



**Figure 1** Three-dimensional (3D) sonography of a TCu380A intrauterine device (IUD) (left) and levonorgestrel-releasing intrauterine system (IUS) (Mirena®) (centre) causing bleeding and pain due to severe disproportion. The 3.2 cm transverse arms of the framed IUD/IUS penetrate the uterine wall or tube(s) as the cavities are much too small (19.56 mm). The 3D ultrasound on the right illustrates the compatibility of the frameless IUD (GyneFix®) with the very narrow uterine cavity (fundal width 11.00 mm) of a young nulliparous woman.

However, many young women experience problems with IUD use, particularly if they are nulliparous. Researchers long ago demonstrated the great disparity between uterine cavities, particularly transverse dimensions, which were found to be on average only 2.5 cm in the fundal area in nulliparous women and only marginally wider in women who had given birth.<sup>3</sup>

Recent studies conducted in nulliparous women with conventional IUDs [e.g. Copper T380A or the Mirena® intrauterine system (IUS)], which are 3.2 cm wide, came to the conclusion that side effects (e.g. bleeding, pain) are the consequence of disproportion between the IUD and the endometrial cavity and may lead to early discontinuation.<sup>4–5</sup> Other studies conducted in nulliparous women reported similar low continuation rates.

A recent review article by the present author reports on randomised and non-randomised studies conducted with the frameless GyneFix® 200 and 330 IUDs in parous and nulliparous women.<sup>6</sup> The unidimensional design of the frameless IUD explains its high acceptability and high continuation of use. Continuation rates exceeding 90% at 5 years are usual in such women. A recent multi-centre study (unpublished data) conducted with the frameless copper and frameless levonorgestrel-releasing IUS in adolescent and young nulliparous women confirmed these high continuation rates. Figure 1 demonstrates the importance of an optimal IUD-cavity relationship. It is evident that high

continuation of use is the aim of LARC and this can only be obtained if the acceptability of the method is high. The latter has been the challenge for researchers in recent decades.

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**Competing interests** The author is a reproductive health consultant on intrauterine devices and systems and has been involved in the optimisation of new drug delivery systems for use in the uterus.

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## Not all IUDs fit in young nulliparous and adolescent women

Long-acting reversible contraceptive methods (LARC) are considered important to reduce the number of unintended pregnancies. Winner *et al.*<sup>1</sup> found that women using oral contraceptives, a transdermal patch or a vaginal ring had a risk of contraceptive failure that was 20 times as high as the risk among those using LARC [intrauterine devices (IUDs), implants]. In the CHOICE cohort study of acceptance of LARC by young women, most subjects (~70%) aged 18 years and older selected intrauterine contraception.<sup>2</sup>

- 6 Wildemeersch D, Pett A, Jandi S, *et al.*  
Precision intrauterine contraception may significantly increase continuation of use: a review of long-term clinical experience with frameless copper-releasing intrauterine contraception devices. *Int J Womens Health* 2013;5:215–225.