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The Influence of Chest-Knee Position on the Appearance of anal Physical Findings in Comparison with other Clinical Positions during the Examination of Sexual anal Assault Victim

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Abstract

Background: Sexual anal assault is an important and critical issue worldwide. Usually the clinical examination reveals subtle findings to prove the incident of sexual anal assault. Thus for approaching a proper diagnosis, the victim needs to be examined by a trained and experienced forensic physician who is officially involved in dealing with such issues.

Methods: Prospective study of 82 victims of sexual anal assault transferred by the local prosecutor to the forensic medicine department.

Results: The majority of victims were females (82%), most of them were younger than 18 years (53.8%). The findings obtained by other clinical positions regarding the distribution of anal cutaneous folds revealed that (82%) of victims showed normal distribution, and (18%) showed abnormal distribution of the folds. While after chest-knee positioning (33.3%) of victims showed normal distribution of the anal cutaneous folds and (38.5%) showed abnormal distribution along with (28.2%) of victims showed absence of folds. Regarding inspection of anal sphincter by other clinical positions; (84.6%) of victims showed normally contracted sphincter and (15.4%) showed less contractility of the sphincter, whilst by chest-knee positioning (35.9%) of victims showed normally contracted sphincter with the majority of victims (64.1%) showed abnormal contraction. Concerning injuries in the anal region represented mainly by contusions and abrasions; they were noticed only in (12.8%) of victims by other clinical positions, while were present in (29%) of victims examined with chest-knee position.

Conclusions: During the clinical examination of victims of sexual anal assault, and in comparison with other clinical positions used, the application of chest-knee position showed overall more conspicuous physical findings, especially regarding the distribution of anal cutaneous folds, the inspected degree of contractility of anal sphincter, and the presence of injuries in the anal region represented mainly by contusions and abrasions.

Keyword: Sexual Anal assault; clinical Positions; sodomy; forensic Pathology.

Introduction

Sexual anal assault is an important and critical issue worldwide, especially in term of diagnosis[1], it happens in different ages and in both genders. And it is always considered a medico-legal case in all countries. Usually the anal clinical examination reveals subtle findings to prove the incident of sexual anal assault[2,3], and for approaching a proper diagnosis, the victim needs to be examined by a

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trained and experienced forensic physician who is officially involved in dealing with such issues.

Globally, many policies regarding examination are present, some forensic centers depends on subjective methods, others relay on objective ones, and a third party uses both methods.[1, 4-7] In Jordan and Palestine, the subjective method is widely applied. However, the subjective method - since being affected by many different factors[8] - implies a high probable variation in its results between the examiners, perhaps for the same case. A significant factor of these is the way of patient positioning during the clinical examination.

Our study aims to analyzing the influence of chest-knee position on the appearance of anal physical findings in comparison with other clinical positions during the examination of sexual anal assault victim.

Materials and Methods

Prospective study of 82 victims of sexual anal assault transferred by the local prosecutor to the forensic medicine department at Al-Ahli and Hebron Governmental Hospitals in the period from July 2017 to March 2022.

Needed data was collected from the victims by a thorough history related to the incident, and were analyzed and arranged in three tables as following: the age correlated to gender, the anal physical findings and the photographical results with chest-knee position and with other clinical positions.

Results

In general, the number of victims of sexual anal assault who were transferred by the local prosecutor to the department of forensic medicine during the period from July 2017 to March 2022 was 82. Data were analyzed according to the age correlated with gender, and the appearance of anal physical findings with chest-knee position in relation to other clinical positions used.

History

Table 1 shows the distribution of cases regarding the age and gender as following: most of the victims were less than 18 years old (71.8%), most of them were females (53.8%), and all male cases being less than 18 years old (18%).

Table 1: Distribution of cases according to the age and the gender:

Age correlation to the gender	Male	Less than 18 years	18%	82 Cases (100%)
		More than 18 years	0%	
	Female	Less than 18 years	53.8%	
		More than 18 years	28.2%	

Clinical examination results

Table 2 correlates the distribution of cases with chest-knee position and with other clinical positions regarding the appearance of the following physical findings; the distribution of anal cutaneous folds, the Inspected contractility of anal sphincter, and the Injuries in the anal region as following: with other clinical positions most of victims showed normal distribution of anal cutaneous folds during examination (82%), while with chest-knee positioning, most of victims showed abnormal and even absent folds during examination (66.7%). Anal inspection revealed a normally contracted anal sphincter (84.6%), whereas after changing the victim to chest-knee position, this normality had changed to abnormally looking contraction of the sphincter (64.1%). Injuries in the anal region were present in (12.8%) of victims with other clinical positions and the percentage had elevated to (29%) with chest-knee position.

