ORIGINAL REPORT

Role of Frenular Web Preservation on Ejaculation Latency Time

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Abstract- Premature ejaculation (PE) is one of prevalent male sexual dysfunctions worldwide. Despite many psychiatric backgrounds, yet there are speculations about organic etiologies considering both anatomic and physiologic points of view. This survey assesses effect of frenular web preservation on premature ejaculation. One thousand and forty otherwise healthy men being visited for urolithiasis (asymptomatic patients) were asked for PE according to the International Society of Sexual Medicine definition criteria as intravaginal ejaculation latency time (IELT) less than a minute according to stop watch checked by patients' partner and were examined for presence of frenular web. Frenular web defined as a residual of frenulum after a circumcision. Overall prevalence of PE was 18.2% (n=102). We found the presence of frenulum at physical examination in 255 out of 560 (45.5%). Prevalence of PE was 20.7% (n=53) and 16% (n=49) in patients with frenular web preserved and without it, respectively. PE was higher among the men with frenulum preserved; but no statistically significant differences were seen (*P*=0.70). We did not find any relationship between frenular web and PE, and concerns about this, during circumcision, may not be justified. PE is a not only a problem of local anatomical condition but many psychological and neurological factors could interact with it.

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Keywords: Ejaculation; Circumcision; Frenulum; Penis

Introduction

Premature ejaculation (PE) is encountered frequently in men presenting with sexual dysfunction and is defined as "ejaculation which always or nearly always occurs prior to or within about one minute of vaginal penetration, and the inability to delay ejaculation on all or nearly all vaginal penetrations, and negative personal consequences, such as distress, bother, frustration and/or the avoidance of sexual intimacy" (1-3). The pathophysiology of PE is not well understood and there are hypothetical propositions giving some importance to sensation of mucosal part of penile skin remaining after circumcision, such as the frenulum (4,5). Halata and Munger showed that glans corona and frenulum is the most sensitive zone of the penis. Genital end bulbs are present throughout the glans, but are most numerous in the corona and near the frenulum (6). Our hypothesis was that the frenulum is the most densely innervated area of the penis and so frenulectomy and denervation of this area could alter ejaculation time and it would be shortened in men with a frenulum. Thus, this paper was designed to evaluate the association of the presence of a frenular web and the occurrence of premature ejaculation.

Materials and Methods

From October 2007 to June 2011, 1040 men being visited for urolithiasis (asymptomatic patients) in outpatient urology clinic at Sina University Hospital; patients with previous history of urologic surgery or trauma, definitive psychologic disorders, taking neurotropic medications, antihypertensive or other drugs affecting autonomic nervous system, spinal trauma, acquired PE were excluded. Based on exclusion criteria 560 men were enrolled. The Review Board and Ethics Committee of Tehran University of Medical Sciences approved the study. According to local cultural values all subjects were circumcised in childhood. All patients were interviewed by one of a group of four general urologists for presence of premature ejaculation according to the International Society of Sexual Medicine definition criteria (2). Intravaginal ejaculation latency time (IELT) on basis of patient declaration, particularly in three aspects regarding unwanted, uncontrolled early ejaculation being present in more

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than two-third of patients' intercourses that resulted in personal or partner distress or anxiety according to stopwatch recorded IELT by patients partner. Patients were asked to make stopwatch recording at least 2-3 times before diagnosis as PE. Patients were asked for other sexual dysfunctions as decreased libido, erectile dysfunction (ED). Patients were considered normal if reported IELT over 1 minute. Informed consent has also been given by the female partners.

Patients with concomitant sexual dysfunctions other than PE were excluded from study. All subjects underwent routine genital examination by team of four urologists. And presence of frenular web was checked at physical examination; if there is any controversial or in between at physical examination, entered in frenular web group. Frenular web defined as a residual of frenulum after a circumcision.

According to history and examination relationship between existence of frenular web and premature ejaculation was assessed. Results were gathered in SPSS v.13 database format and analyzed by Chi-square test for odds of presence of PE in case of frenular preservation after circumcision.

