Defective sexuality and female circumcision: The cause and the possible management

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Abstract

Aim: To verify the effect of circumcision on female sexuality and to define the need for clitorolabioplasty in these cases.

Methods: Thirty uncircumcised controls, 30 minorly circumcised, 30 minorly circumcised mutilated, and 57 circumcised cases having clitoral cysts were selected on random bases at Kasr El Aini School of Medicine. Sexuality was assessed by a special questionnaire sheet prepared by the authors to fit the circumcised cases. Clitorolabioplasty and clitoral cyst excision were also done in cases of sexual defects.

Results: Sexuality was not affected in minorly circumcised cases. However, sexuality was markedly affected in the mutilated cases. The scores for sex desire and arousal and for orgasm were especially affected in such cases. These defects were not detected in cases having clitoral cysts until late, when cysts enlarged. The role of clitorolabioplasty in restoration of sexuality was confirmed.

The loss of certain clitoral and labial bulk, necessary for orienting the woman towards her genitalia and initiating her interest in their function, was responsible for the occurrence of such defects; this was able to be restored by surgery.

Conclusion: Counseling parents about these sexual defects and asserting the need for correcting the mutilation, which resulted from these circumcisions, are effective steps in banning such procedures.

Key words: clitoro-labial orientation, female circumcision, female genital mutilation, female sexuality.

Introduction

Female circumcision is a problem in many countries of the world. Some 1994 statistics by the former Egyptian Ministry of Population estimated that between 70% and 90% of Egyptian women were circumcised.¹ Moreover, a more recent survey conducted by the international group Marco places the figure even higher; with 97% of women in both rural and urban areas reporting that they have been circumcised.¹ Also, Ortiz (1998)² declared that such practice is still common today in 26 African nations and affects 100–126 million women and girls.

Female circumcisions are known to range from excision of minor skin parts around the clitoris to almost partial removal of the vulva.^{3,4} Removal of sensitive genital parts, in addition to the development of distorting and mutilating adhesions around the amputated or removed parts, are expected to be associated with defective sexuality.^{5,6} The latter must be considered a major drawback or disadvantage of that procedure. But, as proper sexuality or proper satisfactory sex is somewhat difficult to define and difficult to determine, defective sexuality is not properly proved and not properly declared in those circumcised women.

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On the other hand, banning of circumcision is a worldwide need, yet banning by law may be associated with the illegal increase of such a procedure practiced by the non-medicals as well as paramedicals. In the latter situation, the procedure is commonly associated with increased risks and complications, in spite of being considered a minor surgical procedure. Successful banning must be conducted through a protocol which includes proper and convincing medical facts against the procedure and to also disprove certain alleged religious and social benefits.

This study is done to declare the effect of female circumcision on sexuality and to study the effect of clitorolabioplasty in those cases having defective sexuality after that procedure.

Subjects and Methods

This study included 147 women divided into four groups. The groups were:

- Thirty uncircumcised women, the control group.
- Thirty minorly circumcised women, group I. (Group I circumcisions were those involving excision of the clitoral prepuce and frenulum, and in some cases, small parts of the protruded labia minora. These cases are classified as first degree circumcision according to the World Health Organization (WHO) classification.)
- Thirty circumcised mutilated women, group II. (Mutilated circumcisions involve excision of the glans, the whole clitoris and labia minora, infibulated cases and cases where the area of the clitoris or the base of labia minora or both are involved in adhesions or scarring. These cases correspond to second and third degree circumcision according to the WHO classification.)
- Fifty-seven cases of circumcised women of any type who developed clitoral cysts as late complications of circumcision, group III. (These cases correspond to fourth degree circumcision according to the WHO classification.)

All cases were randomly selected so as to include a statistically significant number of cases homogenously distributed in each of the studied groups. Cases were collected from the family planning and gynecologic clinics at Kasr El Aini School of Medicine in the last three years. The control cases attended the family planning clinic for selecting suitable contraceptives. The rest of cases were cases of backache (18 cases), leucorrhea (12 cases) dysmenorrhea (10 cases), premenstrual

tension syndrome (20 cases) and clitoral cyst (57 cases). All cases were married women aged 18–28 years and were gravidae 1–3. Other personal and socioeconomic data (e.g. age, parity, education, employment and socioeconomic class) were comparable and equally distributed in all the groups. All cases consented to participation in this study and the required surgery was explained to them.

