



**Society of Radiologists in Ultrasound  
2012 Toshiba Residents Program**

Rita Gidwaney, MD

Ruth Goldstein, MD (mentor)

University of California San Francisco (UCSF) Medical Center, San Francisco, CA

**History:**

44-year-old female presented with severe uterine cramps, worsening over the last five days accompanied by some vaginal spotting. She reported having radiofrequency endometrial ablation two months prior. Her last reported menstrual period was three months prior. She also provides a remote history of four spontaneous abortions. Her past medical history was also significant for lung and breast carcinoma, now status post bilateral mastectomy.

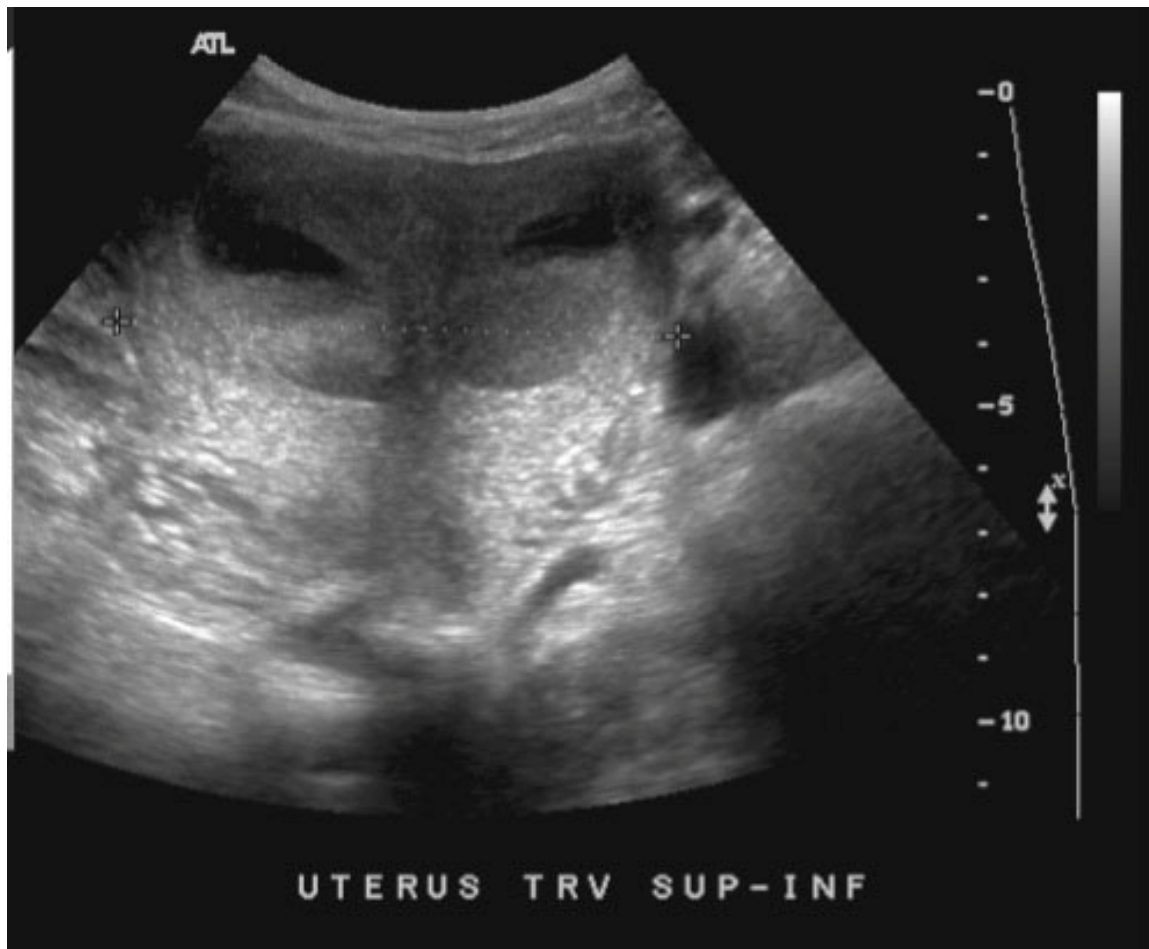


Figure 1a

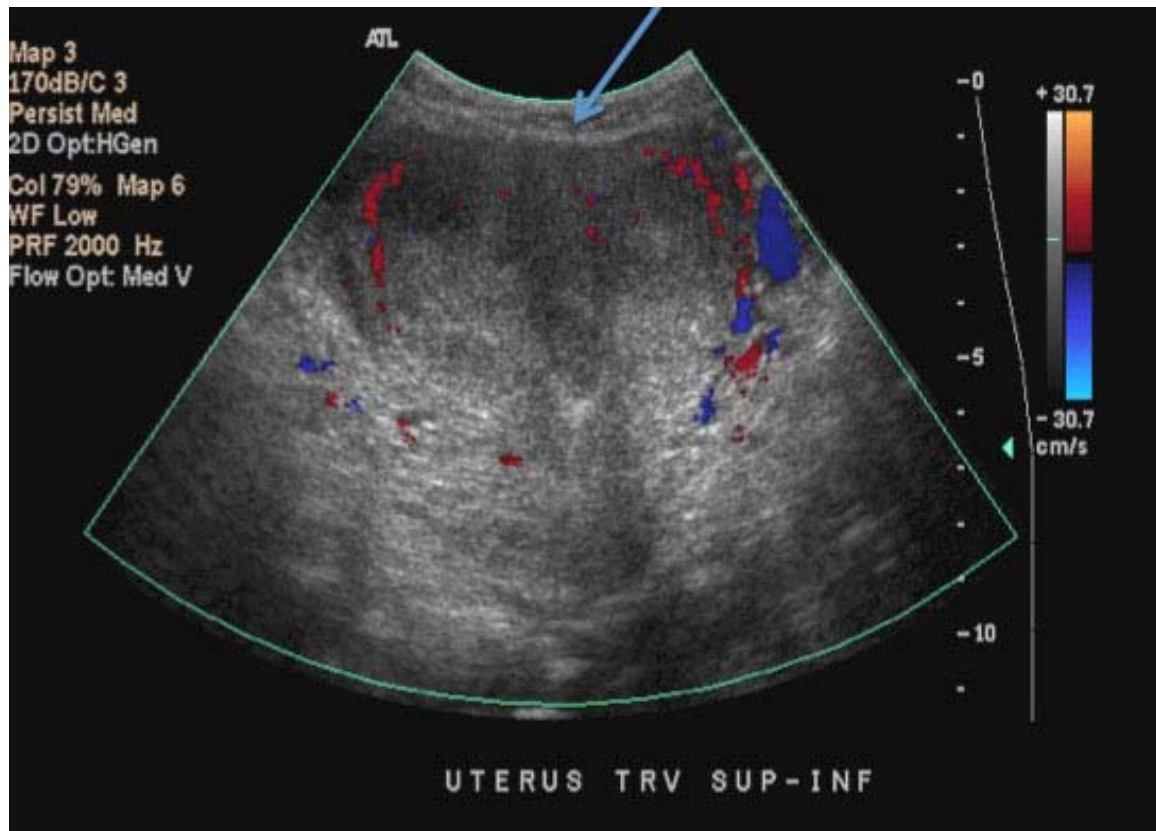


Figure 1b

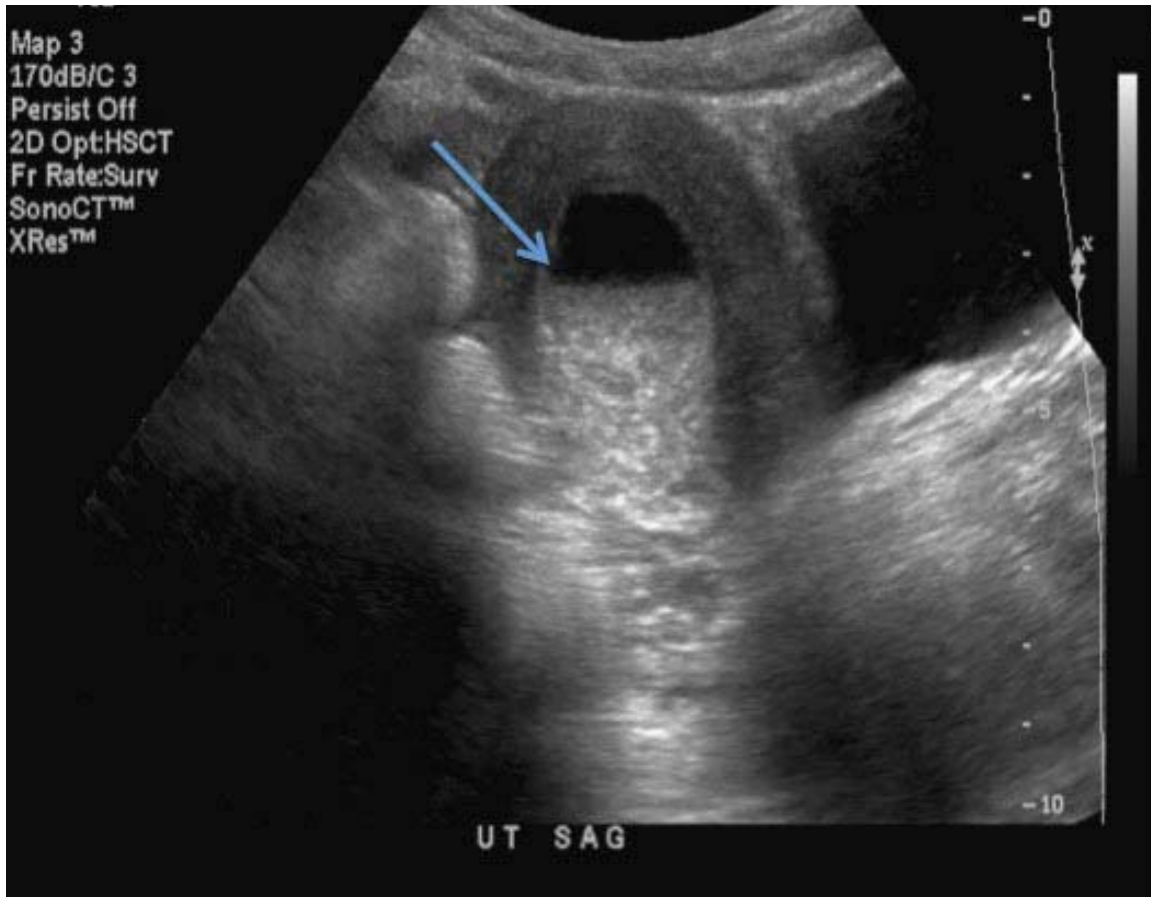


Figure 1c

**LEGEND:** Figures 1a-c. Grey-scale and color Doppler sonographic coronal and sagittal images demonstrate two endometrial cavities with a convex extrauterine wall (arrow fig. 1b), consistent with a septate uterus. There is echogenic debris within both horns with fluid-fluid levels (arrow fig. 1c). These findings suggest hematometra in a septate uterus.

**DIAGNOSIS:** Hematometra in septate uterus.

