Research Journal of Medical Sciences 4 (3): 157-165, 2010
ISSN: 1815-9346

Dentist's Action after Identifying Child Sexual Assault

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Abstract: Child sexual abuse is a form of child maltreatment with a variety of sexual offences which has intervened widely in modern societies. It is a morbid phenomenon which has turned to be one of the most high-profile crimes, outlawed in every developed country. The purpose of this report is to review the dental aspects in the identification of child sexual assault. The symptoms vary and may be developed either as psychological alteration or as physical signs or as a combination of both. One can notice oral injuries (e.g., Orofacial trauma) or infections as a sign of a preceded sexual abuse as the oral cavity is a frequent site of this kind of assault. Oral, perioral and pharyngeal gonorrhea in prepubertal children is another pathognomic sign. Child maltreatment may also affect its behaviour in the dental office. It is common sense that treating a dental patient involves valuation of its general medical condition and not only looking inside its mouth. Injuries inflicted by one's mouth may leave clues regarding the time and nature of the injury as well as the identity of the perpetrator. The contribution of the dentist can be remarkable as he can be the first person that comes in touch with the child, recognising signs and symptoms of preceded sexual maltreatment. After identifying such conditions he is obliged by the law to refer the child for further and meticulous examination by a specialist doctor and provide the authorities with all the dental and medical documents that he possesses.

Key words: Child sexual abuse, types, signs, symptoms, risk factors, statistics, international law, forensic odontology

INTRODUCTION

Child sexual abuse under the law is an umbrella term describing criminal and civil offenses in which an adult engages in sexual activity with a minor or exploits a minor for the purpose of sexual gratification. It is a morbid phenomenon which has gained significant public attention in the past few decades despite the fact it has been present throughout history.

Today it has ended up to be one of the most high-profile crimes outlawed in every developed country. Since the 1970s the sexual abuse of children and child molestation has increasingly been recognized as deeply damaging to children and thus unacceptable for society as a whole (Masson, 1984; Acuff *et al*., 1999).

It's worth mentioning that the first published study dedicated specifically to child sexual abuse appeared in France in 1857 entitled: Medical-Legal Studies of Sexual Assault (Etude Médico-Légale sur les Attentats aux Mœurs) by Auguste Ambroise Tardieu, the noted French pathologist and pioneer of forensic medicine (Masson, 1984).

The American Psychiatric Association states that children cannot consent to sexual activity with adults and condemns any such action: An adult who engages in sexual activity with a child is performing a criminal and immoral act which never can be considered normal or socially acceptable behavior.

Types of child sexual abuse: Sexual abuse is defined as a form of child maltreatment with a variety of sexual offenses including: sexual assault which is an adult touches a minor for the purpose of sexual gratification, sexual molestation which is an adult engages in non-penetrative activity with a minor for the purpose of sexual gratification for example, exposing a minor to pornography or to the sexual acts of others, sexual exploitation which is an adult victimizes a minor for advancement, sexual gratification or profit for example, prostituting a child and creating or trafficking in child pornography and sexual grooming-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.

MATERIALS AND METHODS

The number of reported cases of child sexual abuse appears to rise annually. Today it has ended up to be a very crucial worldwide issue which demands public responsibility and concern. In 2008 is estimated that more

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than 90000 children were victims of child maltreatment and 10% of them were sexually abused according to the U.S Health Department (Statistics, prevalence and Consequences in Child Sexual Abuse, Darkness to light Confronting Child Sexual Abuse with Courage).

Frequency of types of abuse: A child may suffer various types of abuse according to the way it is expressed in its life (Stavrianos and Metska, 2002). In particular:

Types	Frequency (%)
Neglect	63
Physical	19
Sexual	10
Psychological	8

Additionally from the race's standpoint more than half of the victims (51%) had experienced child sexual abuses were white whereas the lowest incidence is recorded amongst Asians (1%). Approximately 20-25% of women and 5-15% of men were sexually maltreated when they were children. Most sexual abuse offenders are acquainted with their victims approximately 30% are relatives of the child, most often fathers, uncles or cousins around 60% are other acquaintances such as friends of the family, babysitters or neighbours; strangers are the offenders in approximately 10% of child sexual abuse cases. Most child sexual abuse is committed by men; women commit approximately 14% of offences reported against boys and 6% of offences reported against girls. According to statistics the median age for reported child sexual abuse is 9 years old (Statistics, prevalence and Consequences in Child Sexual Abuse, Darkness to light Confronting Child Sexual Abuse with Courage).

