

SHORT COMMUNICATION

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Does Preejaculatory Penile Secretion Originating from Cowper's Gland Contain Sperm?

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Purpose: To determine if spermatozoa are present in the preejaculatory penile secretion, originating from Cowper's gland.

Methods: *Design:* Prospective clinical and laboratory study. *Setting:* Andrology and Sex Counseling Unit, Department of Obstetrics and Gynecology, Academic Teaching Hospital. *Patients:* Five patients referred for premature ejaculation, three for excessive fluid secreted during foreplay and four normal healthy volunteers. *Intervention:* Glass slide smears of preejaculatory Cowper's gland secretion obtained during foreplay from at least two different occasions, and semen samples after masturbation. *Main Outcome Measures:* Microscopic examination of air-dried smears, and routine semen analyses.

Results: None of the preejaculatory samples contained sperm. All the patients had sperm in routine sperm analyses.

Conclusions: Preejaculatory fluid secreted at the tip of the urethra from Cowper's gland during sexual stimulation did not contain sperm and therefore cannot be responsible for pregnancies during coitus interruptus.

KEY WORDS: Cowper's gland; ejaculation; sperm.

During sexual arousal and the plateau phase, but before ejaculation, the Cowper's gland secretes a clear mucoid fluid that may appear at the tip of the penis in amounts ranging from a few negligible drops to a teaspoonful or more in some men. Occasionally it contains a small number of motile spermatozoa that may cause pregnancy even if there is no ejaculation (1–3). The presence or absence of sperm in this preejaculatory fluid has not been fully established, and the issue is usually addressed with caution (4,5). The aim of the present pilot study was to examine

the pre-ejaculatory penile fluid for the presence of sperm.

PATIENTS AND METHODS

The study population included all patients ($n = 3$) who presented at our sex therapy clinic between January 1998 and January 1999 complaining of excessive mucoid penile secretion during foreplay associated with long-plateau-phase levels of sexual tension. We also included five patients who presented with premature ejaculation and four volunteers without sexual complaints who agreed to cooperate. All subjects were asked to collect drops secreted from the urethra during sexual arousal (excitement phase) and plateau phase of sexual response cycle, on to a glass slide and allow it to dry. The fluid was examined microscopically with 200–400 \times magnification. Three slides each from at least two different occasions of sexual activity were collected from each subject. The subjects were also asked to provide sperm after a 3-day abstinence for routine analysis in order to rule out azoospermia.

RESULTS

The ages, main complaints, and results of routine sperm analysis (WHO standard) of the 12 subjects enrolled in the study are presented in Table I. None of the preejaculatory samples contained sperm. The appearance of a representative sample is shown in Fig. 1.

DISCUSSION

The male sexual response consists of four phases—excitement, plateau, orgasm, and resolution. During sexual excitement and plateau, the Cowper's glands secrete an alkaline fluid that lubricates and probably neutralizes the acidity of the urethra for easy and safe passage of semen. This secretion is usually restricted to two or three drops which appear at the opening of the glans of the penis. Occasionally, during long, maintained plateau-phase levels of sexual tension, almost 1 mL of the fluid may be secreted.

All classical sexology textbooks (1,3–5) caution that it is not entirely impossible for the preejaculatory fluid to contain some stray sperm cells which may account for at least some of the “failures” of birth control by preejaculatory penile withdrawal (3–6). It appears that since it was first published (1,2) it has been repeated in all other sexology textbooks without any

Table I. Subject Characteristics and Semen Analysis

Subject No.	Age (years)	Marital status	Major complaint	Semen analysis		
				Volume (mL)	Concentration ($\times 10^6/\text{mL}$)	Motility (%)
1	23	S	Excessive fluid secreted during foreplay	3.4	32	70
2	45	M	Excessive fluid secreted during foreplay	4.0	70	70
3	26	S	Excessive fluid secreted during foreplay	3.5	38	40
4	26	M	Premature ejaculation	2.6	40	70
5	30	M	Premature ejaculation	4.5	60	80
6	30	S	Premature ejaculation	3.4	50	50
7	22	S	Premature ejaculation	6.0	60	70
8	32	M	Premature ejaculation	4.0	55	70
9	34	S	Normal, healthy volunteer	3.8	85	60
10	26	S	Normal, healthy volunteer	3.0	18	50
11	24	S	Normal, healthy volunteer	4.2	75	70
12	23	S	Normal, healthy volunteer	4.6	64	80

Note. M: married; S: single.

further scientific investigation. Sex educators and physicians have adopted these findings and conclusions, and they lecture to students on the risk of an unwanted pregnancy from these drops of fluid that may contain sperm, even if the man does not actually ejaculate. We feel that this issue must be reexamined because there is insufficient information to affirm this assumption.

In the present pilot study, preejaculatory secretion samples were carefully examined under light

microscopy; none of them was found to contain sperm. Furthermore, the dried secretion exhibited a fern-like pattern, compatible with the clear, viscid, mucus-like alkaline secretions discharged from the Cowper's glands. This observation may suggest that the failure of coitus interruptus as a contraceptive method is probably due to late withdrawal (after emission and onset of ejaculation) rather than the presence of sperm in the preejaculatory fluid at the tip of the urethra. Although our study group is small, it includes a

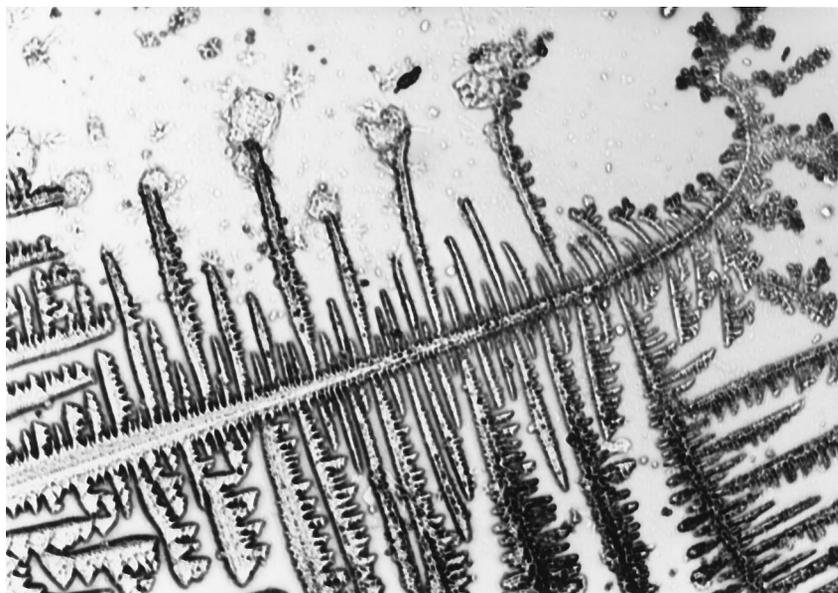


Fig. 1. Microscopic appearance of penile secretion. The fern-frond pattern resembles the wet preparation of cervical mucus from women before ovulation. No sperm is present.

mixed group of normal volunteers and men presenting with sexual problems.

Further studies are needed to confirm these findings that the Cowper's gland secretions do not contain sperm.

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