

Menstrual Protection

Advantages of the Menstrual Cup

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THE USE of sanitary napkins and tampons for menstrual protection has many inconveniences and hazards.

Discomforts and embarrassment associated with using napkins include the constant awareness of their bulk and friction, the fear of leakage and revealing bulges, and the problem of disposal. More serious disadvantages are contamination of the pad by urine and feces (kept warm and moist at the vaginal orifice), chafing, reported in 14 per cent of women,⁵ the rhythmic, stimulating effect of the friction,⁵ and the occasional occurrence of urticaria and contact dermatitis.³

The internal vaginal tampon overcame some of the above handicaps but left much to be desired. Leakage is common,¹ the tampon may cause pressure on the bladder or rectum,⁶ the dry cotton irritates the vaginal mucosa in many cases,⁹ the soiled tampon requires disposal, it may be lost deep inside the vagina and remain for weeks or months, and use of tampons by girls of high school age occasionally causes cramps.¹³

Infection with *Trichomonas vaginalis* or *Candida albicans* through the medium of the soiled menstrual guard is a constant danger in warm climates and during summer months. In Miami, I found that 80 per cent of vaginal infections are due to *Trichomonas vaginalis*.¹² Another gynecologist, in Fort Lauderdale, Fla., has observed in tampon wearers the frequent occurrence of severe

trichomonal vaginitis, which she attributes to the fact that the parasite thrives and multiplies fast in the warm, blood-soaked tampon.¹⁰

Moniliasis is rampant in Florida because of the semitropical climate. *Candida albicans* is present often on irritations produced by menstrual pads on the groins and vulva. The fungus enters the vaginal canal within a period of days, and is ultimately found in the blood contained in the menstrual pads.

Cystitis is another danger inherent in the use of sanitary napkins. The infection is usually due to *Escherichia coli* carried on the pads from the rectum to the urethra.

MENSTRUAL CUP

The rubber menstrual cup (Fig. 1), which acts as a catch basin for the flow and seals off the upper vagina in the same way as a diaphragm, represents an advance in internal menstrual protection. It has proved to be safe, sanitary, and comfortable and permits women to continue their customary physical activities during their periods.⁹

The rubber has been made resistant to bacterial growth. This can be strengthened by immersing the menstrual cup in a weak solution of chlorine bleach after each monthly use.¹¹

The menstrual cup is anatomically designed to engage and retain itself in proper position. It is not a cervical cap. When inserted, its location is well below the anterior and posterior vaginal fornices, leaving a considerable gap between the cervical orifice and the circumference of the cup.

The menstrual cup used was supplied by Tassette Inc., Stamford, Conn.

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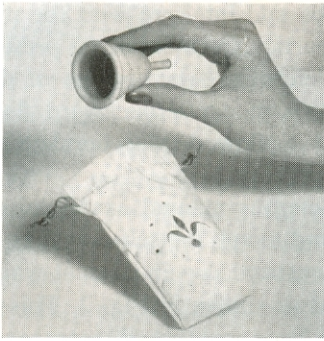


Fig. 1. Menstrual cup.

The cup is made of soft rubber, flexible so that the wearer is never conscious of its presence. It weighs less than half an ounce. The diameter of the double molded rim is $1\frac{3}{4}$ in. The concavity between the two rims is so shaped as to receive a fold of the vagina, by which it is held securely in position without undue pressure. Below the lower and smaller rim there are six tiny perforations intended to allow oxygen to escape to avoid cramps, and also to release the vacuum when removing the cup.

The receptacle is 2 in. deep and has a capacity of 1 fluid oz. The average menstrual flow during a period totals 2–4 fluid oz., half of which may be discharged on the first day.

For insertion, the cup is folded twice lengthwise and lubricated with a little soap or vaginal jelly. Within the vagina, the cup springs open and adjusts to the correct position.

For removal, the withdrawal tip is drawn backward toward the rectum and rotated downward. This procedure breaks the vacuum and permits the cup to be withdrawn gently from the vagina.

LITERATURE

In a study^{7, 8} of 50 consecutive women using the menstrual cup, the vaginal walls and cervix were examined via speculum; vaginal cultures were made; and the pH was recorded electronically for the purpose of detecting possible irritation. Results

showed that the rubber cup is not injurious to the vaginal walls, that it does not irritate the mucous membrane, and that it does not obstruct the menstrual flow. Rectal examination indicated that space between the rim of the cup and the cervix was sufficient to accommodate 4–10 times the amount of blood of one menstrual cycle.

Electronic pH recordings of the vaginal walls provide a means of detecting early stages of infection. The vaginal pH is directly proportional to (1) the glycogen content of the epithelial cells, (2) the number of Döderlein bacilli, (3) the height of the vaginal epithelial cell wall, and (4) the predominance of gram-positive (pH 3.0–4.4) or gram-negative (pH 4.5–6.5) bacteria.^{7, 8}

In over 300 pH recordings of the vaginal walls while the menstrual cup was being worn, no abnormal change was recorded. Blood agar plate smears showed profuse bacterial growth with the use of pads and tampons; such growth was least with use of the menstrual cup.⁸

PRESENT STUDY

A group of 125 women, ranging in age from 20 to 45, used the menstrual cup as directed for 3 months or longer. One hundred of the subjects were normal, 20 had vaginal infections, 3 cervicitis, 1 vesico-vaginal fistula, and 1 Bartholinitis.

