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# Sexual Assault in Childhood and Adolescence

Hakan Kar

*Mersin University, Faculty of Medicine, Department of Forensic Medicine  
Turkey*

## 1. Introduction

### 1.1 Definition of sexual assault

Although definition of violence may vary in different societies and cultures, it can be defined as all behavior that affects bio-psycho-social status of individuals.

In the United Kingdom the Sexual Offences Act 2003 defines "sexual assault" as when a person (A)

1. intentionally touches another person (B),
2. the touching is sexual,
3. B does not consent to the touching, and
4. A does not reasonably believe that B consents (Official text of the Sexual Offences Act, 2003).

In the United States the definition of sexual assault varies widely between the individual states. The Rape, Abuse & Incest National Network defines "sexual assault" as unwanted sexual contact that stops short of rape or attempted rape. This includes sexual touching and fondling. (Rape, Abuse, and Incest National Network [RAINN], 2005) According to the U.S. Department of Health & Human Services, "sexual assault can be verbal, visual, or anything that forces a person to join in unwanted sexual contact or attention." Sexual assault is therefore somewhat of an umbrella term, and can describe many things, including:

- rape, including partner and marital rape
- unwanted sexual contact (touching or grabbing)
- unwelcome exposure of another's body, exhibitionism, or voyeurism
- child sexual abuse
- incest or molestation
- sexual harassment
- sexual exploitation of clients by therapists, doctors, dentists, or other professionals (U.S. Department of Health & Human Services, 2011).

Sexual violence is described as sexually motivated behavior that exerted against one's privacy despite one's resistance. Furthermore, all sexually motivated behavior directed to low aged or mentally retarded individuals included in scope of the term of sexual violence (Christian et al., 2000; Chu&Tung, 2005; Herbert et al., 1992).

### 1.2 Incidence and prevalence sexual assault

Sexual assault is significantly underreported worldwide. Most of the rape victims do not disclose the assault because of being accused or exposed to repeated assaults.

Underreporting of sexual assault "might arise from the fear of being re-victimized in the criminal justice system, of not being believed, from self-blame and from failure by rape victims to equate their experience with the legal definition of rape."

Women may fear that they would be blamed for the assault, or believe that reporting would place them or their families in danger of retaliatory violence. A recent publication by the Open Society Institute's Network Women's Program states: "Rape goes largely unreported across the region. The act of rape is surrounded by pejorative stereotypes: women ask for it, they provoke it by their dress or behavior, or they cry rape to take revenge on a man; normal men do not commit rape, and so on. In addition, reporting procedures, at the police station and again in the courts, are complicated and degrading. In most cases, if a woman reports being raped, she is regarded with suspicion and rarely believed; she lacks any form of police or court protection, leaving her vulnerable to retaliation—either from the offender or, in some cases, from members of her family who feel she has brought them dishonor."

Approximately 700,000 women in the reproductive age group are victims of sexual assault in the United States and, 25,000 women are raped per year in France. Unfortunately only 16% of rapes are reported to police, however 50% of victims of rape have expressed that, they would report the rape after a warranty of secrecy about their identity (Bechtel&Podrazik, 1999; Santiago et al., 1985). Most of the rape victims do not disclose the assault because of being accused or exposed to repeated assaults (Ledoux&Hazelwood, 1995, Crowley, 1999).

Despite this underreporting, available statistics indicate that sexual assault is a pervasive problem in all societies. Charlotte Bunch, in an article included in UNICEF's 1997 publication, *The Progress of Nations*, has stated that "statistics on rape from industrialized and developing countries show strikingly similar patterns: Between one in five and one in seven women will be victims of rape in their lifetime."

Special Rapporteur on Violence Against Women, Radika Coomaraswamy, in her 1997 report on violence against women, detailed the following statistics:

- A Canadian study reports that 23.3% of women had been victims of rape or attempted rape.
- 22% of adult women in Seoul had been the victims of rape or attempted rape.
- In Jakarta, Indonesia, city police recorded 2,300 cases of sexual violence against women in 1992, 3,200 cases in 1993, and 3,000 in the first half of 1994.
- Out of 331,815 reported crimes against women in 1993 in the Russian Federation, 14,000 were rapes.
- A survey in the United Kingdom found that 19.4% of women had been victims of sexual violence.
- Adolescents constitute 20-50% of all rape victims in the United States.
- In a study conducted at a university in the United States, one of six female students reported having been the victim of rape or attempted rape in the past year. One out of fifteen men reported having committed rape or attempted to commit rape (Coomaraswamy, R. 1997).

According to estimates from the World Health Organization:

- In some countries, almost one in four women may experience sexual violence by an intimate partner, and that almost one-third of young girls report that their first sexual encounter was forced.

- The percentage of women who reporting having been sexual assaulted in the past five years in Tirana, Albania in 1996 was 6%.
- The percentage of women who reporting having been sexual assaulted in the past five years in Budapest, Hungary in 1996 was 2%.
- The percentage of women who reporting having been sexual assaulted in the past five years in Ėiauliai, Kaunas, Klaipeda, Panevežys, and Vilnius in Lithuania in 1997 was 4.8%.
- The percentage of women who reporting having been sexual assaulted in the past five years in Ulaanbaatar and Zuunmod, Mongolia in 1996 was 3.1%.
- In a survey of women in the Czech Republic, 11.6% of women reported experiencing forced sexual contact in their lifetime, and 3.4% reported that they had experienced this on more than one occasion. (World Health Organization [WHO], 2002)

## 2. Child Sexual Assault

### 2.1 Definition and classification

Child sexual abuse is a form of child abuse in which an adult or older adolescent uses a child for sexual stimulation. It is generally defined as contacts between a child and an adult or other person significantly older or in a position of power or control over the child, where the child is being used for sexual stimulation of the adult or other person. The World Health Organization has defined child sexual abuse and exploitation as the involvement of a child in sexual activity that he or she does not fully comprehend, is unable to give informed consent to, or for which the child is not developmentally prepared and cannot give consent, or that violates the laws or social taboos of society.

The United Nations Convention on the Rights of the Child (CRC) is an international treaty that legally obliges states to protect children's rights. Articles 34 and 35 of the CRC require states to protect children from all forms of sexual exploitation and sexual abuse. This includes outlawing the coercion of a child to perform sexual activity, the prostitution of children, and the exploitation of children in creating pornography. States are also required to prevent the abduction, sale, or trafficking of children (United Nations, 1989).

Forms of child sexual abuse include asking or pressuring a child to engage in sexual activities (regardless of the outcome), indecent exposure of the genitals to a child, displaying pornography to a child, actual sexual contact against a child, physical contact with the child's genitals (except in certain non-sexual contexts such as a medical exam), viewing of the child's genitalia without physical contact (except in nonsexual contexts such as a medical exam), or using a child to produce child pornography.