The very idea of child sexual abuse is controversial and easily disputable. It must be underlined that all these are just numbers, certainly really alarming and shocking however, on the other hand doesn't depict clearly the reality. Once these figures correspond to human lives this phenomenon reaches burgeoning dimensions. Child sexual abuse is a multifaceted phenomenon whose roots are found both in mental and pschycological disorders as well as in the crises of the family institution stemming from other social problems including economic crises, unemployment and various addictions (Stavrianos and Metska, 2002).

Dentist's role emerges from the anthropocentric aspect of this profession as one must be a powerful ally on behalf of the health of patients, attending to more dimensions of the patient's presentation and management apart from the diagnosis and treatment of the oral pathobiology. There are cases where a dentist has to confront one's profession more as a vocation (Stavrianos and Metska, 2002).

International law regarding child sexual abuse: An adult's sexual intercourse with a child below the legal age of consent is defined as statutory rape based on the principle that a child is not capable of consent and that any apparent consent by a child is not considered to be legal consent.

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. As of November 2008, 193 countries are bound by the CRC (Child Rights Information Network. Convention on the Rights of the Child. Retrieved on 26 November 2008). Including every member of the United Nations except the United States and Somalia.

The number of laws created in the 1980 and 1990s began to create greater prosecution and detection of child sexual abusers. During the 1970s a large transition began in the legislature related to child sexual abuse. In the United States Megan's Law which was enacted in 2004 gives the public access to knowledge of sex offenders nationwide (Dinwiddie *et al*., 2000). In recent years a notable educational program is the Prevent Abuse and Neglect through Dental Awareness (PANDA) Coalition, organized by Lynn Douglas Mouden. PANDA which began with the model program in Missouri in 1992 is now in 34 states in the United States and has 2 coalitions in Romania (Vale, 1997; Mouden, 1998). New York State for example requires all dentists to complete a 2 h course in the identification and reporting of child abuse as a condition of a relicensure. Not only in America but also in Japan have been made efforts in the urgent move to tackle this problem.

Risk factors: Child sexual abuse has intervened in all social groups and may occur in any cultural, ethnic and income groups in either rich or poor households with no discrimination. Around 95% of the victims have confessed that they know their perpetrators (Stavrianos and Metska, 2002). Actually there isn't any particular profile that can be attributed to a child abuser however, they are usually presented with particular behavior statements. For instance people with history of child abuse in their own childhood or with a preceded abuse against other children with alcohol or drug addiction with anger management especially to poor parenting and coping skills especially related to problem solving and making or having choices (Stavrianos and Metska, 2002). Moreover, religion and

social models may play an important role as well. Children with mental problems are more vulnerable and are appeared with higher incidence of sexual abuse than normal children (Kenney and Spencer, 1995).

Forensic odontology: Forensic odontology is a specialty of dentistry recognized in a few countries (USA, China, Scandinavian countries) and is defined as the proper handling, examination and evaluation of dental evidence which will be then presented in the interest of justice by using dental records or ante-mortem photographs. Purely it is the overlap between the dental and the legal professions. It derives from the latin word forum which is the place where legal matters are discussed. The first forensic dentist was Paul Revere (USA) who was occupied with the identification of fallen revolutionary soldiers (Cottone and Standish, 1982; Stavrianos, 2009). Forensic dentistry is occupied with a wide range of fields including:

- Identification of the living or the deceased which is the most common role of Forensic odontology
- Identification, analysis and comparison of bitemark
- Identification, analysis and comparison of lip and rugae print and patterned injury
- Identification of dental specimens at crime scene or elsewhere for instance in mass fatalities
- Evaluation of oro-facial trauma
- Malpractice and negligence claims
- Age estimation (Stavrianos, 2009; Spencer, 2004)

