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Is the menstrual cup harmless? A case report of an unusual cause of renal colic

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ABSTRACT

INTRODUCTION: Menstrual cup is increasingly gaining acceptance among women to control the menstrual period. The majority of brands advocate that these devices are 100% safe to the users, notwithstanding there are some reports of rare complications associated with these devices.

PRESENTATION OF CASE: In this case we present a woman who developed a right renal colic using a menstrual cup. The pain was difficult to manage with conventional analgesics.

The plain abdominal X-ray revealed the device in the pelvis occupying more than one third of the pelvis minor diameter and oriented to the right side. The ultrasound revealed right ureterohydronephrosis with no identifiable obstructive cause.

The symptoms and the ureterohydronephrosis relieved completely after the removal of the device.

DISCUSSION: Despite of being a safe device, problems with the menstrual cup could occur and we believe that the mechanism behind this clinical picture was the extrinsic compression of the right ureter by the cup. The control of the pain in this patient was challenging and we managed the problem with the device removal.

CONCLUSION: The menstrual cup is gaining acceptance among women and it is important for clinicians to be aware of this device and possible complications associated with its use.

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1. Introduction

In the USA, the first prototypes of menstrual cups, also known as *catamenial sacks*, were patented in 1867 in United States [1].

With the FDA approval, the interest about these reusable devices has increased and they have been reported to be an acceptable substitute for tampons [1]. These flexible cups may provide a sustainable solution to menstrual management, with modest cost savings and no significant health risk.

The majority of brands advocate that these devices are 100% safe to the users. However, there are some reports of complications associated with the use of these cups, namely a case of septic shock syndrome [2].

This case represents another complication associated with the cup, caused by the mechanical compression of the right ureter managed in a tertiary center. This case has been reported in line with the SCARE criteria [3].

2. Clinical case

We present a case of a 26 year-old woman, gymnast, nulliparous, sexually active, without any past medical history. She presented to the emergency department with a three-hour complaint of right flank pain, radiating to the groin associated with nausea and vomiting. She denied fever, hematuria and lower urinary tract symptoms.

After administration of 75 mg of diclofenac and 100 mg of tramadol only a slight improvement of the pain occurred, so 50 mg of pethidine were also given without a complete relief of the symptoms.

Urinalysis showed no abnormalities, namely hematuria or leukocyturia.

Renal ultrasound revealed right ureterohydronephrosis extending to the right distal ureter with no identifiable obstructive cause.

The plain abdominal X-ray showed no signs of radiopaque urolithiasis and a U shape radiopaque image in the pelvis minor (Fig. 1).

The patient admitted to using a menstrual cup for the last two years, without any previous associated symptoms. The patient was asked to remove the cup and a few minutes after she reported complete relief of the symptoms.

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Fig. 1. Plain X-ray with a U shape device in the pelvis minor and without any sign of radiopaque urolithiasis. No patient details on figure.

The renal ultrasound after the removal of the cup showed no ureterohydronephrosis.

The patient was discharged without any prescription. She changed to a smaller caliber cup and remained asymptomatic.

3. Discussion

The vagina is a distensible muscular tube that is closely related anteriorly to the bladder and urethra and laterally to the ureters and uterine arteries.

In the women's health field, some intravaginal devices are used to manage different kinds of situations. Some commonly used devices are the vaginal rings and pessaries.

There are no described ureteral obstructive complications associated with vaginal rings.

Pessaries are used to alleviate symptoms associated with uterine prolapse in women that are unfit or unwilling to undergo surgical treatment. Complications associated with their use are frequently described in literature [4] although there is just one case reporting an obstructive uropathy associated with the use of this device [5].

Menstrual cups have been available for decades, but their use is limited due to its bulky design and the need for multiple sizes [1].

Nowadays, there are small, flexible cups made of silicone or latex rubber. Unlike tampons or pads that absorb the menstrual flow, these cups collect it. If used correctly, the woman shouldn't feel the cup. This device is increasingly gaining acceptance among women, especially those who care most about the environmental burden of the disposable pads and tampons. It is also widely available these days and can be used without any clinical advice.

The most popular brands of these cups have two different sizes: a smaller one (~40 mm diameter) for nulliparous women under the age of 30 and a bigger one (~50 mm diameter) recommended for women aged 30 and over and/or who have delivered vaginally.

The most common cause of an obstructive uropathy in young women is urolithiasis. In the present case, the cup the patient uses occupies more than one third of the pelvis minor diameter and was introduced oriented to the right side. Therefore, we believe that the shape and size of this device could be the cause of the extrinsic compression of the distal portion of the right ureter mimicking a classic renal colic.

The complete relief of the symptoms after removing the device and the absence of imaging signs of lithiasis and urinalysis abnormalities support the link between the mechanical compression caused by the menstrual cup and the pain. The patient came to our consultation five days after the discharge denying any other symptoms.

4. Conclusion

The menstrual cup is gaining more and more acceptance among women, even in developed countries, and it is important for clinicians to be aware of this device and possible complications associated with its use.

Apart from the infectious complications, mechanical complications may also occur and the management of these problems might be as simple as removing the device and using a fitter one.

The authors deny any conflicts of interest related to this case.

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Conflict of interest

None.

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None.

Ethical approval

The patient consented the report. The ethical committee of our institution exempted the approval of this report.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Authors contribution

Diogo Nunes-Carneiro: Management of the patient, Correlation between clinical findings and images, Data collection, Manuscript writing.

Tiago Couto: Interpretation of the images and clinical correlation.

Vítor Cavadas: Head of Urolithiasis unit: Clinical validation of the imagiological findings, Manuscript writing.

Guarantor

Diogo Carneiro.

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