

## LETTER TO THE EDITOR

# Uterine compression suture: Some procedures to reduce necrosis or synechia

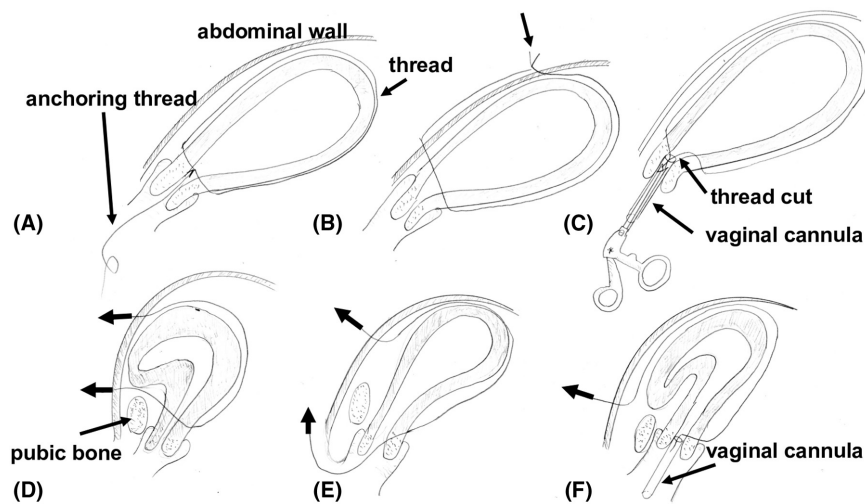
Sir,

Uterine compression suture (UCS) is widely used to achieve hemostasis for postpartum hemorrhage; however, it is not without reported adverse events, including uterine necrosis and synechia,<sup>1</sup> presumably secondary to inflammation and/or infection around the threads.<sup>2</sup> Uterine involution in the immediate postpartum period reduces the tension of UCS and hence they no longer serve any purpose, and removal has been suggested to decrease the risk of necrosis and synechia.<sup>2</sup> There are two possible procedures to remove threads: laparoscopic removal and employment/design of a new removable UCS.

First, the threads should be removed under laparoscopy. Hashida et al.<sup>3</sup> first reported this procedure in 2013. The threads of Matsubara-Yano UCS<sup>1</sup> were successfully removed under

laparoscopy. Suzuki et al.<sup>4</sup> also reported successful removal of the threads. In both reports, the threads were removed due to some adverse events caused by UCS. To the best of my knowledge, there have been no reported attempts at routine laparoscopic thread removal to prevent adverse events after UCS. Laparoscopy may cause, more or less, physical and/or psychological stress to the patient and is associated with adverse events, thus its prophylactic use after UCS should be practiced cautiously.

The second method to prevent necrosis and/or synechia is designing a removable UCS. In 2014, I, for the first time to my knowledge, suggested a possible method (Figure 1A,B).<sup>2</sup> The thread was to be removed from the vaginal route or the abdominal wall after hemostasis was achieved (Figure 1A,B). This is theoretical as I did not perform it. Zhang et al.<sup>5</sup> were the first to perform this procedure,



**FIGURE 1** Illustrations of the removable uterine compression suture (UCS). For some UCS, the right thread is tied to the left thread (D, E, and F); the knot is not indicated. For technical details, please refer to the original article citation. (A) Theoretical model of removable UCS:<sup>2</sup> vaginal thread removal. The anchoring thread is pulled, and thereby the thread is cut and removed from the vagina. (B) Theoretical model of removable UCS:<sup>2</sup> abdominal thread removal. The abdominal wall thread is cut and removed (arrow). (C) Removable UCS.<sup>5</sup> The vaginal thread of Hayman UCS is cut using long laparoscopic scissors inserted through a vaginal cannula. (D) Removable UCS.<sup>6,7</sup> The thread of Hayman UCS penetrates the abdominal wall (arrow), and thus is removable. The uterus is in a marked anteflexed position. (E) Ring compression suture.<sup>8</sup> The thread should be placed on the abdominal wall and vagina. The uterus should be compressed against the pubic bone and the thread should be removed through the vagina. (F) Removable retropubic uterine compression suture.<sup>9</sup> The uterus should be in a marked anteflexed position, which achieves hemostasis. The abdominal wall thread is cut and pulled out from the vagina using a vaginal cannula.

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involving a removable UCS. The threads of B-Lynch or Hayman UCS were cut and removed from the vagina an average of 21.6 h after UCS (Figure 1C). Then, Aboufalah et al.<sup>6</sup> reported a new removable UCS (Figure 1D); with the Hayman suture, the uterus should be in a marked anteflexed position and is compressed against the pubis.<sup>6,7</sup> The thread is tied on the abdominal wall, which is removed after 48 h. Li et al.<sup>8</sup> reported another removable UCS, referred to as a "ring compression suture." Abdominal and vaginal threads compress the uterus against the pubic bone, with threads removed from the vagina (Figure 1E). In the report by Li et al. on "removable retropubic uterine compression suture," abdominal and vaginal threads compress the uterus against the pubic bone and abdominal wall in a marked anteflexed position with threads removed from the vagina (Figure 1F).<sup>9</sup> Nine years have passed since I proposed the concept of removable UCS. This concept has been realized and is being employed in clinical practice.

The incidence of necrosis and/or synechia after UCS has not yet been determined. Whether removable UCS achieves no worse hemostasis than nonremovable (orthodox) UCS has not yet been demonstrated. Depending on the data of both, we must further determine: (i) whether prophylactic laparoscopic thread removal should be used, (ii) whether removable UCS actually reduces necrosis and/or synechia, and (iii) if so, which removable suture is better.

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