RESULTS AND DISCUSSION

Signs and symptoms of child sexual abuse: Child sexual abuse can result in both short-term and long-term harm including psychopathology in later life (Nelson *et al*., 2002; Widom *et al*., 2007; Arnow, 2004). It can have an impact on psychological, emotional, physical and social aspect including depression (Roosa *et al*., 1999; Widom, 1999; Stevens-Simon *et al*., 2000), post-traumatic stress disorder (Arehart-Treichel, 2005; Levitan *et al*., 2003), anxiety (Arnow, 2004), eating disorders, poor self-esteem, dissociative and anxiety disorders; general psychological distress and disorders such as somatization, neurosis, chronic pain (Jessee, 2003; Faller Kathleen, 1993), sexualized behaviour, school/learning problems and behaviour problems including substance abuse destructive behaviour, criminality in adulthood and suicide (Freyd *et al*., 2005; Dozier *et al*., 1999; Kendall-Tacket *et al*., 1993; Gauthier *et al*., 1996; Briere, 1992; Vadiakas *et al*., 1991). Anne Hastings described these changes in attitudes towards child sexual abuse as the beginning of one history's largest social revolutions.

As far as the physical aspect is concerned bite marks are probably the most frequent expressions after a child sexual abuse. They are defined as the distinctive tooth patterns in a wound that may have forensic or legal implications s a bite mark. Its shape can give useful clues about the person who caused it and may lead to the implication or exclusion of an individual under investigation. Acute or healed bite marks may indicate abuse. Bite marks should be suspected when ecchymoses, abrasions or lacerations are found in an elliptical or ovoid pattern. An intercanine distance measured <3.0 cm is also suspicious for an adult human bite. Bite marks may appear with a central area of ecchymoses the contusion which can be caused by 2 possible phenomena either by a positive pressure from the closing of the teeth with disruption of small vessels or by a negative pressure caused by suction and tongue thrusting (Sperber, 1989; Wagner, 1986). It's remarkable that bites produced by dogs and other carnivorous animals tend to tear flesh whereas, human bites compress flesh and can cause abrasions, contusions and lacerations but rarely avulsions of tissue. So, the pattern, the size, the contour and the colour of the bite mark should be evaluated by observing and documenting the bite marks characteristics photographically with an identification tag and a scale marker (e.g., ruler) in the photograph (Kellogg, 2005).

Apart from the physical influence, the oral cavity may be a central focus for physical abuse because of its significance in communication and nutrition (Folland *et al*., 1977). One can notice oral injuries (e.g., orofacial trauma) or infections as a sign of a preceded sexual abuse, despite the fact that the oral cavity is not a frequent site of sexual abuse in children (De Jong, 1986; Muram, 1989). Injuries inflicted by one's mouth may leave clues regarding the timing and nature of the injury as well as the identity of the perpetrator. So, when a young patient visits the surgeon with an oral trauma, it should be examined if the clinical findings come along with the narration of the facts by the caregiver or the child itself so as to exclude the incidence of assault. Furthermore oral and perioral gonorrhea in prepubertal children is pathognomic of sexual assault and demands appropriate culture techniques and confirmatory testing in order to be diagnosed (Everett *et al*., 2010) though it is rare among prepubertal girls who are evaluated for sexual abuse (Nelson *et al*., 1976). Also pharyngeal gonorrhea is another clinical sign in spite of the fact it is frequently asymptomatic (Stevens-Simon *et al*., 2000).

It must be underlined that when oral-genital contact is confirmed by history or examination findings, universal testing for sexually transmitted diseases within the oral cavity is controversial; the clinician should consider risk

Fig. 1: Extensive abrasion in the left shoulder and chest of a sexually abused child that is mentally retarted

factors (e.g., chronic abuse, perpetrator with a known sexually transmitted disease) and the child's clinical presentation in deciding whether to conduct such testing. Moreover, human papillomavirus infections may be transmitted sexually through oral-genital contact, vertically from mother to infant during birth or horizontally through, nonsexual contact from a child or caregiver's hand to the genitals or mouth (Schlesinger *et al*., 1975). Although, human papillomavirus infection may result in oral or perioral warts, the mode of transmission remains uncertain and debatable. Unexplained injury or petechiae of the palate particularly at the junction of the hard and soft palate may be evidence of forced oral sex (Cameron *et al*., 1966).