Full history and clinical gynecologic examination were recorded at the initial visit, then the preliminary sexual assessment was done. Further assessments were needed to validate results, to evaluate the results of surgery and to revise certain data included. Husbands of all cases were assessed before cases were included in the study and were proved to be within the range for normal males. Sexuality was assessed by a questionnaire (see Appendix) 'Kasr El Aini sexual assessment questionnaire sheet' prepared by the author at Kasr El Aini School of Medicine, Cairo University. The questionnaire included data about the state of the external and internal genitalia, the state of femininity, the level of genital and sexual knowledge, sexual desire and arousal, orgasm and sexual satisfaction. These data provided a score out of 100.

The mutilated and complicated cases were advised to have surgical management for reconstruction of the mutilated clitoral and labial area and for managing clitoral cysts. Two surgical techniques were chosen for managing clitoral cysts, these were the simple excision and the excision reconstruction. The clitoris was reconstructed by freeing the available part from any adhesion, cutting the suspensory ligament and its reattachment in a more backward position after pulling the available part of the clitoris forward to create a reasonable clitoral part, then the skin wounds are repaired. Repair of labia minora is usually done using the labial remnants to reform continuous labium attached to the clitoris base, referring to the known rules of plastic surgery. Paring and sutures or splitting the remnant to cross over the defect were commonly needed.

The progress of the cases who had surgery done was followed for 6 months after complete healing of the wound.

Results

Uncomplicated and non-mutilated circumcisions were found in circumcised women when the procedure was performed at the age of 10–12 years, the circumcisor was a trained gynecologist, the procedure was first-

degree circumcision or the wound was primarily sutured. On the contrary, mutilated and complicated circumcisions occurred when the procedure was done before the age of 10 years, when the circumcisor was non-professional or paramedical and made the circumcision of degree II or III, and if the wound was left to heal spontaneously without any repairing stitches. The percentages of the various associations are given in Table 1.

Three types of clitoral cysts were successfully identified, these were the clitoral stump (44 cases, 77.2%), the glansular (9 cases, 15.8%) and frenular cysts (4 cases, 7%). All of these types could be traced to the procedure of circumcision. Glansular and frenular cysts are characterized by being less common, smaller, unilocular and rounded and usually contain smegmalike secretion (Figs 1 and 2). The glansular is commonly umbilicated and the glans is difficult to identify before dissecting the cyst. Meanwhile, the glans is easily identified superior to the frenular cyst. Clitoral stump cysts are more common, larger, bilocular and usually contain sebaceous material (Fig. 3).

Clitoral cysts are associated with the sense of disfigurement in 82.5% of cases, urinary symptoms in 40.4%, sexual symptoms in 38.6% and leucorrhea in 17.5%. Sexual arousal was noticed by the patients during

walking, crossing of legs and wearing tight underwear, and was associated with the complaint of continuous genital wetting.

Analysis of the sex scores in the groups studied showed the mean score for the normal controls to be 82.2±1.45 and the mean for the minorly circumcised women to be 78.9 ± 1.7 . The difference between the latter and the control group was insignificant (T/d.f. = 8.092/58 and P > 0.05). The mean for the mutilated cases was 65.6 ± 1.7 , which was significantly lower than for the controls (T/d.f.=40.868/58) and P<0.0005). On the contrary, the mean for complicated cases was 76.8 ± 2.0 and was strangely insignificantly different from the controls (T/d.f. = 14.415/85) and P > 0.05). The lowering of the total sex scores for the circumcised mutilated cases was related to the significant lowering of the scores for the state of integrity of the external genitalia and for the sexual desire and arousal as well as orgasm, which were not involved in the circumcised complicated cases (Table 2).

