Mini Review

Current Opinion in Gynecology and Obstetrics Size Matters: Contemporary use of the IUD

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Abstract

Long-acting reversible contraceptive choices are becoming more popular among young women, and providers may need to keep in mind those methods that are likely to be most successful. The dimensions of the uterine cavity vary according to the parity of a user, with the nulliparous woman having a smaller uterine space. With the known intrauterine contraceptive device side effects being possible, and with smaller such devices being clinically available for patients, selection of those smaller devices for contraceptive use may be more ideal for those younger nulliparous women. In this way, complications with this method may possibly be avoided.

Keywords: Copper IUD; LNG-IUS; IUD side effects; IUD perforation

With the increasing use of Long-Acting Reversible Contraception (LARC) choices, it is important for health providers to recognize the concerns which are pertinent to the patients requesting such proper management. Specifically, there are features of the Intrauterine contraceptive device (IUD) about which patients should be adequately informed, so that an optimal LARC method can be selected.

IUD use Among Nulliparas

The type of IUD which is selected for a patient should be suited for that individual patient. Before 2005, IUDs were not recommended for use in a nulliparous woman, but such is not the case at present, as there is currently a growing interest in this method of contraception among young nulliparous women [1]. It is worth noting that the average width of the nulliparous uterus (the interstitial distance at the fundus) is 27 mm, whereas the average width of the multiparous uterus is 32 mm [2]. The width of both the Cu-T380A IUD (i.e. the ParaGard) and the LNG-IUS (e.g. Mirena), however, is 32 mm. Interestingly, there are IUDs available today which have the width dimension

of 28 mm (e.g. the Skyla and the Kyleena). Given the IUD complications (e.g. expulsion, perforation and embedded IUD) that are known to occur, it seems that those IUDs which are smaller than the CuT380A and Mirena would be more ideal for the nulliparous woman, given these known average uterine dimensions.

Though the smaller LNG-IUS devices that are available today are often referred to as “low-progestin dose IUDs”, it seems that the 14 mcg of levonorgestrel released daily by the Skyla, the 17.5 mcg released daily by the Kyleena, or even the 19.5 mcg released daily by the Liletta (a standard-sized IUD), represents a trivial and inconsequential difference with the 20 mcg released daily by the Mirena, a standard-sized IUD. Whatever the amount of levonorgestrel contained in these IUDs, and minimally released daily, its contribution to the contraceptive effectiveness of the IUD may not be as significant as its minimization of the cramping pain often associated with this foreign body (i.e. the IUD) placed in this space. It may only have a minimal impact on the ovulatory dysfunction it causes, in that all IUD users have been shown to be ovulatory at times [3]. Characterizing these IUDs as

“low-dose” seems to be irrelevant, considering the more important size differences that exist. This size difference may account for the IUD complications that have been seen to occur [4], though this has not yet been adequately substantiated. However, expulsion risk is higher in younger women, which could be related to the fact that younger women may be more likely to be nulliparous [5].

Since the incidence of IUD perforation and migration is low [6,7], but that such complications do occur [8], along with higher discontinuation rates [9], there is a need for analyzing the complication rates relative to the IUD size which is used. Since the uterine cavity has been sonographically measured, and that width differences exist between the average nulliparous and multi-gravid uterus, recommendations to accommodate those known differences seem to be reasonable. As clinicians may often hear about patient complaints after IUD insertion, referring to pelvic discomfort, the practice of preferring a smaller IUD (e.g. the Skyla or Kyleena) for the nulligravida should be considered. Studies done to compare outcomes after insertion of these different-sized devices are certainly welcome, and such an analysis may have begun [10].

Figure 1: The arm of an IUD is shown as embedded in the left cornual portion of the uterus

Since a post-IUD insertion sonogram is rarely performed, even after postpartum insertion, evidence of a possibly mal-inserted IUD is not usually obtained, though some reports of partially expelled IUDs have been reported [11]. Embedding of an IUD into the uterine wall is certainly possible, as has been reported [12,13]. If an IUD is firmly embedded, and an attempt is made to remove it by grasping the string, breakage of the IUD can result. Such embedding would seem more likely to occur if an IUD were larger than the uterine cavity in

Figure 2: 3D ultrasound showing a combination of sagittal and rendering coronal views of the cervix, demonstrating an arm of the IUD within the anterior lip of the cervix at the level of the external os.

Figure 3: A partially expelled Mirena can be seen to be approaching the cervical canal with this 3D rendering mode image.

which it is placed, which might occur for all of those with a nulliparous uterus in which a standard-sized IUD is placed. Interestingly, there appears to be a discrepancy between the occurrence rate of an embedded or broken IUD in the medical literature and what can be found using social media or simply using Google. The authors’ own experience of identifying a broken IUD was recently published [14], representing only a few years in a relatively small hospital institution. It seems possible that all IUD complications are not systematically or consistently

reported.

Figure 1 shows an example of an embedded IUD. Figure 2 shows an example of a broken IUD. Figure 3 shows a partially expelled IUD, which may or may not be symptomatic. Each of these sonographic images were taken from the authors' own experience with these circumstances.

Selection of the appropriately-sized IUD (i.e. smaller-framed IUDs for nulliparous women) will likely limit the complications which have been seen to occur in the past.

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