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ORIGINAL ARTICLE

The effect of circumcision on young adult sexual function

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Abstract Whether sexual function is affected by circumcision is a subject of considerable debate among advocate and opponent opinions. We analyzed the sexual function of young men, and the differences between those who were uncircumcised and circumcised, in Taiwan. A total of 506 patients who received circumcision between January 2009 and March 2011 at the urology department in our center were enrolled. Before circumcision, the patients' sexual performances were evaluated using the International Index of Erectile Function-5 (IIEF-5), and the Brief Male Sexual Function Inventory (BMSFI) questionnaires. They were evaluated using the questionnaires again, after a postoperative interval of 90 days. Furthermore, intravaginal ejaculation latency times (IELT) of the patients were also measured. The IELT and scores in five main domains of the BMSFI, and IIEF, before and after circumcision, were analyzed. A total of 442 patients were available for follow up. The mean age was 25.14 ± 4.46 years (range = 19–35 years). The differences in the BMSFI scores were statistically significant ($p < 0.001$), especially in increasing sex drive after circumcision ($p < 0.001$). The IIEF-5 score showed no statistically difference before and after circumcision ($p = 0.141$). However, after the circumcision, the participants had more erection confidence ($p < 0.001$), more difficulty in maintaining erections in completing intercourse ($p = 0.01$), and showed lower IELT scores ($p = 0.06$). The sexual performance, especially with regards to sex drive and mental erection confidence, seemed to have improved among the patients after circumcision. Our findings may help urologists to better counsel young men receiving circumcisions.

Conflicts of interest: All authors declare no conflicts of interest.

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Introduction

The effectiveness of male circumcision in preventing transmission and decreasing the risk of sexually transmitted diseases has been reported previously [1]. The risk of human immunodeficiency virus (HIV) was reduced by 51–60% [2–4]. The risks of herpes simplex virus type 2 (HSV-2) and human papillomavirus (HPV) were also reduced [5]. Among the female partners of circumcised men, bacterial vaginosis was reduced by 40% and *Trichomonas vaginalis* infection was also reduced by 48% [4]. Additional benefits of male circumcision may include a lower risk of getting cancer of the penis [6], a lower risk of foreskin infections, and easier genital hygiene. However, the effect of circumcision on sexual function and sexual satisfaction remains controversial. Some researchers believe that circumcision adversely affects sexual function and pleasure because of the loss of nerve endings and diminished sensitivity of the glans [7–9]. Others believe that it results in better sexual satisfaction [10–12]. Here, we present a prospective study on young adults, comparing sexual performance before and after circumcision, with the use of the International Index of Erectile Function-5 (IIEF-5) and Brief Male Sexual Function Inventory (BMSFI) scores. In addition, we asked participants to measure their intravaginal ejaculation latency times (IELT). The IELT was defined as the time between the start of vaginal intromission and the start of intravaginal ejaculation [13].

Methods

A total of 506 young adults (mean age = 25.14 years, range = 19–35 years) who received circumcisions between January 2009 and March 2011, at the urology department in the tri-service general hospital, were enrolled. This study was performed with appropriate approval from the internal review boards from the participating institutions. All patients were at least 18 years old, heterosexual, and had never used erection enhancing devices or medications. Before circumcision, the patients were requested to complete the IIEF-5 (Appendix 1) and the BMSFI (Appendix 2) questionnaires. The IIEF-5 questionnaire is a five-item inventory; each item is rated on a scale between one and five, designed to assess the extent of an individual's erection problems. The BMSFI is a widely used 11-item questionnaire. Each item is rated on a scale between zero and four. There were five main scales in the inventory, with a possible score range of 0–44, which include sex drive, erection, ejaculation, problem assessment, and overall satisfaction. The questionnaires were administered by the patients themselves. Stopwatches were also provided for the participating patients, with instructions on how to measure the IELT. The participants were asked to record the time of the initial vaginal penetration (timed on the stopwatch by 'start') until the instance of intravaginal ejaculation (timed on the stopwatch by 'stop'). The IIEF-5 scores, BMSFI scores, and IELT were repeated 90 days after receiving the circumcision procedure.

The patient's demographic data, the scores of each item, the total score of all five items in the IIEF-5 questionnaire, and the BMSFI scores were compared. The Chi-square test was used in statistical analysis, and $p < 0.05$ was considered significant.

Results

Among the 506 patients, 64 were excluded because of a lack of sexual experience. A total of 442 effective questionnaires were collected from the patients. All patients received circumcisions, depending on the surgeon's preference, by either a dorsal slit or a sleeve technique. The mean age of the patients was 25.14 ± 4.46 years (range = 19–35 years). Sixty-nine (15.6%) patients received circumcision because of cosmetic reasons. Twenty-six (5.9%) participants were circumcised due to pain on erection. One hundred and forty-six (33.0%) patients received the procedure due to phimosis (inability to retract the foreskin). Seventy-eight (17.6%) patients received circumcision for the ease of personal hygiene maintenance. Fifty-two (11.8%) individuals received circumcision according to their female partners' requests. There were 50 (11.3%) patients who were on vacation, active duty soldiers. These individuals requested the procedure for no reasons. Some of these young men serving compulsory military service had these requests, in order to avoid their daily work. Sixteen (3.6%) patients received the procedure because of balanitis (Table 1). There were no postoperative complications noted during the out-patient follow-up.

The preoperative and postoperative mean BMSFI scores, plus or minus standard deviation, were 38.62 ± 2.32 and 39.11 ± 2.03, respectively, (Table 2). The differences were statistically significant ($p < 0.001$), especially in increasing sexual drive after circumcision (4.82 ± 1.02 preoperatively and 5.34 ± 1.15 postoperatively, $p < 0.001$). There were no statistically significant differences in erections ($p = 0.200$), ejaculations ($p = 0.687$), sexual problems assessment ($p = 0.918$), and overall satisfaction ($p = 0.180$), before

Table 1 Characteristics of the study population ($n = 442$).

Characteristic	Mean ± standard deviation	Range
Age (y)	25.14 ± 4.46	19–35
Body height (cm)	170.93 ± 4.62	159–186
Body weight (kg)	71.06 ± 9.14	50–102
Body mass index	24.33 ± 3.01	16.98–37.18
Reason, *n* (%)		
Personal hygiene	78 (17.6)	
Pain on erection	26 (5.9)	
Phimosis	146 (33.0)	
Cosmetic	69 (15.6)	
Request by sexual partner	52 (11.8)	
On vacation	50 (11.3)	
Balanitis	16 (3.6)	
Other	5 (1.1)	