Analysis of the similar scores after surgery in those women who needed surgical treatment showed that the mean scores for the circumcised mutilated cases increased and became similar to those recorded for the controls (T/d.f.=33.941/58 and P<0.0005). The corresponding means for cases needing surgery for clitoral

Table 1 The circumcisional and the sociodemographic[†] data in the studied groups

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Data	Group I (30 cases) N (%)	Group II (30 cases) N (%)	Group III (57 cases) N (%)
Age at the time of circumcision:			
7 years	0 (0%)	6 (20%)	10 (17.6%)
8 years	0 (0%)	12 (40%)	24 (42.1%)
9 years	2 (6.7%)	9 (30%)	19 (33.3%)
10 years	4 (13.3%)	3 (10%)	2 (3.5%)
11 years	18 (60%)	0 (0%)	2 (3.5%)
12 years	6 (20%)	0 (0%)	0 (0%)
Circumcisors:			
Non-professional and paramedical	1 (3.3%)	25 (83.3%)	52 (91.2%)
Trained gynecologist	27 (90%)	2 (6.7%)	2 (3.5%)
Others	2 (6.7%)	3 (10%)	3 (5.3%)
Types of circumcision in degrees:			
First degree	25 (83.3%)	5 (16.7%)	4 (7%)
Second degree	5 (16.7%)	13 (43.3%)	33 (57.9%)
Third degree	0 (0%)	12 (40%)	20 (35.1%)
Types of repair of the circumcision wo	ound:		
Spontaneous healing	1 (3.3%)	26 (86.6%)	50 (87.7%)
Primary suturing	29 (96.7%)	2 (6.7%)	5 (8.8%)
Secondary suturing	0 (0%)	2 (6.7%)	2 (3.5%)

[†]One hundred and thirty-two (89.8%) of all cases were para 2, having ages ranged between 20 and 25 years and were equally distributed between all the groups including the controls. Seven (4.8%) of cases were para 1 having ages below 20 years and eight (5.4%) of cases were para 3 having ages above 25 years. All cases including the controls were of the mid socioeconomic class and had secondary school graduation and were housewives.



Figure 1 The frenular cyst.



Figure 2 The glansular cyst.

cysts were found to be significantly lowered for those treated by the simple surgical technique of excision (T/d.f.=30.04/52 and P < 0.0005) and were found to be nearly maintained to be insignificant from the mean score prior to surgery (T/d.f.=5.05.58 and P > 0.05) in those treated by excision and clitorolabial reconstruction (Table 3).

It may be of interest to know that restoration of the clitoral stump length to more than 1 cm and/or restoration of the glans clitoris and labia minora were found to be associated with the development of normal sex scores and satisfactory sexuality.



Figure 3 The clitoral stump cyst.

Discussion

Female circumcision as described in group I was found to be the least mutilating and the least risky of the procedures. Circumcisions of this type were found to be done between the ages of 9 to 12 in all cases, were done by trained gynecologists in 90% of cases, and the wounds were sutured primarily in 96.7% of cases. The corresponding figures for mutilating circumcisions (group II) were 7 to 9 years in 90%, non-professionals and paramedical circumcisors in 83.3%, and the wounds were left to heal spontaneously in 86.6% of cases. Very similar figures were recorded in the complicated cases (group III).

Primary suturing of the circumcision wounds was found to guard against adhesion formation, embedding of the glans or the clitoral stump at the wound site, or burying part of the skin edge on one side under the edge of the other side. The last is known to be the mechanism of developing of the clitoral inclusion dermoid cyst.^{7,8}

In the present study, we succeeded in classifying these cysts into three types; these are the clitoral stump, the glansular and the frenular cysts. The first

Table 2 The total and differential sex scores in the four groups studied

Sex scores	Control uncircumcised (30 cases)	Circumcised (30 cases) group I	Circumcised mutilated (30 cases) group II	Circumcised complicated (57 cases) group III
Total sex scores (100)				
Mean \pm SD	82.2 ± 1.45	78.9 ± 1.7	$65.6 \pm 1.7^{+}$	76.8 ± 2
Differential sex scores:				
The degree of femininity, scores 0–30				
State of external genitalia (9)	8.5 ± 1.0	7.5 ± 1.0	$3.6 \pm 0.9^{\ddagger}$	5.3 ± 1.3
State of the internal genitalia (15)	14.7 ± 0.48	14.2 ± 1.1	14.2 ± 0.7	14.5 ± 0.8
General feminizing features (6)	4.3 ± 0.9	4.4 ± 0.8	4.6 ± 0.85	4.3 ± 0.8
The level of sexual knowledge (30)	24.3 ± 1.1	22.7 ± 1.1	22.6 ± 0.85	22.7 ± 1.0
Sexual desire and arousal (12)	10.4 ± 0.8	9.4 ± 0.8	7.2 ± 0.8 §	11.2 ± 1.0
Orgasm (18)	12.5 ± 1.1	12.4 ± 1.7	$6.0 \pm 0.9^{\P}$	10.9 ± 1.2
Sexual satisfaction (10)	8.0 ± 0.9	8.3 ± 1.1	7.3 ± 0.84	8.0 ± 0.9