Instructions for inserting and removing the cup were readily understood. The average woman secured full menstrual protection by emptying the cup twice a day, morning and night, then rinsing and replacing it. At the height of the flow, it was sometimes necessary to empty the cup 3 times a day. A small wad of absorbent cotton inserted directly behind the removal tip (just inside the vaginal orifice) served as an additional protection against overflow by tilting the cup to the correct position.

At the end of 3 months all women reported that they felt the menstrual cup to be practical, economical (as compared with

sanitary napkins or tampons), hygienic, and easy to insert and remove. None would consider using anything but the menstrual cup in the future. There were no cramps even when the woman forgot to remove the cup and the blood was allowed to accumulate for many hours.

On examination no evidence of vaginal irritation was found.

In the beginning, 6 women complained of slight discomfort, which disappeared with continued use. It was difficult to convince some women to wear a device inside the vagina for menstrual protection. The objection was psychologic, possibly related to masturbation guilt feelings. It disappeared with persuasion and the satisfaction from use.

In all cases protection against leakage was adequate, except on the first day when the flow was excessive and the wearer neglected to empty the cup at reasonable intervals. On occasions when emptying the cup may not be convenient, a small wad of absorbent cotton inserted directly behind the removal tip will protect against seepage.

As in another case previously reported,² one patient with a deep vesicovaginal fistula kept dry, clean, and comfortable by using the menstrual cup. An unmarried woman, age 30, with a profuse foul discharge due to Bartholinitis, used the cup satisfactorily as a protection against soiling and offensive odors. In another patient, I found the cup useful as a means of retaining vaginal medication (melaleuca). This use has been reported.⁷

One of the voluntary comments made by most women was that there was an absence of all odor. This advantage is of particular importance, because women are sensitively aware of the tell-tale odor during the periods.

BACK-FLOW

It has been observed frequently that a vaginal tampon may wedge itself against the

cervical os and interfere with the menstrual flow. A particular object of the present study was to determine whether use of the menstrual cup can cause backward flow when the blood is allowed to accumulate in excessive amounts.

By numerous manual examinations, both vaginal and rectal, the self-adjusting position of the menstrual cup in normal women was confirmed as shown in Fig. 2. This location has also been confirmed roentgenographically by covering the menstrual cup with an opaque layer of tin foil.⁴ With the uterus in the normal position, the menstrual cup is located a considerable distance below the cervix and the vaginal fornices. Hence the free space available in the upper vagina plus the capacity of the cup itself are ample to accommodate several times the amount of blood passed in a complete menstrual cycle.

My observations have also shown that, even when there is an abundant accumulation of blood as on the first day of the period in women who continue full physical activity, the excess seeps out around the rim of the cup and does not cause backward pressure.

Under no circumstances would backward flow into the cervical canal be possible, be-

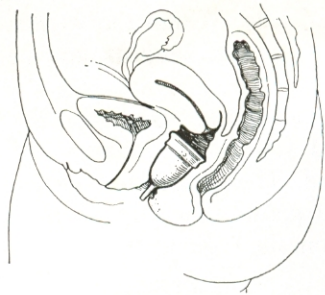


Fig. 2. Location of the menstrual cup in the vagina, as verified by digital examination. Note that the rim occludes the vagina a considerable distance below the cervix and the vaginal fornices. In this location the cup cannot obstruct the free flow of menstrual blood from the uterus. (From Liswood, Internal menstrual protection. Use of a safe and sanitary menstrual cup. "Obst. & Gynec." 13, 539, 1959.)

MENSTRUAL PROTECTION

cause the cervix contracts if any attempt is made to introduce a liquid.

CONTRAINDICATIONS

In retroversion and antelexion of the uterus, when the cervix points forward along the axis of the vagina instead of backward, the absence of a free space in the upper vagina would contraindicate the use of both the menstrual cup and tampons. Prolapsus uteri would also be a mechanical barrier.

There is no objection to use of the menstrual cup by virgins, other than a psychologic reluctance in some cases. It may be inserted into the vagina with no danger of injuring the hymen if the opening is 2 cms. or more.⁹ Since unmarried girls are likely to be more active in such sports as tennis and swimming and in dancing, this form of menstrual protection has particular appeal to them.

CONCLUSIONS

Use of the menstrual cup by 125 women under my supervision has indicated the following.

1. The cup provided adequate menstrual protection.
2. There were no cramps, pressure complaints, or signs of irritation upon vaginal examinations.
3. Vaginal and rectal palpation of the cup in situ confirmed its location well below the cervix and vaginal fornices, leaving ample free space for any excessive accumulation of menstrual blood.

4. The cup does not impede the free flow of menstrual blood or cause back-flow into the cervix.

5. Use of the cup is hygienic in that it avoids the infections commonly associated with sanitary napkins and tampons.

6. The menstrual cup frees women from the dangers and nuisances of the sanitary napkin and the tampon.

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