Child sexual abuse can be classified as:

- **Sexual assault** – a term defining offenses in which an adult touches a minor for the purpose of sexual gratification; for example, rape (including sodomy), and sexual penetration with an object. Most U.S. states include, in their definitions of sexual assault, any penetrative contact of a minor's body, however slight, if the contact is performed for the purpose of sexual gratification.
- **Sexual exploitation** – a term defining offenses in which an adult victimizes a minor for advancement, sexual gratification, or profit; for example, prostituting a child, and creating or trafficking in child pornography.

- **Sexual grooming** - defines the social conduct of a potential child sex offender who seeks to make a minor more accepting of their advances, for example in an online chat room. (APA Board of Professional Affairs, 1999; Child Welfare Information Gateway, 2009; Finkelhor & Ormrod, 2001; WHO, 1999)

## 2.2 Incidence and prevalence

Sexual assault is a sociological problem affecting individuals in all age groups. According to the Convention on the Rights of the Child, a child means every human being below the age of eighteen years unless under the law applicable to the child, majority is attained earlier (Office of the United Nations High Commissioner for Human Rights, 1989).

Different studies report different percentages of child and adolescent sexual assault. For example, it's reported that 43% of 766 cases of sexual assault were under 18 years of age in a study of Michigan State University (Jones et al., 2003). It's mentioned that 178 of 405 victims were adolescent in another research. Teenagers 16-19 are reported to be victims of rape or sexual assault more than twice as likely as any other age group in USA. Children and especially adolescent females are sexually assaulted more frequently comparatively to adults according to many studies (Navratil, 2003; Jones et al., 2003; Peipert & Domagalski, 1994). In author series, most of the sexual assault victims (87.65%) were less than 18 years of age.

Estimates of child sexual abuse rates vary for many reasons. Less than 10 percent of set abuse is reported to the police (Finkelhor et al., 1988). Even in self-reporting surveys, abuse may be underreported because many people are afraid or ashamed to reveal victimization, have repressed memories of abuse, refuse to participate in studies or deny that what happened was "real" abuse.

Definitions of both abuse and the age of maturity affect frequency rates. Some researchers have estimated that over 50% of the female child population will experience some form of sexual abuse before the age of 18 (Russell, 1984; Wyatt, 1985), while others have reported rates of 11% and lower (Fritz et al., 1981; Kercher & McShane, 1984). Similarly, while a meta-analytic study by Rind and Tromovitch, (1998) reported mean prevalence rates of 17% and 28% for males and females respectively, the range for males was 3% to 37%, and for females 8% to 71%. The results of the systematic review of 11 studies on the prevalence of child sexual assault in Switzerland shows that the percentage of participants that ever experienced any form of child sexual assault, prevalence rates assessed by a single general item are considerably lower (up to 18.1% for girls and 3.0% for boys) than when rates were calculated on the basis of several items assessing specific forms of child sexual assault (up to 39.8% for girls and 10.9% for boys) (Schönbucher et al., 2011). Such wide variation in the prevalence rate is due to differences in the definition of child sexual abuse, the type of sample used, design, and measurement techniques.

Sarafino (1979) estimated the national incidence of reported and unreported child sexual abuse to be over 336,000 cases per year. Sarafino arrived at this figure by calculating the rates of reported sexual offences per 100,000 children in each of the four locales, and then applying this rate to the national total of 61 million children. This led to an estimated 74,725 cases of child sexual abuse in a one-year period. The rate of unreported cases was calculated by multiplying 74,725 by 3.5 (assuming that the number of unreported cases is at least 3 or 4 times higher than the reported cases as believed by several experts in the field). The number of reported cases was added to the estimated number of unreported cases. Consequently, it was estimated that approximately 336,200 sexual offences are committed against children every year in the United States.



In this respect, the prevalence of sexual assaults, especially among children and adolescent, is thought to be extremely higher than in literature.

### 2.3 Characteristic features of child sexual assault

Few people are aware of the true state of the science on child abuse. Instead, most people's beliefs have been shaped by common misconceptions and popular myths about this hidden crime. Societal acceptance of these myths assists sex offenders by silencing victims and encouraging public denial about the true nature of sexual assaults against children.

Common Myths about Child Sexual Abuse:

- Child sexual abuse is a rare experience.
- Children make up stories or lie about sexual abuse.
- A child is most likely to be sexually abused by a stranger
- Child sexual abuse is always perpetrated by adults.
- Normal-appearing, well educated, middle-class people don't molest children
- Children who are being abused would immediately tell their parents.
- Boys can't be sexually abused.
- Sexual abuse of a child is usually an isolated, one-time incident.
- Child molesters are all, 'Dirty old men.'

Boys abused by males are or will become homosexual

- Boys are less traumatized as victims of sexual abuse than girls
- Children will naturally outgrow the effects of sexual abuse or incest
- People are too quick to believe an abuser is guilty, even if there is no supporting evidence.
- Children who are being abused will show physical evidence of abuse.
- Acts like fondling, kissing, or touching, for example, are not really sexually abusive, and don't really harm the young person
- Children and youth are sexually abused because their parents/caregivers neglected to care for, or supervise them properly.
- Preschoolers do not need to know about child sexual abuse and would be frightened if educated about it.

However children of all ages, races, ethnicities, and economic backgrounds are vulnerable to sexual abuse. Child sexual abuse affects both girls and boys in all kinds of neighborhoods and communities, and in countries around the world.

Even the mean age of child sexual assault varies in different studies, most authors agree upon the reality of "children are sexually assaulted in every ages of childhood and adolescence". Many researches represent data about the age of child sexual assault between infancy and 18 years of age (De Jong et al., 1982; Mian et al., 1986; Riggs et al., 2000). Even sexual assault of girls especially adolescents are more frequent; boys are also at significant risk of sexual abuse, often at younger ages than girls. (De Jong et al., 1982)

Female dominancy of the victims is described in many descriptive researches which focused on child and adolescence sexual assault (Peipert&Domagalski, 1994; Jones et al.; 2003, Navratil, 2003). It was found 254 female (86%) and 40 male (14%) children in South Africa, 85.5% of the victims were female and 14.5% were male in Canada, 113 girls and 17 boys in Minnesota, USA and 77% of girls and 23% of boys in England (Bentovim, 1987; Dubé& Hébert, 1988; Cox et al., 2007; Tilelli et al., 1980).