Table 2: Distribution of cases according to anal physical findings.

Clinical examination of anus			**Total & percent**	
Appearance of anal cutaneous folds	Other clinical positions*	Normal*	82%	82 (100%)
		Abnormal*	18%	
		Absent	0%	
	Chest-knee position	Normal*	33.3%	82 (100%)
		Abnormal*	38.5%	
		Absent	28.2%	

Clinical examination of anus			Total & percent	
Inspection of anal sphincter contractility	Other clinical positions*	Normally contracted*	84.6%	82 (100%)
		Abnormally contracted*	15.4%	
		Normally contracted*	35.9%	82 (100%)
		Abnormally contracted*	64.1%	
Injuries the anal region Mainly contusions and abrasions	Other clinical positions*	Presence of Injury	12.8%	82 (100%)
		Absent of Injury	87.2%	
	Chest-knee position	Presence of Injury	29%	82 (100%)
		Absent of Injury	71%	

* Other clinical positions: lateral position, Sim's Position (lateral recumbent position), Standing - up position, and Kneeling position.

* Normal appearance of anal cutaneous folds: Circumferentially and evenly existed folds around the anal orifice.

* Abnormal appearance of anal cutaneous folds: Unevenly distributed folds and being obliterated in some areas around the anal orifice.

* Normally contracted anal sphincter: Fully closed orifice by inspection assessed after performing gentle separation of buttocks.

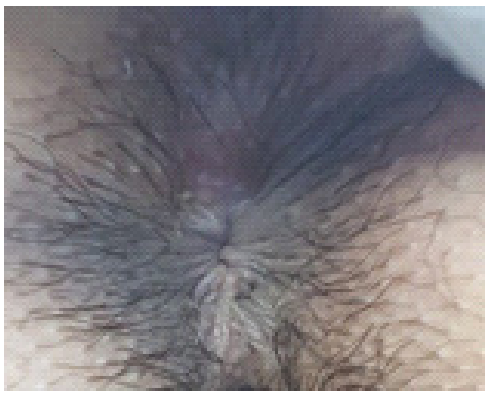
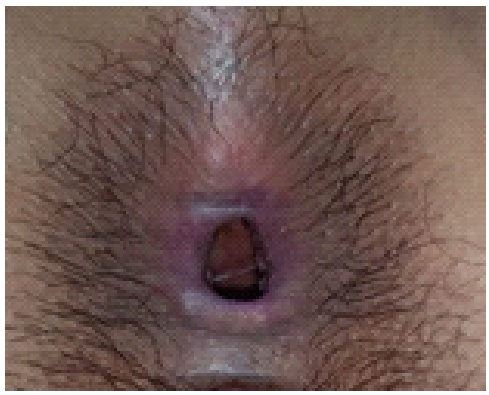
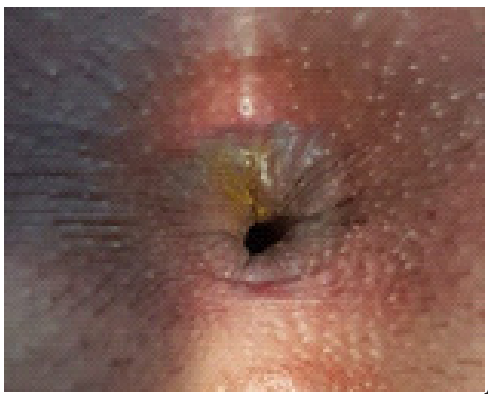
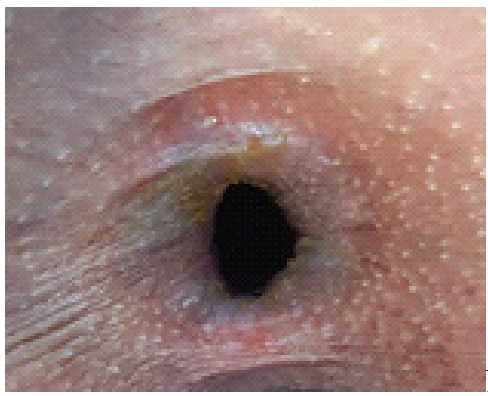
* Abnormally contracted anal sphincter: less than full contraction of the sphincter ; with different degrees of laxity.

