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ORIGINAL ARTICLE *Gynaecology*

Epidermal clitoral inclusion cysts: not a rare complication of female genital mutilation†

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BACKGROUND: Although female genital mutilation (FGM) does not feature in Judeo–Christian populations, it is estimated that, 100–140 million women in the world have undergone some form of FGM. Given the increasing diversity of the western populations, a review of specific complications of FGM is of paramount importance to practicing clinicians. The objective of this study is to report a case series of epidermal clitoral inclusion cysts after FGM in a Muslim population primarily from the Middle East.

METHODS: Between January 1998 and July 2009, 32 females underwent surgical removal of epidermal clitoral inclusion cysts in a tertiary referral university hospital. Data regarding age, clinical presentation, operation time, estimated blood loss, presence of intraoperative and post-operative complications, duration of admission to the hospital and long-term follow-up were extracted from the records.

RESULTS: There were 15 women (46.9%) with a definitive history of FGM, 14 (43.8%) did not know whether they had FGM or not and 3 (9.3%) had no history of FGM and were excluded from the analysis. The mean age of subjects was 28.1 years (range 5–91 years). All presented with increasing clitoral mass over a mean duration of 5.2 $\pm$ 4.1 years. The mean diameter of the cyst was 4.2 $\pm$ 2 cm. Regarding treatment, 28 subjects underwent surgical excision, and one underwent incision and drainage of a clitoral abscess. No short- or long-term complications occurred.

CONCLUSIONS: Clitoral cysts appear to be a more common complication of FGM than previously thought. Publication of studies that highlight the medical complications of FGM should be encouraged to advocate abandonment of the procedure.

Key words: epidermal clitoral cysts / FGM

Introduction

The World Health Organization (WHO) defines female genital mutilation (FGM) as all procedures that involve partial or total removal of the female external genitalia and/or injury to the female genital organs for non-medical reasons (World Health Organisation, 1996). Under WHO guidelines, FGM is classified into four types: Type I, excision of the prepuce, with or without excision of part or all of the clitoris; Type II, excision of the clitoris with partial or total excision of the labia minora; Type III, excision of part or all of the external genitalia and stitching/narrowing of the vaginal opening (infibulation); Type IV, unclassified: includes pricking, piercing or incision of the clitoris and or labia; stretching of the clitoris and or labia; cauterization of the clitoris and surrounding tissue; scraping of tissue surrounding the vaginal orifice (angurya cuts) or cutting of the vagina (gishiri cuts); introduction of corrosive substances or herbs into the vagina to cause bleeding or to tighten or narrow it and any other harmful procedures to the female genitalia for non-medical purposes. The WHO classification is preferred over terms generally used by the public, or even some scholarly reviewed publications, which include female genital cutting, female circumcision, female Sunna circumcision and Pharaonic circumcision.

FGM has no health benefits, and all types of FGM are associated with several immediate life-threatening and long-term complications including shock, infection, clitoral cysts, dysmenorrhoea, infertility, recurrent urinary tract infections, obstetric complications and psychological and sexual problems (Reyners, 2004; Wuest *et al.*, 2009). Although some of these complications are documented by solid scientific evidence, others are based on common sense and authoritative opinion (Rymer, 2003; Almroth *et al.*, 2005; World Health Organisation, 2006). There are few published research studies on epidermal clitoral cysts in women with FGM, and this lack of information has

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led to the conclusion that it is a rare complication. The objective of this study was to report a case series of epidermal clitoral cysts after FGM.

Materials and Methods

All of the operative records from January 1998 to July 2009 at King Abdulaziz University Hospital in Jeddah, Saudi Arabia were reviewed. The records for girls and women who had suffered from clitoral cysts and subsequently underwent surgery were identified and examined. Institutional Review Board approval was obtained. Data regarding age, clinical presentation, operating time, estimated blood loss, presence of intraoperative and post-operative complications, duration of admission to the hospital and long-term follow-up were extracted from these specific records.

Results

During the study period, 32 females underwent surgery for clitoral cysts. Of these women, 15 (46.9%) had a definitive history of FGM, 14 (43.8%) did not know whether they had FGM or not and 3 (9.3%) had definitely no history of FGM and were excluded from the study. The patients included both Saudis and residents from other countries. The mean age was 28.1 years (range from 5 to 91 years). All presented with increasing clitoral mass for a mean duration of 5.2 $\pm$ 4.1 years. Only one woman had associated pain and tenderness days before admission to the hospital. The mean diameter of the cyst upon examination was 4.2 $\pm$ 2 cm. For treatment, 28 subjects underwent surgical excision (Figs 1 and 2) as described previously (Rouzi *et al*., 2001). One woman underwent only incision and drainage of a clitoral abscess. In some cases, other surgical procedures were also performed. The mean operative time was 59.1 $\pm$ 28.3 min. For all women, the procedure was performed without complications. Estimated intraoperative blood loss was 100 $\pm$ 50 ml. The hospital stay was 3 $\pm$ 1 days. One woman was 6 weeks pregnant at the time of excision of a clitoral cyst and delivered a healthy baby boy at term. One woman provided a histopathology report of a previous cyst excision performed at another hospital; the cyst was consistent with an epidermal inclusion cyst. No short- or long-term complications occurred. The mean duration of follow-up was 4 $\pm$ 2 years. There were no reports of recurrence of the cysts. Final histopathology reports showed epidermal inclusion cysts as documented previously (Hanly and Ojeda, 1995) in all cases except for one which was infected.