Most often, sexual assault victims are assaulted by an acquaintance not stranger. A number of studies revealed the percentages of acquaintance assailants as changing from 56% to 78% (Christian et al., 2000; Csorba et al., 2005; Dube&Hebert, 1988; Grossin et al., 2003; Lauritsen&Meldgaard, 2000; Muram et al., 1995; Peipert,&Domagalski, 1994; Sahu et al., 2005). Most children are abused by someone they know and trust, although boys are more likely than girls to be abused outside of the family (American Medical Association, 1992; Courtois, 1988 A study in three states found 96 percent of reported rape survivors under age 12 knew the attacker. Four percent of the offenders were strangers, 20 percent were fathers 16 percent were relatives and 50 percent were acquaintances or friends. Among women 18 or older, 12 percent were raped by a family member, 33 percent by a stranger and 55 percent by an acquaintance. (Langan&Harlow, 1994) In another study it was found that fifty-nine percent (398) of the children were sexually abused by an acquaintance, 21% (145) of the children were sexually abused by a relative, and 5% (33) of the children were sexually abused by a stranger. (Murphy et al., 2010) Abuse typically occurs within a long-term, on-going relationship between the offender and victim, escalates over time and lasts an average of four years. Offenders often develop a relationship with a targeted victim for months before beginning the abused (Courtois, 1988) In author’s series 73 cases were acquaintance sexual assault, stranger assault were only in 4 cases. (Table 1)

<i>Types of acquaintance ship / Age , sex</i>	<i>Relative</i>	<i>Neighbor</i>	<i>Non Relative acquain- tance</i>	<i>Adjunct</i>	<i>Fiancé</i>	<i>Husband religiously but not registry married</i>	<i>Friend or beloved</i>	<i>Stranger</i>	<i>Step father</i>	<i>Total (%)</i>
M 0-6	1									2
F		1								(2.6)
M 7-12		2	1					1		11
F		3	1					2	1	(14.28)
M 13-15		1	1							22
F 16-18	3		5			2	8	1	1	(28.58)
E 16-18										42
K	1	7	8	1	2	5	18			(54.54)
Total (%)	5	14	16	1	2	7	26	4	2	77 (100)

Table 1. Relationship between victims and perpetrators with respect to sex and age groups

This finding might be connected with characteristics of these age groups such as physically weakness, low comprehension about the abusive acts.

The place of sexual assault are indoor especially victims own home and outdoor sexual assault is rare in most studies. The location of assault are reported as Own home inside 25%,

other home inside 19%, own home outside 9%, other home outside 5%, other 11%, public place 6%, school 4%, unknown 21% in a study performed in South Africa. (Cox et al. 2007) The incidents most often took place in the victim's or assailant's home (76.7%). A total of 11.9% of the incidents occurred in another closed place, while 8.8% occurred in an open public place in another study (Dube&Hebert, 1988). The place of sexual assault was perpetrators' home in 39.74 % of the cases, followed by outdoor in only 23.08 % of the cases in authors' series.

Children are mostly assaulted during the day rather than night. In a study 60% of the cases were seen during the day, 34.9% between 18:00 and midnight, and 5.1% between midnight and 6:00 (Dube&Hebert, 1988). Another author mentioned that 49% of sexually assaults occur in broad daylight (Firsten, 1990).

Child abuser is young rather than an old person in generally. Adolescent sexual offenders report having approximately two paraphilias with onset between ages 15 to 18 years of age (Abel et al., 1987). It is typical that they act upon these deviant impulses in adolescence. Nearly half of adult convicted rapists and child molesters committed their first offense between 8 and 18 years of age, with modal age being 16 (Groth et al., 1982). The disparity between the age of victims' and perpetrators' was detected to be 1-2 years in 14.29% of the cases, 3-5 years in 25.97%, 6-10 years in 32.47%, and 11 years and over in 27.27% cases in authors' series.

More offenders are male than female, though the percentage varies between studies. The percentage of incidents of sexual abuse by female perpetrators that come to the attention of the legal system is usually reported to be between 1% and 4% (Denov, 2003). Other studies shows that women commit 14% to 40% of offenses reported against boys and 6% of offenses reported against girls (Dube et al., 2005; Finkelhor, 1994).

A number of studies have stated that, victims of child sexual assault are generally do not disclose the assault. However, most of victims applied to legal authorities disclose the assault because of secondary psychiatric problems and fear, and 55.6% of these had noticed to be assaulted many years before reporting (Safran, 1998; Jones et al., 2003). There are many factors that may have influenced the rate at which children were referred for medical care following the sexual abuse, including delayed disclosures. However, abuse by strangers is often treated with more seriousness by other disciplines than abuse by family members or others known to the child. Similarly, 76.92% of cases referred to sexual assault evaluation unit later than three days after assault, in authors' study. The main cause of delay in 19.23% of the cases explained the cause of delay as, they were anxious about being accused or punished, which support the idea of "victims might conceal the assault because of the fear of being accused, punished or injured by perpetrators".

The American Academy of Pediatrics Committee on Child Abuse and Neglect recommends forensic evidence collection when sexual abuse has occurred within 72 hours of the examination (Kellogg, 2005). Adams recommends evidence collection within 24 hours for prepubertal children (Adams, 2008; Christian et al., 2000) suggest that the best evidentiary material obtained from children post-abuse is found in the first 24 hours.

### 3. Forensic investigation of child sexual abuse victims

Anyone evaluating children for suspected sexual abuse must have an education and working knowledge of forensic interviewing, child bio-psycho-social development, prepubertal and postpubertal anatomy, and the ability to identify and interpret physical



findings, including those which are normal, indicative of trauma, or unclear or uncertain (base on our understanding of these issues to date)

### 3.1 Forensic interviewing

First step of child sexual abuse evaluation is the interviewing the victim. Obtaining an unbiased history from a child who may have been sexually abused may be the most important part of the evaluation, particularly since diagnostic physical findings are frequently absent. Interviewing the child, steps must be taken by the examiner to prepare the child for the interview and examination, such as and to explain why.

The conversation should begin with topics that are interesting and not “threatening” for the child. The examiner spend enough time getting acquainted with the child before examination and should be patient and friendly in order to establish the desired level of relationship. Children are frightened by a hurried or demanding examiner, but they generally respond sufficiently to and cooperate with a pleasant one. It is not necessary for the examiner to wear a lab coat or other hospital and medical suit; such apparel may be frightening for younger children.

Then the history regarding concerns about sexual abuse should be obtained from the parent or caregiver separately from the child. Many parents are understandably worried and appreciate an opportunity to share their concerns privately. The history should be comprehensive and include the child's current and past medical problems, as well as social and family histories. Parents should be asked how the abuse came to light or, if the child has not disclosed abuse, why the parents suspect it.