* Injury around anus: Mostly (contusion and/ or abrasion).

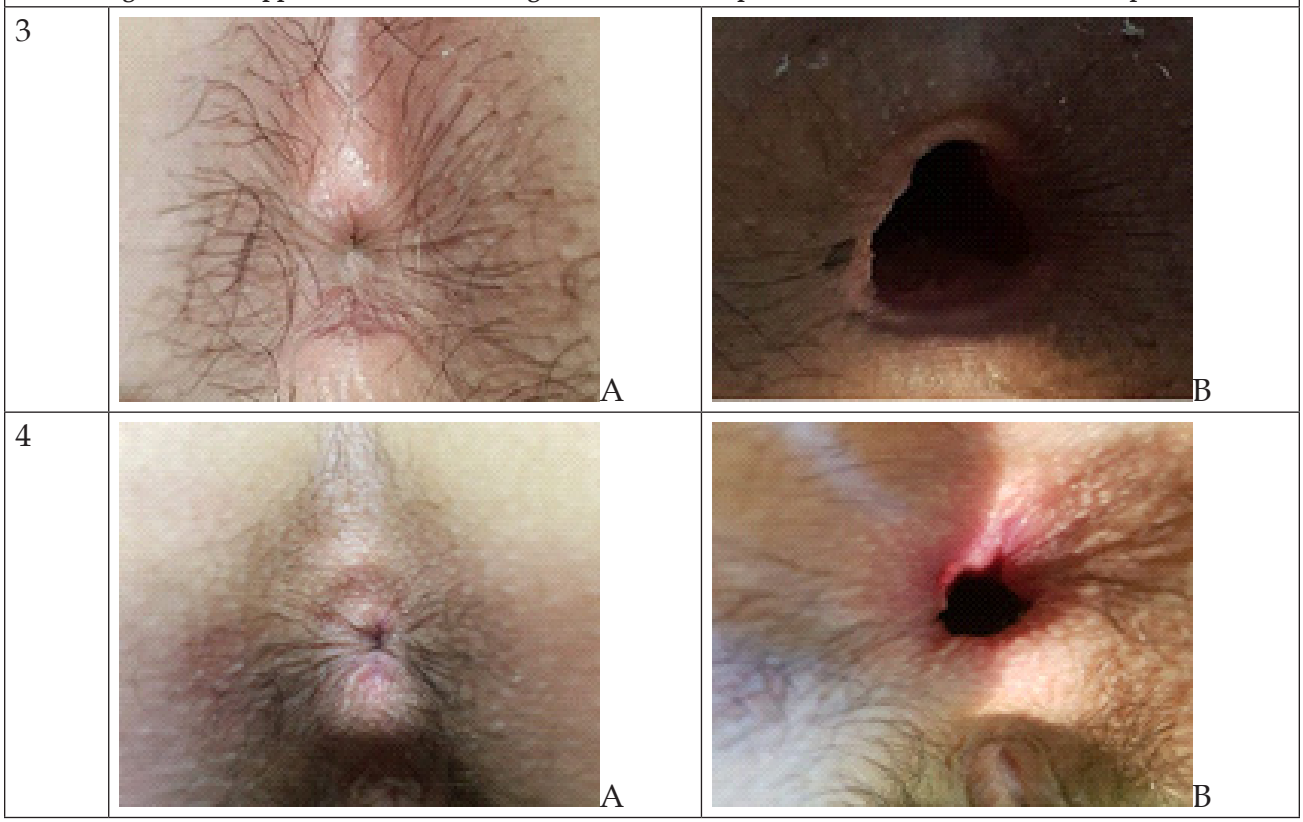
Photographical results of sexual anal assaults

Table 3 shows the photographical results of four different victims of sexual anal assaults when clinical examination conducted first with other clinical positions and then with chest-knee positioning as following: with other clinical positions, most of victims showed normal findings during the examination, while after chest-knee positioning, all victims showed abnormal findings regarding the distribution of anal cutaneous folds, the inspected state of anal orifice contraction, and the presence/ absence of anal injuries.

