

# Infertility from female circumcision

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**Objective:** To present a case report of a patient with primary infertility from female circumcision, the management of the patient, and a review of the literature.

**Design:** Case report and literature review.

**Setting:** University hospital.

**Patient(s):** A 31-year-old woman referred for a history of primary infertility.

**Intervention(s):** Complete history and physical exam of the patient and subsequent deinfibulation.

**Main Outcome Measure(s):** Diagnosis, surgical management, and postoperative sexual function and pregnancy.

**Result(s):** Resolution of dyspareunia, satisfactory postoperative sexual function, and pregnancy.

**Conclusion(s):** Awareness of this type of female circumcision and familiarity with its surgical management may prevent delays and any subsequent complications. (Fertil Steril® 2004;81:1692–4. ©2004 by American Society for Reproductive Medicine.)

**Key Words:** Female circumcision, genital mutilation, infertility, deinfibulation, dyspareunia

Female circumcision (FC), also called female genital mutilation, is defined by the World Health Organization as “all procedures involving partial or total removal of the external female genitalia or other injury to the female genital organs, whether for cultural or other non-therapeutic reasons” (1). It is estimated to affect over 130 million females worldwide, mainly in Africa and predominately Muslim countries (2). Recently, the United States has faced an influx of immigrants from those regions, which has brought issues such as infertility, obstructed labor, and vaginismus/pelvic pain to the medical community. The U.S. Department of Health and Human Services estimates that approximately 175,000 females currently living in the United States have undergone FC (3).

The literature on this issue is predominantly related to awareness and education on the social and cultural impact of FC (4, 5). Reports of surgical correction of FC have focused on intrapartum management, and there are no reports concerning management of patients who present with infertility secondary to FC (6, 7).

Our objective is to report a case of infertility secondary to FC and review the medical liter-

ature that addresses the surgical management of FC in infertile patients.

## CASE REPORT

A 31-year-old nulliparous Sudanese woman presented with complaints of dyspareunia and infertility. The patient was married for more than 1 year but was unable to tolerate coitus secondary to pain from initial penetration. At the age of 8 years, she underwent circumcision in Sudan. At the age of 11 and 12 years, respectively, she developed normal breast and pubic hair patterns, with regular, cyclic menses starting at age 13 years. The patient related a history of difficult bimanual examinations and an inability to tolerate speculum examinations. She gave no history of recurrent urinary tract infections, pelvic infections, incontinence, or severe dysmenorrhea.

Physical examination revealed scarred and fused external genitalia (Fig. 1). There was a surgically absent prepuce and clitoris and partial labia majora and minora. The remnant labia minora had previously been approximated in the midline over the vestibule. There was an anterior defect, approximately 0.2 cm in diam-

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**FIGURE 1**

Type III female circumcision. Note the presence of partial labia majora and minora with a surgically absent prepuce and clitoris. A small anterior and posterior opening is retained for the expulsion of urine and vaginal, cervical, and uterine secretions.



*Chen. Infertility from female circumcision. Fertil Steril 2004.*

eter, which allowed for the leakage of urine from the underlying urethral meatus, and a posterior opening approximately 1 cm in diameter, which allowed for the release of endometrial contents and vaginal/cervical secretions from the underlying vaginal aperture.

The presence of a normal anteverted uterus and adnexa was confirmed by transabdominal ultrasound. A speculum exam could not be performed secondary to the patient's discomfort. After giving informed consent, the patient underwent definitive surgical restoration of her genital anatomy.

To deinfibulate the circumcised tissue, a hemostat was inserted beneath the scarred labial tissue to raise it above the underlying urethral meatus and vaginal introitus (Fig. 2). The fused remnant labia minora were then vertically incised in the midline, and interrupted 3-0 vicryl sutures were placed along both edges of the separated labia minora for hemosta-

**FIGURE 2**

The process of deinfibulation in this patient used the cold knife approach and involves inserting a hemostat under the scarred labia and vertically incising the adhesion.



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sis (Fig. 3). The urethral meatus and true vaginal introitus were visualized and intact. A speculum exam was performed without difficulty, and the cervix and vaginal mucosa appeared normal. Bimanual exam revealed a small, mobile, anteverted uterus with normal adnexa bilaterally.

The postoperative course was uncomplicated. The patient was instructed to apply estrogen cream daily on the deinfibulated tissue for 2 weeks to prevent agglutination. At the 4-week postoperative visit, the vulva was well healed. A Graves speculum was inserted without difficulty and the patient reported satisfactory vaginal intercourse without pain. Within 2 months, the patient presented to her obstetrician with an early intrauterine pregnancy.

A review of the medical literature was performed using OVID/Medline and PubMed search strategies. Keywords entered included female genital mutilation or female circumcision combined with surgical therapy, surgery, infertility, obstetrics, outcome, management, or pregnancy.

**FIGURE 3**

After deinfibulation, the urethral orifice and true vaginal introitus can be clearly visualized.



Chen. Infertility from female circumcision. *Fertil Steril* 2004.

## DISCUSSION

The World Health Organization classifies FC into four types (1). Type I involves partial or total clitoridectomy with or without removal of the prepuce. Type II involves partial or total clitoridectomy with partial or total excision of the labia minora. Type III involves partial or total removal of the labia minora and majora with or without clitoridectomy. The remaining labial tissues are then reapproximated, that is, infibulated, leaving a small anterior opening for the passage of urine and a similar posterior opening for the passage of blood. This bridge of scar tissue results in a narrowed neointroitus. Often a healed type II circumcision will physically resemble a type III circumcision as the remnant labia minora may spontaneously fuse together during the scarring process. Lastly, type IV circumcision involves any other traditional genital cutting that is not included in the above types. Our patient's FC was type III, which is commonly encountered in women from Sudan (8).

Immediate complications of FC may include infection, hemorrhage, urinary retention, and damage to nearby structures (9). Long-term consequences such as a vulvar abscess, sebaceous/inclusion cysts, and keloid formation can also occur (10). The infibulated tissue can act as a physical obstruction to the free passage of urine, menstrual blood, and vaginal/cervical secretions, which results in recurrent urinary

tract infections, dysmenorrhea, and even hematocolpos and chronic salpingitis. Chronic inflammation and irritation can also lead to the formation of vesicovaginal and rectovaginal fistulas. This, as well as the physical barrier to coitus, may contribute to infertility.

Most of the literature pertaining to FC addresses medical complications and the management of obstetric patients with circumcised tissue rather than the process of deinfibulation in patients with purely gynecologic complaints. In centers with a large FC population, the two most common modalities of deinfibulation are the cold knife method and the carbon dioxide laser method. In the case series presented by McCaffrey et al., the cold knife method was used for deinfibulation (11). The process of deinfibulation used was similar to the procedure described in this case report. Of the 50 women studied, 37 were pregnant while 13 were nulliparous. No complications were reported.

In the study presented by Penna et al., deinfibulation was performed with a carbon dioxide laser under only a local anesthesia with 2% mepivacaine along the scarred area to be separated (12). No sutures were required as the defocused laser beam was used to maintain hemostasis. Reagglutination was avoided by manual divarication of the vulvar tissue b.i.d. for 3 days. Of the 25 patients studied, there were no reports of agglutination and no complications.

In conclusion, infertility may be the initial presentation of patients with FC in this country. Awareness of this condition and familiarity with the surgical management may facilitate the restoration of coital function and fertility in this patient population.

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