

## Novel use of Karman Cannula: Repositioning of malpositioned intrauterine contraceptive device

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### ABSTRACT

Malpositioned IUCD is a condition where, although the IUD is present within the uterine cavity, its placement is eccentric, usually presents with symptoms of pain and discharge or contraception failure. It is diagnosed by ultrasonography. Karmans cannula is a hollow plastic sheath used generally for endometrial biopsy and suction evacuation operations. The distal end if cut can be used to fit the intrauterine contraceptive device (IUCD) vertical limb and pushed up in the uterus to correct position. This is an easy and cost-effective way to reposition a low lying IUCD.

**Key words:** *Karman's cannula, IUCD, uterine procedure*

**A** correctly positioned intrauterine contraceptive device (IUCD) should have its horizontal limb located at the fundus of the uterus, with the arms fully expanded and extending toward the uterine cornua. The vertical portion of the “T” shaped device should extend straight down in the uterine corpus such it ends within the cavity.

Malpositioned IUCD is a condition where, although the IUCD is present within the uterine cavity, its placement is eccentric, or some part or whole of it may be embedded in the myometrium [1]. Malpositioned IUDs as seen in ultrasonography may be located in the lower uterine segment or cervix. These malpositions may be associated with an increased risk of contraceptive failure and potential perforation of the uterus and subsequent expulsion of the contraceptive device in the abdominal cavity. In a study comparing women with concomitant IUCD with intrauterine pregnancy versus women with a normally placed IUCD device compared a 64% rate of IUCD malpositioning among the pregnant cases, compared with an 11% rate among the no pregnant controls ( $p < 0.05$ ) [2]. Cervically placed IUCD had a 14-fold increased risk of pregnancy in this study.

A case-controlled study among women with malpositioned IUCDs and normally positioned IUCD showed a higher proportion of women having symptoms such as bleeding and pain. Both copper and levonorgestrel-releasing IUD were equally likely to be malpositioned [3].

Ultrasonography and hysteroscopy are the best and most practical to diagnose malposition and the possible existence of uterine anomalies. For women with malpositioned IUD, the IUD should be removed and replaced, if desired or correction of malposition and displacement may also be attempted by repositioning. Repositioning can be attempted blindly or by hysteroscopy.

The Karman cannula is a soft, flexible cannula (or curette). It is in use since the early 1970s. Due to its flexibility in comparison to the metal cannulas used earlier, there is reduced the risk of perforating the uterus during vacuum aspiration. Karmans cannula is made of polypropylene, available in a sterile package, and is disposable after single use. It is about 24 cm in length and available in eight diameters (4, 5, 6, 7, 8, 9, 10, and 12 mm). It is also calibrated in cm for depth analysis in utero. For easy recognition of different sizes, color coding of cannula is done. Karman's cannula has been used for endometrial biopsy, aspiration, apart from suction evacuation operations. We also have been using Karmans cannula for the purpose of pushing methylene blue dye in the uterus during the procedure of laparoscopic chromopertubation test. It can also be used to measure the uterocervical length when a uterine sound is unavailable.

### PROCEDURE

The novel use is like an insertion rod plunger for repositioning of those IUCDs which are displaced but still all of it is inside uterus either blindly, under ultrasonography guidance or during hysteroscopy. For blind repositioning of IUCDs at a later date, the inserter tube of IUCD is not available. To make the repositioning easy, Karmans cannula with its hollow to fit the IUCD can be an easily available substitute. It can be used *in situ* in the uterine cavity without the need for pulling out the IUCD and then re-inserting

This is done after cutting of the distal end of the 4 mm Karmans cannula which contains two beveled apertures on sides but is closed at the tip (Fig. 1). Under aseptic precautions, the cervix is held by a vulsellum, and a uterine sound is inserted to measure the uterocervical length. A 4 mm cannula is inserted into the cervical canal taking care that the thread and the vertical stem



**Figure 1: Karman's cannula size 4 with cut tip**

of the IUD snugly fit in the hollow of the cannula till the junction point. Then, the cannula is gently advanced inside the uterus till the IUCD touches the fundus. The force applied should be gentle. Vigorous attempts may lead to injury to myometrium if the IUD is an embedded one. The method has been used by the author for few cases and has been successful. This method is suitable for IUDs lying in lower segment or cervix.

## DISCUSSION

The advantages are repositioning the IUD *in utero* itself so that IUD does not need to be withdrawn outside and exposed to vagina

before reinsertion, thereby reducing chances of infection. Need for hysteroscopy is reduced. It is a cost-effective procedure as Karman is easily n widely available even in resource-poor settings. The disadvantage is if the IUD is embedded in myometrium, blindly pushing the IUD can cause injury or perforation. Hence, the author advises for only gentle pushing. If the IUD does not advance upward and undue resistance is felt, the procedure should be abandoned.

## CONCLUSION

Where repositioning of IUCD is required, a low-cost alternative is using this Karmans cannula.

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