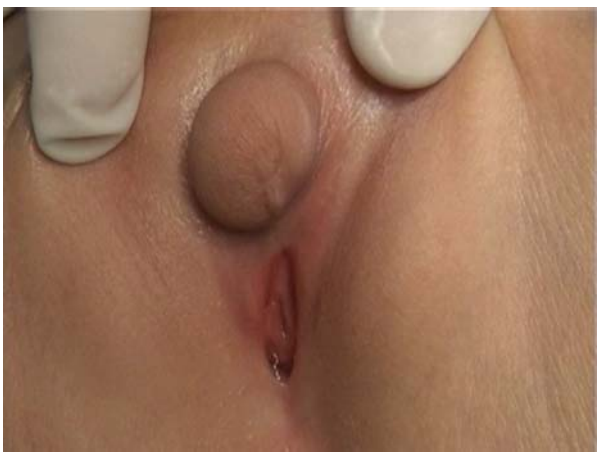

Figure 1 Clitoral cyst in a young girl.

Figure 2 Dissection of the cyst.

Discussion

The current study describes a case series of epidermal clitoral inclusion cysts associated with FGM in a Muslim population primarily from the Middle East. Although FGM is not a part of the Judeo–Christian populations of North America, Europe and other western countries, it is estimated that 100–140 million women in the world have undergone some form of FGM and each year 2 million girls are thought to be at risk of such a procedure (World Health Organisation, 1996). Given the increasing diversity of the western populations due to the increasing migration of women from Africa and Asia, a review of specific complications of FGM is important to the practicing clinicians.

The practice of FGM predates Islamic times and is common in both religious and non-religious groups (Jones *et al*., 2004). It is not included in the Muslim's holy book of Qur'an. In the Middle East, FGM is performed shortly after birth by a 'Daya' (traditional birth attendant) or by an elderly woman, without anesthesia and using primitive instruments, as early as 8 or 14 days after delivery (Watson, 2005). Such procedures typically result in the more severe types of FGM. Milder forms of FGM would require the services of a physician and anesthesia. Although FGM is increasingly being performed by medically trained personnel (Toubia and Sharief, 2003; Wakabi, 2007), this does not necessarily result in a less extreme procedure. On the contrary, research has shown that 'medicalization' in some countries has led to institutionalization and increased severity of the procedure (Morris, 2006).

Recently, FGM has attracted a lot of medical and public interest. Nearly all major medical professional organizations have condemned the practice and consider it a violation of human rights. Significant progress in the campaign to eliminate FGM has been achieved. Many

approaches including criminalization are being used in this effort. In local populations where FGM is common, increased awareness of the adverse consequences of FGM among the public, religious authorities and physicians is of paramount importance. This strategy among other strategies will help to eradicate the practice (Eke and Nkanginieme, 2006).

Epidermal inclusion cysts arise from implantation of epidermal elements in the dermis and the subsequent proliferation of epidermal cells within a circumscribed space. They grow slowly and usually do not cause symptoms, but they may become inflamed or infected, resulting in pain and tenderness. FGM can cause epidermal inclusion cysts due to many factors including the circumstances in which it is performed leading to forceful cutting, the person who is doing it and the instruments used.

With respect to the frequency of medical complications after FGM, Dirie and Lindmark reported that among 290 women with FGM, 39% experienced immediate complications such as hemorrhage, infection and urinary problems and 37% experienced late complications such as dysuria, clitoral cysts and poor urinary flow (Dirie and Lindmark, 1992). The majority (88%) of these complications occurred after Type III FGM. Development of epidermal clitoral cysts is a recognized long-term complication of FGM. Although the exact incidence is not known, it is generally perceived to be rare or even very rare. In a review of the literature, it was reported that it occurs in 0% of cases after Type I FGM, in 5% after Type II and in 0.6% after Type III (Shell-Duncan, 2001). However, we documented the occurrence of epidermal clitoral cysts after Type I FGM in 21 women who were treated surgically in another hospital in Jeddah, Saudi Arabia (Rouzi *et al*., 2001). In the present study, 46.9% of women treated for epidermal clitoral cysts had definitively undergone FGM, and 43.8% may have undergone this procedure. This may indicate that epidermal clitoral cysts are not a rare complication of FGM as previously thought, but instead may be under-reported in the literature. We recently scientifically documented the occurrence of sexual dysfunction as another under-reported complication following FGM (Alsibiani and Rouzi, 2010). The fact that 43.8% did not know for sure that they had FGM is more consistent with the birth practice of FGM in Middle Eastern populations. Only three women (9.3%) had no definite history of FGM. It is very rare to have epidermal clitoral cysts without FGM. Anderson-Mueller *et al*. (2009) reported the fifth case in the literature of an epidermoid clitoral cyst in a patient without history of FGM.

Efforts to publish medical complications of FGM should be encouraged to increase advocacy for elimination of these procedures.

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