 $^{^{\}dagger}$ Significant lower mean score compared to that of the controls (T/d.f.=40.686/58 and P < 0.0005).

Table 3 The pre- and postoperative sex scores in the circumcised mutilated (group II) and circumcised complicated (group III) cases

Sex scores	Controls (30 cases)	Group II (30 cases)	Group III (57 cases)	
			Simple excision (27 cases)	Excision with clitoral reconstruction (30 cases)
Preoperative sex scores	82.2±1.5	65.6±1.7	76.7±2.1	76.8±2.0 76.9±2.0
Postoperative sex scores	_	$80.5\pm1.7^{\dagger}$	63.0±1.1‡	79.0±1.1§

[†]Significant increase (T/d.f. = 33.941/58 and P < 0.0005) compared to the mean of the controls

and the last are true inclusion dermoids, while the glansular usually results from the embedding of the glans under the healing skin wound and accumulation of the smegma secretion around it, resulting in the formation of such cysts. The glansular is better named 'the smegmoma' or the 'smegmal cyst'. To the best of our knowledge, this is the first time such a name has been suggested. Routine histopathology showed these cysts to be epidermal inclusion cysts lined by keratinizing squamous epithelium, which contains a grumous pale yellow substance having sebaceous nature (Fig. 4). In nine cysts the contents were whitish, cheesy, and smegma-like with a high cholesterol content. These were the smegmoma or the smegmal cysts.

The female sexuality of circumcised women has been considered by some authors.^{5,9,10} In all studies the results were not conclusive or totally convincing, but generally suggested the relationship between circumcision and sexuality defects.

Assessment of sexuality by the Kasr El Aini sexual assessment questionnaire sheet may prove to be more convincing and conclusive. Yet, it depends on a certain balance between normality of the genital anatomy, proper genital and sexual knowledge, and an efficient act to have a satisfactory response and result.

This assessment sheet has good construct, discriminate and concurrent validity, test–retest reliability (r=0.86 over two weeks), and internal consistency (μ =0.89). However, training is required to collect the proper data and scores necessary for evaluation as not much detail is included on the sheet.

The sexual scores obtained from the controls and studied cases showed that cases minorly circumcised (group I) are not significantly different from the uncircumcised controls. The mean of the total scores for the control was 82.2 ± 1.5 and 78.9 ± 1.7 for the minorly circumcised cases (P > 0.05). The resultant defect in the external genitalia varies between 8% and 12% of the

 $^{^{\}ddagger}$ Significant lower mean score (T/d.f. = 19.951/58 and P < 0.0005).

[§]Significant low mean score (T/d.f. = 15.466/58 and P < 0.005).

 $^{^{\}text{\$}}$ Significant lower mean score (T/d.f. = 25.038/58 and P < 0.0005).

 $^{^{\}ddagger}$ Significant decrease (T/d.f. = 30.04/52 and P < 0.0005).

[§]Insignificant change (T/d.f. = 5.05/58 and P < 0.05).

All scores mean \pm SD.

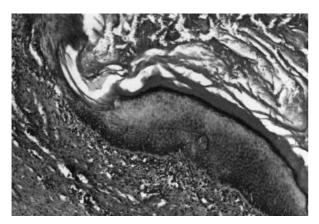


Figure 4 Histopathology showing the common epidermal nature of clitoral cyst.

integrity of the controls. On the other hand, the circumcised mutilated cases (group II) showed a significant drop in the mean of the total scores to 65.6 ± 1.7 (P<0.0005). The defect in the external genitalia varies between 45% and 58% of the integrity of the controls. The mean for the differential sex scores showed that defects significantly affect the sexual desire and arousal, and also orgasm. The mean scores for the two items in the uncircumcised controls were 10.4 ± 0.8 and 12.5 ± 1.1 , respectively. The corresponding figures of the circumcised mutilated cases were 7.2 ± 0.8 and 6.0 ± 0.9 (P<0.0005 and P<0.005, respectively). It may be of interest to know that in 18 out of the 30 cases studied the clitoris and labia minora were totally excised and in the remaining 12 cases the clitoral stump measured less than 1 cm and the labia formed small irregular remnants.