The interview and examination room must be designed child-friendly. It would be helpful to perform this interview with multidisciplinary approach at once in sexual evaluation units for children to avoid retraumatization of the victim. The interview should be designed in multidisciplinary assessment involving skilled forensic interviewing of the child and a medical examination done by a medical provider with specialized training in sexual abuse. In order to minimize child interviews, these assessments are frequently held in settings such as child advocacy centers, where forensic interviewers and medical clinicians, child protective service workers, and police and district attorneys can work jointly to address the legal and protective issues in a coordinated fashion. Therefore Children's Advocacy Centers was found and have spread rapidly in USA. One of the primary goals of Children's Advocacy Centers (CACs) is to improve child forensic interviewing following allegations of child sexual abuse. They aim to coordinate law enforcement, child protective, medical, and other agencies, and typically use a single interviewer to provide information to every investigator involved in the case. Traditional methods for interviewing children have often been criticized as ineffective in assessing the truth and unnecessarily stressful for children. Three specific criticisms of these methods are that (1) investigation activities and decision-making are not coordinated across the multiple agencies involved, (2) children are interviewed too many times by too many interviewers and have to “tell their story over and over again,” and (3) children are interviewed in stressful or compromising locations that disturb them further and make it difficult to talk. Sexual evaluation units or centers for children like CACs must aim to coordinate multiple investigations, to limit the number of interviews and interviewers children have, and to provide “child friendly” locations for interviews (Cross, 2007)

Interview should be structured and protocol-guided rather than standard interview practices. There are many useful structured interview protocols frequently used just like National Institute of Child Health and Human Development's Structured Interview Protocol or Investigative Interviewing Practice Guideline of American Professional Society on the Abuse of Children etc. Researchers examining the National Institute of Child Health and Human Development (NICHD) interview protocol, in particular, have found that the recommended open-ended, free narrative questioning techniques are effective in eliciting information about abuse in forensic settings, at least with children who are forthcoming in disclosing the abuse. Lamb et al. (2003) also showed that open-ended invitations are just as effective with the younger as with the older children, although younger children report over all less information than older children (Lamb, 2003).

Children should be asked if they know why they have been brought to the doctor and to relate what happened to them. Open-ended questions such as "Has anyone ever touched you in a way that you didn't like or in a way that made you feel uncomfortable?" should be asked. The child's statement should be recorded in its own words. Whenever possible, the nature of the sexual contact, including pain, penetration and ejaculation, should be ascertained. Careful documentation of questions and responses is critical.

When an incident is disclosed, the following information must be obtained with a gentle and non-threatening manner, using language that the child can understand

- Who was the person who did this?
- With what part of his/her body?
- What part(s) of the patient's body was (were) touched?
- How many times was the child touched?
- When was the last time that it happened?
- At what location did the abuse occur?
- Was there any exposure to blood or body fluids?
- Did the child experience pain to the affected body part?
- For male assailants, was there ejaculation?
- Did the child tell anyone about the incident? (Adams, 2004)

The history must be recorded using the exact words used by the child to describe the event, particularly when such language is unique, for example, "He put his finger in my coochie." Words to describe the genitalia can be singular to the vocabulary of a child, giving credence to his or her testimony in a court of law (American Academy of Pediatrics. Committee on Child Abuse and Neglect., 1999; Giardano, 2005; Sternberg, 2001).

### **3.2 Physical examination**

#### **3.2.1 Informed consent**

Prior to physical examination, written, witnessed informed consent to examination, collection of specimens, release of information to authorities, and taking photographs should be obtained by parents, relatives or acquaintances. The law officer is not present at the examination.

Before examination some steps must be taken to prepare the child for the examination, such as explaining its comprehensive nature "The doctor will examine your entire body, including your private parts", to empower the child "Nothing will be done to hurt you, but if it does hurt or you feel uncomfortable, say stop and we will find another way", and to explain its purpose "I need to check you to make sure your body is okay".

### 3.2.2 Physical examination of the body

The first step is the complete physical examination of the body with careful recording of any trauma away from the genital area. There is a spectrum of injuries from incipient bruises, fresh abrasions and lacerations, up to evidence of prolonged physical abuse of the child with healing injuries of various types and ages and old scars. In some assaults, restraining force is severe enough to leave “fingertip” and other bruises on the limbs or strangling marks on the neck (Fig 1). Bite marks are common in sexual assaults and it is important to measure and photograph them carefully to allow matching or exclusion of the teeth of the alleged assailant (Fig 2). If there is a bite mark on the patient or if the patient gives a history of the perpetrator’s licking a portion of her body (e.g., the nipples), these areas should be swabbed in an attempt to recover saliva. These swabs can then be analyzed for DNA. Positive DNA identification has been made in a number of cases from saliva on the body of the victim. After the swabbing of the bite mark, photographs should be taken. A metric ruler should be included in the photographs. Ideally, one should have a forensic odontologist on call so that they can examine and document the bite mark. They might take casts of the bite mark in addition to photographing it. The medical examiner should carefully search for fibers, hair, glass, paint, or any foreign material that might have been transferred to the victim’s body from the assailant (Laraque, 2006)

All clothing also should be examined for stains, tears, missing buttons, dirt, gravel, grease, leaves, etc. The examiner should examine the hands to see if the fingernails are broken. Is the pubic hair matted? Are there any foreign hairs mixed with the patient’s pubic hair? After examining the hands for trace evidence, the fingernails are clipped and placed in marked containers. The fingernail clippings and foreign materials or pubic hairs can subsequently be examined by the Crime Laboratory for foreign material that might have come from the assailant.

Oral cavity should be examined and should include evaluation for evidence of forced oral penetration such as bruising or petechiae of the hard or soft palate and/or tears of the frenulum.



Fig. 1. Fingertips on the inner side of the thigh



Fig. 2. Bite marks

### 3.2.3 Genital examination

Knowledge of normal ano-genital anatomy is crucial for all forensic examiners. This knowledge will provide a framework for understanding that a normal ano-genital examination does not negate the possibility of sexual abuse and most importantly will allow the examiner to recognize deviations from normal that may be concerning for sexual abuse. One of the most challenging aspects of the female genitalia examination is evaluation of the hymen. The appearance of the hymen changes with age and in response to hormonal influences. The prepubertal hymen is characterized as thin, translucent, and sensitive to touch. It becomes thickened, elastic, redundant, and accommodating in puberty, as the result of a physiologic increase in estrogen exposure (Fig 3). Common normal variations in the appearance of the hymen include imperforate, microperforate, cribriform, and septate forms.