Any intraoral soft tissues injuries of the infant or very young child must make one highly suspicious of abuse. According to many researchers, the most common injury to the face may be that lesions in which the oral mucosa is torn away from the gingiva. It may occur in around half of the reported victims. Early resorption of the roots of the maxillary primary central incisors indicates possible early trauma to these teeth.

In 1966, Cameron noted that the combination of the split upper lip plus laceration of the alveolar ridge soft tissue frequently with an incisor missing is considered almost pathognomic of child abuse (Kenney and Spencer, 1995; Cottone and Standish, 1982) (Fig. 1).

If a victim provides a history for oral-penile contact, the buccal mucosa and tongue can be swabbed with a sterile cotton-tipped applicator and then the swab can be air dried and packaged appropriately for laboratory analysis. However, specialized hospitals and clinics equipped with protocols and experienced personnel are best suited for collecting such material and maintaining a chain of evidence necessary for investigations. Oral lesions can be another pathognomic sign of a preceded sexual abuse appearing with a wide range of expressions including:

- Bruises
- Lacerations
- Abrasions
- Oral mucosa torn from gingiva
- Darkened or non-vital teeth
- Trauma to the lip/tongue
- Other soft tissue injuries
- Fractures of the jaw (Vale, 1997; Kenney and Spencer, 1995)

When the physicians examine a child they have to be aware of its behavior as well as of its caregiver. There may be signs which reveal or make us suspicious for a sexual assault case. In particular, a child with either a history of multiple injuries that resemble to an identifiable object or unexplainable fractures of bones and varying colours bruises accompanied with a caregiver's explanation non-compatible with clinical data may arise suspicions for preceded sexual assault raise suspicions. Moreover a delay in seeking care for the injury or reluctance to discuss about the accident as well as a general difficulty to cooperate with the child's custodian and a tendency of disorientation from the real problem may be make us a little more suspicious leading us to further investigation of the case. However, it is really crucial to be very careful with the evaluations and the approach of such cases as these accusations are really heavy and may cause considerable harm to the child and its environment as well as to the doctor-parent relationship whether are proved to be wrong (Kenney and Spencer, 1995).

In order to avoid misunderstandings, the researchers have to bear in mind cases which may be completely irrelevant to sexual abuse, misleading us but are part of the general dental or medical history of the child. For example, systematic diseases (e.g., leukaemia, osteogenesis imperfecta), common injuries as well as the Sudden Infant Death Syndrome (SIDS), The Mongolian Spot a discolouration in the lower back and buttocks, back of the legs and/or shoulders of the child, Cao gio signs caused by rubbing or scratching the child's skin with a coin producing a dramatic ecchymosis that is usually localized in the intracostal spaces of the back or parallel to the Spine- and Moxibustion-circular burn like lesions on the skin of the child belong in this category (Stavrianos and Metska, 2002).

The researchers shouldn't neglect the vital role that the dental staff might play as they have to be familliar with the appearance of bitemark evidence which can be

Table 1: Suggested guidelines for making the decision to report sexual abuse of children

History	Behavioural symptoms	Physical examination	Diagnosis tests
Clear statement	Present or absent	Normal or abnormal	Positive or negative
None or vogue	Present or absent	Normal or non-specific	Positive for *C.trachomatis*, gonorrhea *C. vaginalis*, HIV, syphilis or herpes
None or vogue	Present or absent	Concerning or diagnostic findings	Positive or negative
Vague or history by parent only	Present or absent	Normal or non-specific	Negative
None	Present	Normal or non-specific	Negative

observed in the dental office during a regular patient's visit. It has been reported that approximately two third of visible injuries to a child will be located in the region of the head and neck (Mouden, 1998). One must be observant for possible patterned injuries such as finger, ligature, burn or bite marks or marks possibly caused by a belt, strap or cord. Multiple bruising, loss of hair (hair pulling) or injuries to the ears should also raise suspicion (Jessee, 1995; Muram, 1989).