The normal flaccid clitoris is known to average 2 cm in length, 2.75 cm, erect average; any enlargement of the clitoris that exceeds 3.5 cm in length is abnormal and any decrease below 1 cm must also be considered abnormal. The sensitivity and integrity of the clitoris are essential for initiating and maintaining a normal sexual response. But, the role of labia minora in this context is controversial. Most women stated that they preferred indirect clitoral stimulation, either by pressure on the mons area, or lateral stroking of the shaft through the labia minora clitoral hood mechanism. 12

Accordingly, the integrity of a considerable bulk of the clitoris and labia minora may be essential for experiencing satisfactory sex. This may be improved through orientation of the woman with her own external genitalia and the development of interest in its manipulation by the woman herself or by her partner, resulting in a state of being consciously oriented about sexuality and thus, starting the desire and arousal.

This explanation suggested by the authors was given the name of 'clitoro-labial orientation for initiating desire and arousal'. The same explanation may be a factor in initiating orgasm as initiating proper desire and its arousal through this mechanism commonly stimulated these parts to become more sensitive to manipulation and touch and in turn to the maximum excitation needed to initiate orgasm.

Reassessment of sexuality in those mutilated cases that needed clitoro-labial reconstruction showed significant improvement in sexuality, subjectively and objectively. The mean of the total scores rose significantly, close to the mean score for the controls (T/d.f.=33.941/58 and P<0.0005).

On the other hand, studying the sex scores obtained from the circumcised complicated cases in group III showed an interesting phenomenon. The mean of the total sex scores was insignificantly different from those recorded for the controls (76.8±2.0 and 82.2±1.5, respectively), in spite of the defects which resulted from the mutilation and the cyst formation following circumcision. This phenomenon was found to be present only in those cases who had small cysts and that it disappeared later when these cysts enlarged. So, the presence of a small cyst may compensate for the loss of parts of the clitoris and labia minora and even produce a sort of sexual stimulation or irritation that may add to this supposed compensatory mechanism.

Moreover, reassessment of the sexuality after surgery showed that excision of the cyst without reconstruction of the clitoris was associated with a significant drop in the total scores obtained. The mean of these scores was 63.0 ± 1.1 compared to the preoperative value of 76.7 ± 2.1 (P<0.0005). Yet, the corresponding scores after clitoral or clitrolabial reconstruction showed an almost insignificant difference from the pre-operative results (79.0 ± 1.1 and 76.9 ± 2.0 , respectively; T/d.f.=5.05/58 and P>05).

Generally, results may draw the attention towards the following:

- 1. Clitoroplasty or clitoro-labial reconstruction is usually needed for the restoration of sexuality in most cases of mutilated circumcision or postcircumcision clitoral cysts (Figs 5, 6).
- The clitoris and labia minora are essential parts and their functions are essential for normal female sexuality. A minimal accepted bulk necessary for initiating their function could be identified. So, any



Figure 5 The clitoral area in mutilated circumcision before reconstruction.

mutilation or complication that involves the removal of the bulk produces defective sexuality, and for restoration of that sexuality the same bulk must be reformed surgically.

3. Banning all types of circumcision is a good policy for preserving normal female sexuality. However, banning does not involve the management of the already mutilated cases. Accordingly, surgical restoration of suitable clitoral bulk using the hidden part of the clitoral stump, and re-formation of a complete labia from the labial remnant are necessary objectives for restoration of female sexuality in those mutilated cases.

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Figure 6 Full reconstruction of the clitoral area at operation.