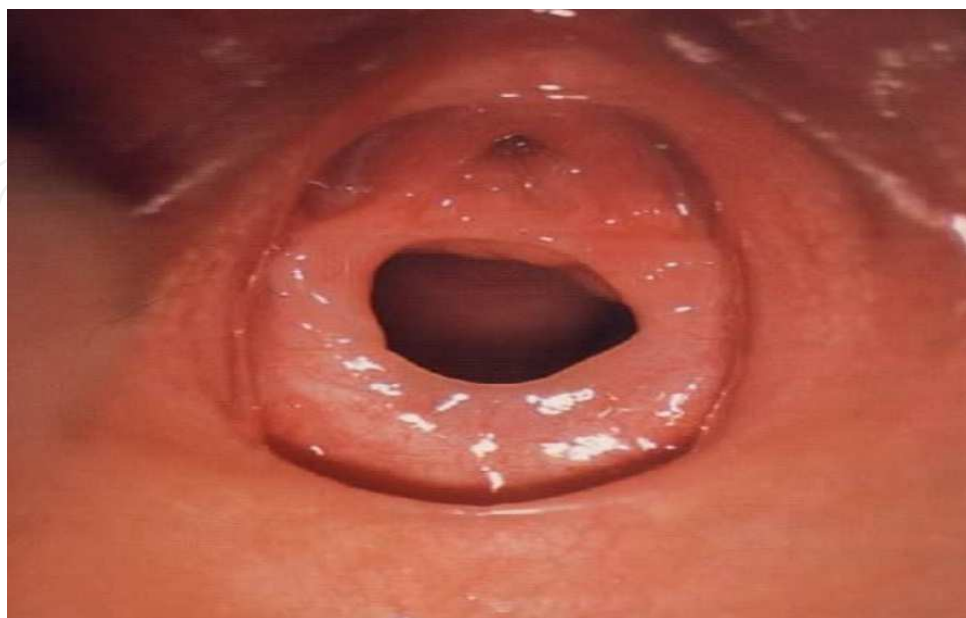


Fig. 3. Prepubertal hymen



An infant or a very young girl can be examined either on the examining table or while on a parent’s lap. During the genital and anal examination, the mother positions the child and the assisting nurse separates the child’s thighs so that the examiner can inspect the genital and the anal areas. The use of labial traction can greatly enhance visualization of the hymen. The labia majora are gently retracted between the thumb and forefinger with force applied downward and outward. Locations of abnormalities should be described as on a clock face with the urethra in the 12-O’clock position and the anus at the 6-O’clock position. In pubertal girls, estrogen causes the hymenal tissue to become thicker and more compliant; therefore, detection of trauma can be more challenging (Lahoti et al., 2001). Any abnormal findings should be confirmed in the knee-chest position. The examiner should take particular note of vulvar inflammations, eruptions, open lesions, tears, lacerations, pain, and discharge (Fig 4). The patency of the hymenal orifice is determined, the size of the introital opening measured, and the form and thickness of the hymen is recorded. In the prepubertal girl, vaginal penetration usually results in tearing of the hymen in the posterior 180°. These lacerations may be associated with bruising or abrasions both ventrally and towards to the posterior fourchette and lateral introital tissues. The colposcopy will improve injury detection and provide more details including small lacerations, inflammation and scars (Fig 5). If there is a discharge, the character, consistency, and color should be noted. The presence of any odor should also be recorded. If there is evidence of infection, dry smears for bacteriologic studies, cultures, and wet slide preparations should be prepared. Fresh wet smears must be examined for *Trichomonas vaginalis*, clue cells, and *Candida albicans*. A speculum examination may be necessary for pubertal adolescent females. The vaginal walls as well as the cervix should be visualized to detect any evidence of trauma and to obtain samples from fluid collections.



Fig. 4. Hymenal laceration at 7-O’clock position

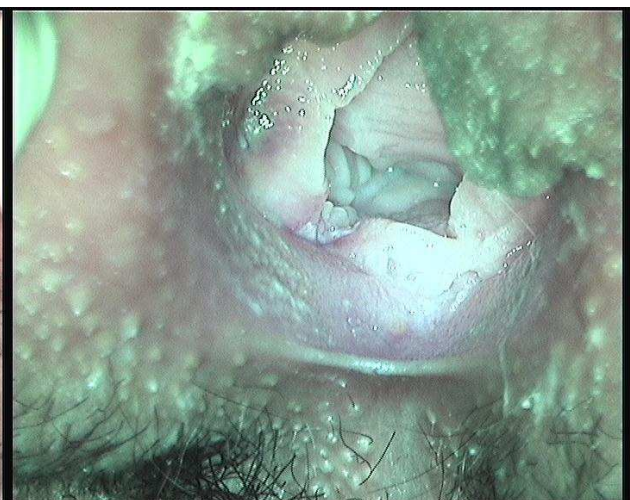


Fig. 5. Colposcopic filter view of Fig4 (Inflammation of the laceration wall and ecchymosis at 10-O’clock is obvious)

Clinical examination of the anus is often disappointing in the sense, first, that little is to be found and, secondly, that the correct interpretation of abnormalities remains a matter of serious debate. Vaginal injuries or abnormalities are more often recognized as possible signs of abuse, while anal and perianal injuries may be dismissed as being associated with



common bowel disorders such as constipation or diarrhea. Penetration by a larger object may result in injury varying from a little swelling of the anal verge to gross tearing of the sphincter, or even bowel perforation. If lubrication is used and the sphincter is relaxed, perhaps no physical evidence will be found. Even penetration by an adult penis can occur without significant injury. After penetration, sphincter laxity, ecchymosis, swelling, and small mucosal tears of the anal verge may be observed as well as sphincter spasm (Fig 6, 7). Within a few days the swelling subsides and the mucosal tears heal. Skin tags can form because of the tears. Repeated anal penetration over a long period may cause a loose anal sphincter and an enlarged opening (Fig 8). Perianal region should also be examined for genital warts (*Condyloma accuminata*) (Fig 9). DNA typology of Human Papilloma Virus must be identified to compare with the suspected perpetrators.