Figure 1: The appearance of anal findings with chest-knee position in relation to other clinical positions used

Figure	Other clinical positions	chest-knee position
1	 A	 B
2	 A	 B

Contd.. Figure 1: The appearance of anal findings with chest-knee position in relation to other clinical positions used



Figures 1, 2, 3 and 4 (A): Show the degree of anal sphincter contraction when applying other clinical positions, note the distribution of anal folds in figures 1,3 and 4.

Figures 1, 2, 3 and 4 (B): Show the changes in the degree of anal sphincter contraction, and the distribution of anal folds after chest-knee positioning which became much less contracted and obliterated respectively.

Discussion

Sexual abuse is unwanted sexual activity, with perpetrators using force, making threats or taking advantage of victims not able to give consent. Most victims and perpetrators know each other. Immediate reactions to sexual abuse include shock, fear or disbelief. Long-term symptoms include anxiety, fear or post-traumatic stress disorder.[9]

Results of a physical examination will be within normal limits in 80% of child victims of sexual abuse[10], since the mucosal tissue is elastic and may be stretched without injury.[11] It worth noting that conducting the physical examination must take place as much early as possible since the anal physical injuries can heal rapidly due to high blood supply of the area; superficial abrasions and fissures can heal within 24 to 48 hours. Unfortunately, many victims of sexual abuse do not seek medical care until weeks or months after the incident.

In our study, most victims were under the age of 18 years old. This finding increases the necessity of continuous parental supervision, and stressing on the vital duty of schools in notifying the relevant authorities of any possible violation of children's rights or suspected cases of child abuse of any form, in addition to the critical need of supporting the societies with governmental facilities specialized in family protection programs.

Females regardless the age, showed to be affected more than males. This largely lies within the child abuse issue, and the rest lies within the context of domestic wife violence.

Clinical examination of the anal region may be performed with the patient in the supine, lateral recumbent or prone position with gentle retraction of the buttocks. Theses clinical positions have been experienced in our clinic, However, It turned out that they were not beneficial in showing the full picture of the truly existing signs of anal assault. While examining the patient in chest-knee position showed more precise and obvious results. We emphasize the importance of explaining the position intended and its value to the victim prior to the clinical examination. Since Physical comfort and psychological acceptance of the chest-knee position by the victim is vital for achieving the best results of the examination.

The degree of anal sphincter contractility showed by inspection revealed an obvious difference with chest-knee position comparing with other clinical positions used (table 3).

Noticing that the percentage of results of the distribution of anal cutaneous folds showed to be approximate to the results of inspection of anal orifice contractility in both chest-knee position and in other clinical positions, this approximation is caused by the anatomic linkage between the cutaneous folds and the voluntary muscle of the external sphincter which is responsible for the sphincter contractility, since these folds are formed by the effect of contraction of the corrugator cutis ani muscle; which radiate from the superficial portion of the external sphincter muscle to the deep aspect of the perianal skin causing puckering of that skin (folds). The clinical importance of the distribution of these folds lies in their obliteration in case of chronic sexual anal assault.

Among the different physical signs of anal sexual assault, the mentioned signs in table (2) were the mostly affected by the clinical position used, and were more obvious with the chest-knee than being in other clinical positions used.

Conclusions

During the examination of victims of sexual anal assault, and in comparison with other clinical positions used, the application of chest-knee position showed overall more conspicuous physical findings, especially regarding the distribution of anal cutaneous folds, the inspected degree of contractility of anal sphincter, and the presence of injuries in the anal region represented mainly by contusions and abrasions. And for obtaining the best possible results, patient's physical comfort and psychological acceptance of the clinical position must be achieved by explaining the position intended to him/ her prior to examination.

Compliance with Ethical Standards

Conflict of Interest: Authors A and B declare that they have no conflict of interest.

Ethical approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national standards.

Informed consent: International regulations allow using data obtained from forensic department to be used in prospective/archival studies, without the need to obtain an explicit research committee.

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