Another aspect of sexual abuse is that the child's sexual assault certainly may affect his or her behaviour in the dental office. This may range from being quiet and withdrawn to acting out and being uncooperative. In addition they may face difficulty in keeping dental care appointments as some experiences in the dentist's office may trigger unpleasant memories of the abuse experience and such victims may skip dental care/appointments as it was reported in the American Dental Association. The dentist is not expected to recognize the child's behaviour as being a manifestation of a specific type of abuse nor is the dentist expected to recognize the child victim of sexual or internet abuse. Children who present acutely with a recent history of sexual abuse may require specialized forensic testing for semen and other foreign materials resulting from assault. If a victim provides a history for oral-penile contact, the buccal mucosa and tongue can be swabbed with a sterile cotton-tipped applicator and then the swab can be air dried and packaged appropriately for laboratory analysis. However, specialized hospitals and clinics equipped with protocols and experienced personnel are best suited for collecting such material and maintaining a chain of evidence necessary for investigations. When questions arise or when consultation is needed, a pediatric dentist or a dentist with formal training in forensic odontology can ensure appropriate testing, diagnosis and treatment.

It is common sense that treating a dental patient involves more than looking inside the mouth. Observe the child's actions, behaviour, physical movements and verbal communication assess, if they are appropriately age-related to the patient. Perform a quick visual assessment of the child's face, head, neck, hands and any other exposed area of the body. The diagnosis of child sexual abuse often can be made on the basis of a child's history. Sexual abuse is rarely diagnosed on the basis of only physical examination or laboratory findings (Kerns and Ritter, 1992; Adams, 2001; Muram, 1989). The interpretation of physical findings continues to evolve as evidence-based research becomes available (Bays and Jenny, 1990). Thus, first of all, the researchers have to interview the involved parts gaining confidence and creating a trusting environment so as to evaluate the versions of the incidence.

The physician, the multidisciplinary team evaluating the child and the courts must establish a level of certainty about whether a child has been sexually abused. In the Table 1, there are suggested guidelines for making the decision to report sexual abuse of children based on currently available information. For example, the presence of semen, sperm or acid phosphatase; a positive culture for *N. gonorrhoeae* or *C. trachomatis* or a positive serologic test for syphilis or HIV infection make the diagnosis of sexual abuse a near medical certainty, even in the absence of a positive history if perinatal transmission has been excluded for the STDs. The differential diagnosis of genital trauma also includes accidental injury and physical abuse. This differentiation may be difficult and may require a careful history and multidisciplinary approach. Because many normal anatomic variations, congenital malformations and infections or other medical conditions may be confused with abuse, familiarity with these other causes is important (Kellogg *et al*., 1998; Muram, 1989).

It is not the dentist's responsibility to either lift or remove the patient's clothing to search for physical injuries. If the dentist suspects physical abuse with a young patient then he or she should have another dental staff member also witness the injuries and assist in their documentation. A written description with diagrams can document the locations, shapes, sizes etc., of injuries. Intra-oral injuries might necessitate the need for dental X-rays. The dentist is allowed by the law to obtain X-rays of a child without the consent of the parent when the dentist is diagnosing the case as one of possible child abuse and determining the extent of such child abuse. If there are injuries present such as on the face on the child that lead the dentist to suspect child abuse, it is recommended that photographs be taken of the injuries. Most dentists have available a clinical camera, either 35 mm or digital. A photograph should be taken of the entire face as well as close ups of the individual injuries. The close-up photographs should include some type of scale (ruler) placed near the injury but not covering any

part of the injury. X-rays, photographs etc., should be documented. When reporting the suspected abuse, it is recommended the dentist advise the authorities what documentation of injuries the dentist obtained. X-rays or photographs taken in the dental office may be the only evidence available to authorities. It cannot be assured that subsequent photographs will be taken and if they are what quality they will be and of what stage of healing the injuries may have reached (Spencer, 1995, 2004).