Fig. 6. Perianal ecchymosis



Fig. 7. Mucosal tears



Fig. 8. A loose anal sphincter and an enlarged opening



Fig. 9. Anal warts (Condyloma accuminata)

In performing an anal examination in children, the examiner carefully notes the symmetry and tone of the anus when the buttocks are separated. This can be performed with the child supine or in the more traditional lateral position. Again, positive findings need to be confirmed in the prone position. In addition to symmetry, the physician should note the presence of tags, fissures, or scars. With the exception of a bleeding laceration after a port of sodomy (Fig 10), the presence of anal tags, bumps, and scars may be nonspecific findings that do not confirm whether a child has been sexually abused unless they can be positively related to previously identified acute findings. Evidence of acute anal trauma may be seen if the child is evaluated soon after the assault; however, anorectal changes are rarely definitive indicators of abuse. Swelling of the anus with blue discoloration is suggestive of trauma and may be present up to 48 hours after the event. It is important not to confuse this finding

with hemorrhoids. Perianal erythema is suspicious for trauma. It may also be seen in children with encopresis, poor hygiene, pinworms, or Group A streptococcal or staphylococcal infection. Documented anal injury after sexual assault is distinctively uncommon, and any injuries that do occur can heal quickly and often without visible residua (Hobbs&Wynne, 1989).



Fig. 10. Deep lacerations of the anus

The physician should examine the penis, testicles and perineum for bite marks, abrasions, bruising or suction ecchymosis in the anogenital examination of the male child victim. Evaluation of the anus may be performed with the patient in the supine, lateral recumbent or prone position with gentle retraction of the gluteal folds. The anal examination of the male is the same as in the female.

Current practice dictates that positive findings be recorded photographically or with video, and colposcopic or digital imaging should be of diagnostic quality. As it is clear that utilization of a colposcope improves injury detection colposcope should be the standard of care for examining children who may have been sexually abused.

The American Academy of Pediatrics Committee on Child Abuse and Neglect recommends forensic evidence collection when sexual abuse has occurred within 72 hours of the examination (Kellogg, 2005). Christian et al. (2000) suggest that the best evidentiary material obtained from children post-abuse is found in the first 24 hours. Adams et al.'s (1994) study showed a significantly higher incidence of abnormal genital findings in girls examined within 72 hours of the abuse as compared to those examined a month or more from the event.

Different studies report various percentages of genital injuries depend on time of examination after assault. Percentage of anogenital injuries was reported 84%, and average interval of medical evaluation after assault is 17 hours in a study of Michigan State University (Jones et al., 2003). Some form of forensic evidence was identified in 24.9% of children, all of whom were examined within 44 hours and over 90% of children with positive forensic evidence findings were seen within 24 hours of their assault, presence of genital injury was 23% and in another child sexual assault series (Christian et al., 2000). Nongenital trauma was found in only 5.5% and anomalies were found in the genital



examination of 25.4% of the victims in another review of 511 cases (Dubé&Hébert, 1988). However, the absence of these findings is common in girls who have suffered perceived genital penetration. For example, an observational study of 506 girls age 5 to 17 years, who disclosed penile-genital penetrative abuse, found that most girls did not have definitive physical findings of abuse regardless of the number of reported penetrations. Specifically, no findings were seen on expert review of photocolposcopy in all of the girls less than 10 years of age (N=74), 87 percent of girls  $\geq 10$  years of age with no history of consensual sex (358 of 410 patients), and 82 percent of girls  $\geq 10$  years of age with a history of consensual sex (18 of 22 patients) (Anderst, et al., 2009).

### 3.3 Forensic evidence sampling for laboratory examinations

Rates of recovery of forensic evidence from prepubertal children evaluated for sexual assault vary from 6 to 42%. Early clinical examination within 24 to 72 hours to assault is the key point in determining traumatic changes and forensic evidences. Forensic studies should be performed especially when the examination occurs within 72 hours of acute sexual assault or sexual abuse (Christian et al., 2000).

Forensic evaluation requires collection of numerous specimens. Providers should use evidence collection kits with careful attention to guidelines for specimen collection. Collected samples include

- The victim's clothing
- Swabs and smears from the buccal mucosa, vagina, and rectum and from other areas highlighted by ultraviolet light
- Combed specimens from the scalp and pubic hair
- Fingernail scrapings and clippings
- Control samples of the victim's scalp and pubic hair (ideally, at least 20 to 25 pulled hairs per site)
- Whole blood sample
- Saliva sample

Obviously the most important identifying element for the examiner and the pathologist is the documented presence of an ejaculate, so that the retrieval of the spermatozoa is more critical than ever. It should be stressed that the lack of evidence of ejaculation by no means refutes a complaint of sexual assault. Many of the men convicted for sexual assault may suffer from some form of sexual dysfunction that impaires their ability to ejaculate. If the abuse has occurred within the last 72 hours the presence of sperm should be investigated. Detection of acid phosphatase is another technique used to detect semen, acid phosphatase can, however, normally be found in very low levels in the adult female vagina, so quantification of the enzyme is important to verify ejaculation. The p30 protein is a semen glycoprotein of prostatic origin. The p30-enzyme is linked with an immunosorbent assay. This protein is semen-specific and is not found in vaginal fluids. It is thus a more sensitive and specific method of semen detection. Acid phosphatase and p30 protein test should be helpful when perpetrator is suffered from asospermia or aspermia (Stefanidou et al., 2005).

Identification of genetic markers in blood, saliva and serum (ABO typing and other blood enzyme systems) should be performed within 72 hours of acute sexual assault or sexual abuse. DNA fingerprinting can, nowadays, establish the identity of a perpetrator with a high degree of certainty.

The victim should also be evaluated for pregnancy and sexually transmitted infections by a gynecologist in multidisciplinary approach. The diagnosis of sexually transmitted diseases is important not only to the care of the victim but also in determining the fact of sexual contact. This evidence may be prima facie, or confirmatory. Gonorrhea or syphilis infections are diagnostic of sexual abuse after perinatal transmission has been ruled out. Herpes type 2, Chlamydia, Trichomonas, and condyloma infections are extremely unlikely to be due to anything but abuse, particularly in children beyond infancy. HIV, and herpes simplex virus type 2 should also be tested (Kawsar et al., 2008). Finally, toxicological analysis of blood and urine should be performed in case that the child has been abused while under the influence of drugs.

3.4 Interpretation of findings

The interpretation of findings in children with suspected sexual abuse depends upon the constellation of historical, physical, and laboratory findings. The history is often the most important part of the evaluation. The provision by the child of a spontaneous, clear, consistent, and detailed description of sexual molestation is specific for sexual abuse and should be reported to legal authorities and/or child protective services. Adams et. al. published a series of criteria about interpreting physical and laboratory findings in suspected child sexual abuse in 2007. (Table2).