Results

Baseline and sexual characteristics of the men with frenular web and without it are summarized in Table 1. Five hundred and sixty healthy circumcised men were enrolled. Overall prevalence of PE was 18.2% (n=102). We found the presence of frenulum at physical examination in 255 out of 560 (45.5%). Prevalence of PE was 20.7% (n=53) and 16% (n=49) in patients with frenular web preserved and without it, respectively.

Table 1. Sexual and baseline characteristics of patients.

Characteristic	Frenular web group n=255	without Frenular web group n=305	*P* value
IELT<1 (N)	53	49	0.70
Median IELT (minutes)	0.4	4.9	0.001
Lifelong PE (%)	100	100	-
Mean (SD) age, yr	33.4 (7.5)	31.8 (8.3)	0.84

IELT: intravaginal ejaculation latency time, PE: premature ejaculation.

The prevalence of PE was barely higher in men with a frenulum. There was no statistically significant difference in the prevalence of PE in men with a frenulum compared to men without one (*P*=0.70). Odds ratio for PE in presence of frenulum was 1.1 (95% CI, 0.06-2.09).

Discussion

Exact pathophysiology and etiology of PE is unknown and insufficient data is available to clearly support any of three basic hypothesis like anxiety and psychological disorder, serotonin receptor dysfunction or penile hypersensitivity hypothesis over others (7).

It has been postulated that men with PE have a sensory- neural problem which may be not in the central nervous system but in periphery such as penile skin hypersensitivity and reach the ejaculatory threshold more rapidly (8). It has also been mentioned that men with PE have lower penile vibration perception and more rapid action potential latency time in penile skin (1-8). There are conflicting studies regarding the effect of circumcision on IELT. Some reported increased and some reported decreased, and still others reported variable penile sensitivity with their own proposed mechanism and role for foreskin (10-11).

On the other hand there are reports of significant penile sensitivity change after circumcision which led to sexual dissatisfaction (10) and some authors discouraged circumcision due to adverse effects on patients sexual satisfaction and proposed that information about such outcomes should be offered to patients how want to undergo circumcision (11). Also, there are concerns regarding the length of mucosal cuff after circumcision and its effect on IELT later in life. In our previous study, neither mucosal cuff length nor penile skin and total penis length had association with PE (4).

Based on neurological studies, in conjunction with glans corona, the frenulum is the most sensitive zone of the penis (6). The frenulum receives its proper innervations by a branch of the perineal nerve, whereas the rest of the glans is innervated by the dorsal nerve afferents to the pudendal nerves (12). Therefore, frenulectomy did not interfere with the rest of the glans innervation, causing minimal lesion to penile sensitivity. Considering the above, penile sensitivity could be change after frenulectomy.

Gallo *et al*., performed frenulectomy in men with PE and short frenulum and reported mean improvement of 2.4 minutes in IELT (5). Age average of their study group was 38 years. They reported that 43% of patients

with lifelong premature ejaculation to have frenular web. Baseline IELT of study population was 1.16 minutes. After frenulectomy mean IELT was increased to 4.1 minutes. They suggested that frenulectomy should be proposed to all men complaining of lifelong premature ejaculation and a short frenulum as first line treatment. Song *et al.*, evaluated 12 patients had PE whose frenula were short. Two patients suffered unsatisfied intercourse whose frenula were damaged and departed 12 or 6 months earlier. They prolonged the short frenulum and reconstructed the ruptured frenulum. All patients reported satisfied sexual intercourse after 3-6 months. It is concluded that the frenulum is important in penile erection. PE might be treated by lengthening the frenulum (13).

Our findings revealed higher presence rate of frenulum among patients with PE compared to control group; but the differences were not significantly (20.7% vs. 16% respectively, *P*=0.70). The presence of frenulum increases risk of premature ejaculation to 1.1 fold (odds 1.1, 95% CI, 0.06-2.09). In conclusion, we did not find any relationship between frenular web and PE, and concerns about this, during circumcision, may not be justified. PE is not only a problem of local anatomical condition but many psychological and neurological factors could interact with it.

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