If a dentist identify a sexual assault but is not willing to get involved in this situation he can cooperate with a forensic odontology. Those active in this field may be called upon to evaluate patterned injuries in child abuse. Usually, these injuries will be bite marks inflicted upon the child. The odontologist may have the opportunity to examination in the child, living or deceased. More often the odontologist will be supplied with photographs and asked to give an opinion as to the presence of bite marks, the quality of the marks and whether an adult or child may have inflicted the marks. Too often the supplied photos are of poor quality taken at too great a distance from the injury, out of focus or without the presence of a scale (ruler). An experienced odontologist will take quality photographs when he or she has the opportunity to see the child whether in the hospital ER, morgue, etc. Bite marks on a child's body, unless observed soon after the bite was inflicted often present as a diffuse bruising of void or elliptical shape with little or no definition of individual teeth (Sperber, 1989; Spencer, 2004). Often, the odontologist can only determine if it is a human bite mark and perhaps if it was inflicted by an adult or young child. It has been the research's forensic experience that just this amount of information can lead the abuser to admit their involvement with the child or can rule out certain individuals who may have had access to the child. Proper photography of patterned injuries (bite marks) in the physician's or dentist's office, the hospital emergency room or at the police station can greatly aid in the subsequent analysis and potential comparison of the marks (Spencer, 2004).

In cases of child abuse-homicide, the forensic odontologist will take photographs of the suspected patterned injuries. If there is any third dimension to an injury, the odontologist will take an impression with a dental impression material in order to have a model of the injury to use for potential comparison to dental models of any suspected biters. It also is recommended that the odontologist resects the tissue involving the bite mark and properly preserve it for later transillumination. This often can tell the odontologist an adult or teenager inflicted the bite on the child not the young sibling the suspect may try to blame for the abuse. Good forensic evidence collection with patterned injuries in child abuse can be of great assistance to the law enforcement investigator and the prosecutor (Jessee, 1995). In some cases, the defendant has pleaded guilty just prior to trial or there was a stipulation as to the bite mark evidence rather than having the odontologist testifies. In order to make a reliable identification, many factors should be considered such as matching of striations, whorls, indentations, pitting, abrasions and often this is facilitated by the computer-enhanced photography which is now available.

The scientific community recognizing the catalytic role that a dentist might play in the identification of child sexual abuse runs educational programs in order to familiarize dentists with the potentials of Forensic Odontology. Paediatric dentists and oral and maxillofacial surgeons whose advanced education programs include a mandated child abuse curriculum can provide valuable information and assistance to physicians about oral and dental aspects of child abuse and neglect. The Prevent Abuse and Neglect Through Dental Awareness (PANDA) organisation has made great efforts to this direction as well and It has trained thousands of physicians, nurses, teachers, child care providers, dentists and dental auxiliaries as another resource for physicians seeking information on this issue. PANDA has expanded its activities around the world. New Jersey has one of the U.S.A's few PANDA programs which was modelled after Missouri's PANDA Coalition. The chairman of the Missouri Dental Association's Council on Dental Health Education noted an 80% increase in the reporting rate of dentists since the program's inception in 1992 (Stavrianos and Metska, 2002; Vale, 1997; Mouden, 1998).

According to New Jersey law 9:6-8.9-14, concerning abuse, anyone suspecting child abuse is required to report and if that person does not report that person is a disorderly person and can be fined and/or imprisoned. In 1993 the ADA house of Delegates passed resolution 23 H-1993 amending the ADA Principles of Ethics Code and Conduct to include child abuse. This made dentists ethically obligated to be familiar with all signs of child abuse and to report suspected cases to appropriate agencies. Furthermore, Resolution 141H-1993 urged to ADA to provide resources and training in the topic; therefore, the ADA has recently updated its publication entitled The Dentist's role in identifying and Reporting Child Abuse. This publication is now available from the ADA (Willumsen, 2008). Physician members of multidisciplinary child abuse and neglect teams are encouraged to identify such dentists in their communities to serve as consultants for these teams. In addition, physicians with experience or expertise in child abuse and

neglect can make themselves available to dentists and dental organizations as consultants and educators. Such efforts will strengthen the ability to prevent and detect child abuse and neglect and enhance the ability to care for and protect children.

