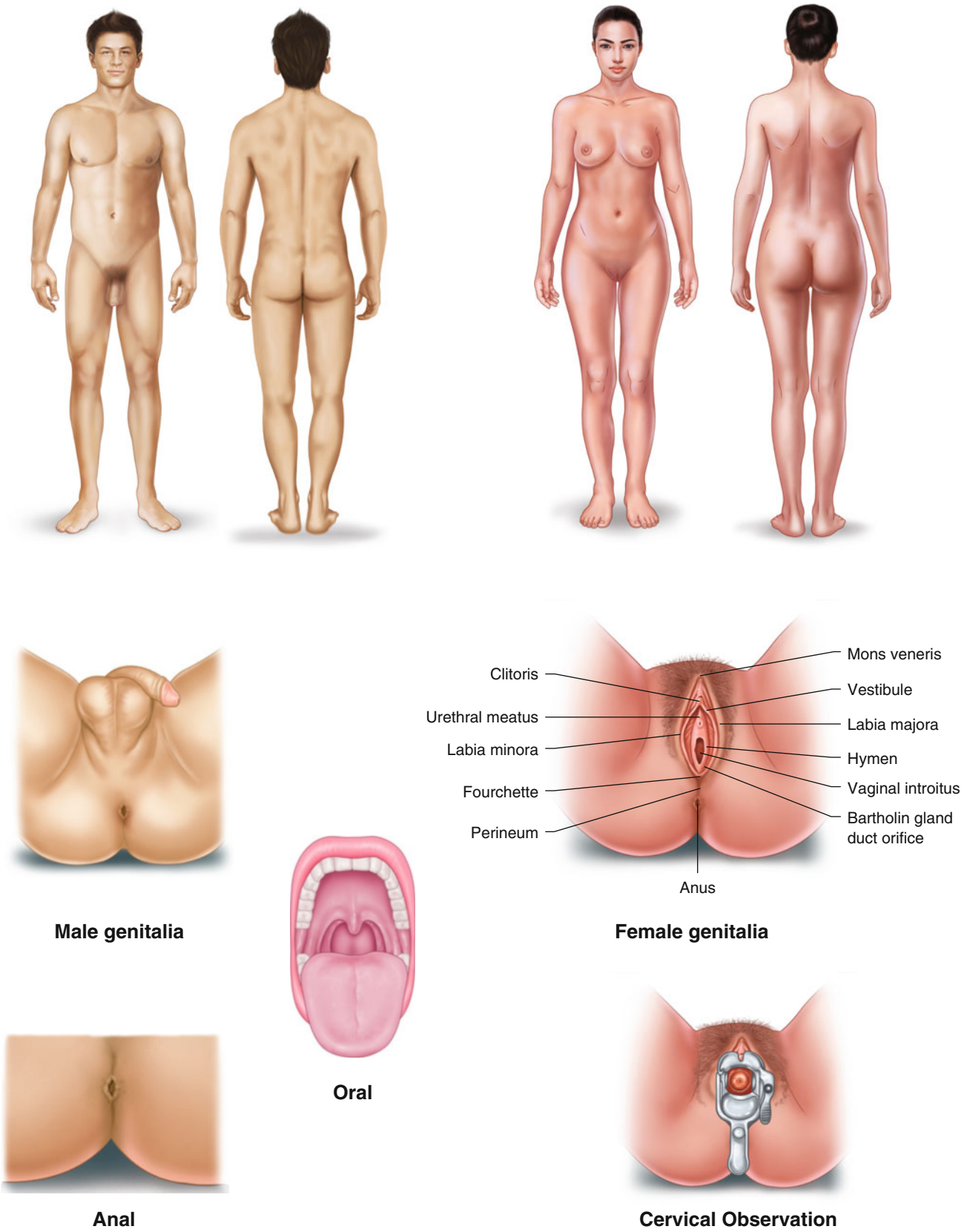

Fig. 84.2 Traumagram

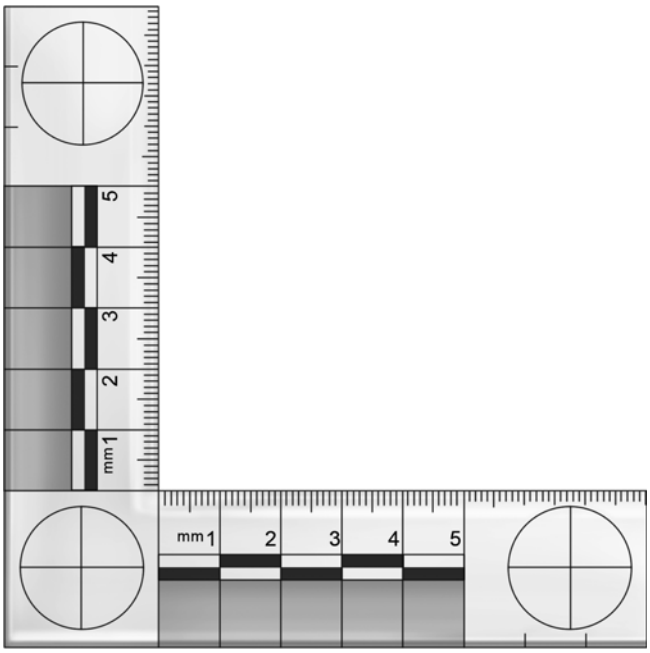

Fig. 84.3 American Board of Forensic Odontology (ABFO) scale (Courtesy Bronx SART Program)

Fig. 84.4 Colposcope (Courtesy Bronx SART Program)

Table 84.1 Postexposure prophylaxis as per Centers for Disease Control and Prevention (CDC) guidelines [3]

Regimen	Dosage
Zidovudine (Retrovir, ZDV, AZT) + lamivudine (Epivir®, 3TC); *available as Combivir*™	ZDV: 300 mg twice daily or 200 mg three times daily, with food; total: 600 mg daily 3TC: 300 mg once daily or 150 mg twice daily Combivir: one tablet twice daily
Zidovudine (Retrovir, ZDV, AZT) + emtricitabine (Emtriva, FTC)	300 mg twice daily or 200 mg three times daily, with food; total: 600 mg/day, in 2 or 3 divided doses; FTC: 200 mg (one capsule) once daily
Tenofovir DF (Viread, TDF) + lamivudine (Epivir, 3TC)	300 mg once daily; 3TC: 300 mg once daily or 150 mg twice daily
Tenofovir DF (Viread, TDF) + emtricitabine (Emtriva, FTC)	TDF: 300 mg once daily; FTC: 200 mg once daily Truvada: one tablet daily

AZT azidothymidine, *FTC* emtricitabine, *3TC* lamivudine, *TDF* tenofovir disoproxil fumarate, *ZDV* zidovudine

84.5 Pearls and Pitfalls

- Pearls
  - Survivors will need to have both medical and psychosocial follow-up. Medical referrals should include gynecology and primary care for follow-up of their baseline serology, testing and completion of HBV vaccination regimen, and so on.
  - Referrals for counseling and information with 24-h hotlines should be provided**.** Recovery from a sexual assault is a process and is best achieved by a long-term support network [4].
- Pitfalls
  - It is estimated that survivors are men in fewer than 10 % of cases, although sexual assault in males appears to be greatly underreported. The same principles for evidence and prophylaxis apply for the SAFE.

References

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