A Product of an ongoing collaborative process by child maltreatment physician specialists, under the leadership of Joyce A. Adams, MD
Findings documented in newborns or commonly seen in non-abused children:
(The presence of these findings generally neither confirms nor discounts a child's clear disclosure of sexual abuse)
Normal variants
1. Periurethral or vestibular bands 2. Intravaginal ridges or columns 3. Hymenal bumps or mounds 4. Hymenal tags or septal remnants 5. Linea vestibularis (midline avascular area) 6. Hymenal notch/cleft in the anterior (superior) half of the hymenal rim (prepubertal girls), on or above the 3 o'clock - 9 o'clock line, patient supine 7. Shallow/superficial notch or cleft in inferior rim of hymen (below 3 o'clock - 9 o'clock line) 8. External hymenal ridge 9. Congenital variants in appearance of hymen, including: crescentic, annular, redundant, septate,cribiform, microperforate, imperforate 10. Diastasis ani (smooth area) 11. Perianal skin tag 12. Hyperpigmentation of the skin of labia minora or perianal tissues in children of color, such as Mexican-American and African-American children 13. Dilation of the urethral opening with application of labial traction 14. "Thickened" hymen (May be due to estrogen effect, folded edge of hymen, swelling from infection, or swelling from trauma. The latter is difficult to assess unless follow-up examination is done)



Findings commonly caused by other medical conditions:
15. Erythema (redness) of the vestibule, penis, scrotum or perianal tissues. (May be due to irritants, infection or trauma *)
16. Increased vascularity (“Dilatation of existing blood vessels”) of vestibule and hymen. (May be due to local irritants, or normal pattern in the non estrogenized state)
17. Labial adhesions. (May be due to irritation or rubbing)
18. Vaginal discharge. (Many infectious and non-infectious causes, cultures must be taken to confirm if it is caused by sexually transmitted organisms or other infections.)
19. Friability of the posterior fourchette or commissure (May be due to irritation, infection, or may be caused by examiner's traction on the labia majora)
20. Excoriations/bleeding/vascular lesions. These findings can be due to conditions such as lichen sclerosus, eczema or seborrhea, vaginal/perianal Group A Streptococcus, urethral prolapse, hemangiomas)
21. Perineal groove (failure of midline fusion), partial or complete
22. Anal fissures (Usually due to constipation, perianal irritation)
23. Venous congestion, or venous pooling in the perianal area. (Usually due to positioning of child, also seen with constipation)
24. Flattened anal folds (May be due to relaxation of the external sphincter or to swelling of the perianal tissues due to infection or trauma*)
25. Partial or complete anal dilatation to less than 2 cm (anterior-posterior dimension), with or without stool visible. (May be a normal reflex, or may have other causes, such as severe constipation or encopresis, sedation, anesthesia, neuromuscular conditions,)
INDETERMINATE Findings: Insufficient or conflicting data from research studies: (May require additional studies/evaluation to determine significance. These physical/laboratory findings may support a child's clear disclosure of sexual abuse, if one is given, but should be interpreted with caution if the child gives no disclosure. In some cases, a report to child protective services may be indicated to further evaluate possible sexual abuse.)
Physical Examination Findings
26. Deep notches or clefts in the posterior/inferior rim of hymen in pre-pubertal girls, located between 4 and 8 o'clock, in contrast to transections (see 41)
27. Deep notches or complete clefts in the hymen at 3 or 9 o'clock in adolescent girls.
28. Smooth, non-interrupted rim of hymen between 4 and 8 o'clock, which appears to be less than 1 millimeter wide, when examined in the prone knee-chest position, or using water to “float” the edge of the hymen when the child is in the supine position.
29. Wart-like lesions in the genital or anal area. (Biopsy and viral typing may be indicated in some cases if appearance is not typical of Condyloma accuminata)
30. Vesicular lesions or ulcers in the genital or anal area (viral and/or bacterial cultures, or nucleic acid amplification tests may be needed for diagnosis)
31. Marked, immediate anal dilation to an anterior-posterior diameter of 2 cm or more, in the absence of other predisposing factors
Lesions with etiology confirmed: Indeterminate specificity for sexual transmission (Report to protective services recommended by AAP Guidelines <sup>2</sup> unless perinatal or horizontal transmission is considered likely)
31. Genital or anal Condyloma accuminata in child, in the absence of other indicators of

abuse.
32. Herpes Type 1 or 2 in the genital or anal area in a child with no other indicators of sexual abuse.
Findings Diagnostic of Trauma and/or Sexual contact (The following findings support a disclosure of sexual abuse, if one is given, and are highly suggestive of abuse even in the absence of a disclosure, unless the child and/or caretaker provide a clear, timely, plausible description of accidental injury. (It is recommended that diagnostic quality photo-documentation of the examination findings be obtained and reviewed by an experienced medical provider, before concluding that they represent acute or healed trauma. Follow-up examinations are also recommended.)
Acute trauma to external genital/anal tissues
33. Acute lacerations or extensive bruising of labia, penis, scrotum, perianal tissues, or perineum (May be from unwitnessed accidental trauma, or from physical or sexual abuse)
34. Fresh laceration of the posterior fourchette, not involving the hymen. (Must be differentiated from dehiscence labial adhesion or failure of midline fusion. May also be caused by accidental injury or consensual sexual intercourse in adolescents
Residual (healing) injuries
(These findings are difficult to assess unless an acute injury was previously documented at the same location)
36. Perianal scar (Rare, may be due to other medical conditions such as Crohn's Disease, accidental injuries, or previous medical procedures)
37. Scar of posterior fourchette or fossa. (Pale areas in the midline may also be due to linea vestibularis or labial adhesions)
Injuries indicative of blunt force penetrating trauma (or from abdominal/pelvic compression injury if such history is given)
38. Laceration (tear, partial or complete) of the hymen, acute.
39. Ecchymosis (bruising) on the hymen (in the absence of a known infectious process or coagulopathy).
40. Perianal lacerations extending deep to the external anal sphincter (not to be confused with partial failure of midline fusion)
41. Hymenal transection (healed). An area between 4 and 8 o'clock on the rim of the hymen where it appears to have been torn through, to or nearly to the base, so there appears to be virtually no hymenal tissue remaining at that location. This must be confirmed using additional examination techniques such as a swab, prone knee-chest position or Foley catheter balloon (in adolescents), or prone-knee chest position or water to float the edge of the hymen (in prepubertal girls). This finding has also been referred to as a "complete cleft" in sexually active adolescents and young adult women.
42. Missing segment of hymenal tissue. Area in the posterior (inferior) half of the hymen, wider than a transection, with an absence of hymenal tissue extending to the base of the hymen, which is confirmed using additional positions/methods as described above.
Presence of infection confirms mucosal contact with infected and infective bodily secretions, contact most likely to have been sexual in nature:
43. Positive confirmed culture for gonorrhea, from genital area, anus, throat, in a child outside the neonatal period.