It is worth mentioning a hospital survey that was undertaken in 1995, concerning the physical manifestations of child abuse to the head, face and mouth. According to this study, the incidence of physical injury to the head, face mouth and neck of 266 suspected cases of child abuse was studied at Texas Children Hospital in Houston from January 1993 to December 1994, 74.8% of the children were under the age of 3 years. The most frequently occurring injury was contusion or ecchymosis of soft tissue while the face was the part of the body injured most often. Although, 66.2 % of the children reviewed had some type of injury to the head, face, mouth or neck, only 2.6% of intraoral injuries were mentioned. These results point out the need for dentists to become active participants on multidisciplinary child maltreatment teams (Naidoo, 2000). In another study realised in Cape Town, South Africa they examined the correlation among head, face and neck injuries associated with child abuse. The mean age of the sample was 4.75 year 54.3% were boys and 45.7% were girls. Most of the crimes were committed in the child's own home (88.7%). The head, face, neck and mouth were the sites of physical injury in 67% of the 300 cases reviewed. The face was the most frequently injured (41%) part of the body with the cheek being the most common site for the injury.

The range and diversity of the oro-facial injuries included skull fractures, subdural hematomas, retinal hemorrhages, bruises, burns and lacerations. Injuries to the mouth included fractured teeth, avulsed teeth and lacerations to the lips, frenum, tongue and jaw fracture. The main conclusions of this study were under 2 years old children were most at risk from abuse (36%); the number of the reported injuries to the oral cavity was extremely low (11%) and no dentists participated in the examination of any of the patients. Intra-oral injuries may be overlooked because of the medical examiner's unfamiliarity with the oral cavity. Oral health professionals should be consulted for diagnosis, advice and treatment.

Dental fear in sexually abused women: Dental fear is a risk factor for poor oral health. Thus, treatment of dental fear is a challenge to dentists. Many studies correlated the consequences of Childhood Sexual Abuse (CSA) and dental fear. A history of CSA complicates dental fear treatment and it is often a secret. In these publications they explored the differences between the dental fear in woman who report both CSA and dental fear and those who report dental fear only (Willumsen, 2001, 2008). In an anonymous survey, 58 women with dental fear and a history of CSA were compared with 25 women with dental fear without CSA. Twenty-five women without dental fear acted as a control group. In this survey no significant difference between dental fear patients with and without a history of CSA were found in subjective evaluations of use of dental services, dental appearance and dental problems or in the scores on the Dental Fear Scale (DFS). The results suggested that women who report dental fear and a history of CSA assess interpersonal factors concerning communication, trust, fear of negative information and lack of control as more fear evoking than women who report dental fear without a history of CSA (Kellogg, 2005).

Another study realised in 2001 exploring the correlation between the dental fear and the sexual abuse of women. In a cross-sectional questionnaire study, 99 sexually abused women were divided into three groups: one group who reported having been exposed to Sexual Touching (ST); one group who reported Intercourse (IC) and one group who reported sexual abuse involving Oral Penetration (OP). The mean score on dental fear assessments was significantly higher for all groups than for Norwegian women in general. Women in the OP group scored significantly higher than women in other groups of dental fear. The majority of the women reported that they had experienced problems in relation to dental treatment situations. About half of the women in the OP group and one third in the other groups reported that they had never considered that there was a relationship between the abuse and their problems with dental treatment situations. Significantly more women in the OP group reported that they had not been aware of the relationship, possibly because the abuse had been repressed. The majority of the women with extreme dental fear had never informed a dentist that they had been sexually abused (Kellogg, 2005).

CONCLUSION

Therefore, it is easily understood that the dentist can and must play a key role in the identification of a child sexual assault, as he is one of the first persons that come in contact with the child and can recognise signs and symptoms caused by a recent sexual abuse on the other hand he is responsible to meticulously observe and document these findings resulting in implication or exclusion of an individual under investigation and eventually provide court with all necessary documents (Spencer, 2004; Muram, 1989). Besides dental professional's testimony is not heresy but is considered of great importance. The goal is to familiarize and

sensitive dentists with the general idea of identification of sexual assault as it can be proved to be very helpful for the investigation and the solution of these cases. The dentist's mission involves knowledge and ability of recognition of the signs and symptoms after a sexual assault. Furthermore one should fulfill the legal and moral obligation to prevent further abuse by documenting the injuries and reporting the matter to the relevant authorities. However all these actions demand proper training of the dentist providing him the opportunity to offer great social service granted that the profession is anthropocentric as well.

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