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Appendix: The Kasr El Aini sexual assessment questionnaire sheet

Part I, the state of the genital anatomy and femininity features

(a) The clitoridal state

Intact total length and intact glans <4>. A clitoridal stump length of 1 cm or more <3>. A stump length of less than 1 cm <2>. A stump of any length but included in labial adhesions or being embedded <1>. No available stump could be identified <0>.

- (b) The labia minora state
 - Labial remnants attached to the clitoris are present on both sides <3>. Remnants are not attached to the clitoris <2>. Remnant is present on one side <1>. The labia are totally excised <0>.
- (c) The labia majora state
 Labia are not involved <2>. Incomplete infibulation <1>. Complete infibulation <0>.
- (d) The vagina

Clinically normal for length, width, rugae with no associated pathological lesion, and definite G-spot can be detected <5>. One score should be subtracted for the defect in each item, accordingly hypoplasia scores <4>, but aplasia or atresia scores <0>.

(e) The cervix and uterus

Clinically normal for dimensions, relation of parts to each other (AVF & RVF), position, mobility and free from any pathological lesion (erosion, fibroids...) <5>. Uterine hypoplasia <4>. Uterine aplasia or atresia <0>. Other defects are subtracted.

(f) The adnexa

Clinically normal for dimensions, position, mobility, relations and free from any pathological lesion <5>. Defects are subtracted.

(g) The general feminizing features Normal for breast, hair distribution, face distribution (feminine silhouette), voice, gait and feminine behavior <6>. One score is subtracted for each defect in these features.

Part II, The level of genital and sexual knowledge

- (a) Knows the names of the accessible parts of the genitalia (the vulva and its parts, the vagina, the breast) <5>, some of them <3>, none of them <0>.
- (b) Knows names and arrangement of the internal genitalia <2>, some of them <1>, none of them <0>.
- (c) Knows the functions of the known organs, especially those related to menstruation, pregnancy and lactation <2>, some of them <1>, none of them <0>.
- (d) Can identify the manifestations of excitation, orgasm, female ejaculation <5>, some of them <3>, none of them <0>.
- (e) Can identify the same items in the male <3>, some of them <2>, none of them <0>.
- (f) Knows the names of the accessible parts of the male genitalia <3>, some of them <2>, none of them <0>.
- (g) Knows the anomalous sex (anal relation and homosexuality) <2>, some of them <1>, none of them <0>.
- (h) Knows what is meant by sexually transmitted disease and what are the preventive precautions against them <3>, some of them <2>, none of them <0>.

Part III, The act, the response, and the resultant sexual satisfaction

1. The act

(a) Frequency/month

10 times or more <2>, less than 10 and more than 5 times <1>, recorded on more longer interval <0>.

(b) Instigator

The wife <2>, the husband <2>, not determined <0>.

- (c) Family and marital stability
 Stability of both <2>, stability of one of them only
 <1>, instability of both <0>.
- (d) Response to invitation Completed the act <2>, may not have completed the act <1>, rarely completes the act <0>.
- (e) Reaction to invitation Sexual arousal in both <2>, male or female arousal only <1>, no response in either partner <0>.
- (f) Associated symptoms No associated symptoms <2>, symptoms not interfere with the act <1>, symptoms interfere with the act <0>.

2. Orgasm (each item scores three for a total of 18)

- (a) Intense sexual awareness of the clitoris which radiates upward into the pelvis
- (b) Clitoridal pelvic awareness associated with a sense of bearing down or expelling
- (c) Sensation of spreading warmth moving outward from the pelvic area suffusing the body
- (d) Awareness of involuntary pelvic muscular contraction (pelvic throbbing)
- (e) Spontaneous vocalization with a desire for closeness, cuddling or afterplay
- (f) Female ejaculation

3. The level of sexual satisfaction

- (a) Satisfied and enjoyed the act and can ask voluntarily for more <10>. If she can accept more but not ask for it <9>.
- (b) Satisfied, but did not enjoy the act <6>.
- (c) Not satisfied and did not enjoy the act <3>.
- (d) Not satisfied and describes associated suffering. She can accept the act <1>.
- (e) Rejection of the act <0>.

Result: (add up subtotals for each section)

- The state of the genital anatomy and femininity features
- II. The level of genital and sexual knowledge
- III. The act, the response and the resultant sexual satisfaction

Total (out of 100)