44. Confirmed diagnosis of syphilis, if perinatal transmission is ruled out.
45. Trichomonas vaginalis infection in a child older than 1 year of age, with organisms identified by culture or in vaginal secretions by wet mounts examination. by an experienced technician or clinician)
46. Positive culture from genital or anal tissues for Chlamydia, if child is older than 3 years at time of diagnosis, and specimen was tested using cell culture or comparable method approved by the Centers for Disease Control.
47. Positive serology for HIV, if perinatal transmission, transmission from blood products, and needle contamination has been ruled out.
Diagnostic of sexual contact
48. Pregnancy
49. Sperm identified in specimens taken directly from a child's body.

Table 2. Approach to Interpreting Physical and Laboratory Findings in Suspected Child Sexual Abuse. (Adams et. al., 2007)

4. Management of sexual abuse in children and adolescents

The management of sexual abuse involves prevention of sexually transmitted infections (STI) and pregnancy. Psychosocial support and anticipatory guidance should be offered to the victims and their nonoffending caregivers.

4.1 Sexually transmitted infections prophylaxis

A prepubertal child will acquire a sexually transmitted infection (STI) as the result of sexual abuse is low and varies according to the local prevalence of STIs. Thus asymptomatic children do not generally require STI prophylaxis. However, cultures must be obtained prior to treatment whenever prophylaxis is prescribed (Siegel et. al, 1995). For adolescents, STI prophylaxis is recommended for those who present within 72 hours of the event (because of the high prevalence of preexisting asymptomatic infection, the risk of pelvic inflammatory disease, and the possibility of loss to follow-up). For pubertal females who present after 72 hours, STI prophylaxis should be prescribed if the assailant is known to be infected, the victim has signs or symptoms of infection, or at the victim's request. (American Academy of Pediatrics, 2006).

4.2 Pregnancy prophylaxis

The highest risk of pregnancy occurs during the three days preceding and including ovulation. Knowing the timing of the event in relation to the patient's ovulatory period is helpful in further assessing risk. Emergency contraception (postcoital contraception) should be offered to all pubertal female patients and should be strongly advised to females at highest risk for pregnancy.

4.3 Psychological support

The child's physical and emotional well-being are of primary concern. The child should be reassured that what happened was not the child's fault and that he or she did nothing wrong. Children in whom sexual abuse is confirmed or suspected should be referred to a mental health professional for evaluation and counseling. The family of the victim may also need treatment and support to cope with the emotional trauma of their child's abuse

Short-term sequelae of sexual abuse include fear, disturbances in sleep and eating, phobias, guilt, shame, anger, depression, school problems, delinquency, aggression, hostility, antisocial behavior, inappropriate sexual behavior, and running away. Longer-term effects include depression, sleep problems, eating disorders, obesity, feelings of isolation, stigmatization, poor self-esteem, problems with interpersonal relationships, negative effect on sexual function, revictimization, substance abuse, and suicidal behavior. Psychosocial follow-up is the key point to avoid these short-term or longer-term sequelae (Hymel & Jenny 1996)

#### 4.4 Social support

Social support is one of the most important steps in the management of abused children. The case should be reported to the social services or child protective services after forensic investigation completed. Social support should be maintained to prevent further harm to children from sexual or other types of abuse or neglect. When the case is reported to social services, they must look into it if they think there is a real risk to the safety or well-being of the child. Social services will decide if the child needs protection and what needs to be done to protect them.

They must decide, or contribute to decision-making in some key areas. Is a child safe? Should a child remain at home, or be removed? What type and level of services does this child/family need? Can these services be offered while the child is living with the alleged abuser? Of the myriad problems presented by this family, which one(s) should be addressed, and which ones should be addressed first? How therapeutically accessible are the members of this family? At what stage of change are they? What is the level of future risk to the child (as opposed to immediate safety)?

- Social services accomplish all these services through:
- Assessing suspected cases of abuse and neglect
- Assisting the family in diagnosing the problem
- Providing in-home counseling and supportive services to help children stay at home with their families
- Coordinating community and agency services for the family
- Petitioning the court for removal of the child, if necessary
- Providing public information about child abuse, neglect, and dependency.

#### 5. Conclusion

- Child Sexual Abuse defined as contacts between a child and an adult or other person significantly older or in a position of power or control over the child, where the child is being used for sexual stimulation of the adult or other person.
- The United Nations Convention on the Rights of the Child (CRC) is an international treaty that legally obliges states to protect children's rights. Articles 34 and 35 of the CRC require states to protect children from all forms of sexual exploitation and sexual abuse.
- The prevalence of sexual assaults, especially among children and adolescent, is thought to be extremely higher than in literature.
- Children and especially adolescent females are sexually assaulted more frequent comparatively to adults.
- Children are sexually assaulted in every ages of childhood and adolescence.

- Sexual assault victims are mostly female and assaulted by an acquaintance not stranger.
- Children are mostly assaulted indoor and during the day.

Most of the child abuser is male and young rather than an old person.

- Victims of child sexual assault generally do not disclose the assault.
- During forensic investigation, obtaining an unbiased history from a child who may have been sexually abused may be the most important part of the evaluation, particularly since diagnostic physical findings are frequently absent.
- In order to minimize child interviews, these assessments should be held in settings such as child advocacy centers, where forensic interviewers and medical clinicians, child protective service workers, and police and district attorneys can work jointly to address the legal and protective issues in a coordinated fashion.
- Prior to physical examination, written, witnessed informed consent to examination, collection of specimens, release of information to authorities, and taking photographs should be obtained by parents, relatives or acquaintances.
- All clothing, the body, oral cavity and genitalia should be examined for any evidences of sexual assault.
- Early clinical examination within 24 to 72 hours to assault is the key point in determining traumatic changes and forensic evidences.
- Examiners should use evidence collection kits which guidelines for specimen collection for laboratory analysis.

The interpretation of findings in children with suspected sexual abuse depends upon the constellation of historical, physical, and laboratory findings.

- The management of sexual abuse involves prevention of sexually transmitted infections (STI) and pregnancy. Psychosocial support and anticipatory guidance should be offered to the victims and their nonoffending caregivers.

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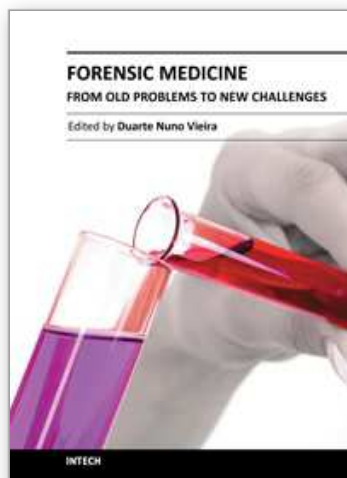
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Phone: +86-21-62489820  
Fax: +86-21-62489821



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