Septate uterus, the most common forms of congenital uterine malformations, affects 3-4 % of the population (1) and fully 55% of all Mullerian Duct Anomalies (2). It is usually diagnosed due to infertility issues, most commonly recurrent abortions. Septate uterus is associated with a higher chance of 1<sup>st</sup> trimester miscarriages than other uterine anomalies (1). Septate uterus results from incomplete resorption of the paramesonephric muellerian ducts during the first trimester of pregnancy. The absorption of the septum normally initiates at the level of the uterine cervix and continues upwards in the direction of the uterine fundus. Depending on the size of the septum, the uterine cavity may be affected only partially, as in case of an incomplete septate uterus, or it may be divided into two separate components including two cervixes and eventually a vaginal septum, as in case of a complete septate uterus (1).

Central hematometra is defined as endometrial bleeding behind a cervical or lower uterine segment stenosis. It often presents with cyclical lower abdominal pain. In patients with prior ablation treatment, the pain may start weeks to months post-ablation. Treatment includes cervical dilation or hysteroscopic lysis of the adhesions under ultrasound guidance. Cervical stenosis may be prevented if ablation does not include the internal os (3).

Complications of endometrial ablation include intrauterine scarring and contracture. Hematometra follows in <3 % of patients after thermal balloon endometrial ablation (4). In patients with roller-ball ablation, incidence of symptomatic cornual hematometra and post-ablation sterilization syndrome can be seen in up to 10% of women (5). NovaSure is an ablation technology that uses up to 90 seconds of radiofrequency energy to treat menorrhagia. The reaction caused in the endometrial tissue can create scarring and stenosis of the cervix. Any subsequent bleeding will become obstructed, resulting in central hematometra, cornual hematometra, post-ablation tubal sterilization syndrome (PATSS), or retrograde menstruation, and can even lead to potential delay in diagnosis of endometrial carcinoma (3).

#### **References:**

1. Grimbizis GF, Camus M, Tarlatzis BC, Bontis JN, Devroey P. Clinical implications of uterine malformations and hysteroscopic treatment results. *Hum Reprod Update*. 2001;7:161-174. doi: 10.1093/humupd/7.2.161.
2. **Fielding JR, Brown DL, Thurmond AS. Gynecologic Imaging 2011. Elsevier, Philadelphia, pp 280-2.**
2. McCausland, AM., McCausland, VM. Long-term complications of endometrial ablation : Cause, diagnosis, treatment, and prevention. *The Journal of minimally invasive gynecology*. 2007, vol. 14, n.4, p. 399-406
3. Hubert SR, Marcus PS, Rothenberg JM, Schilder JM, Hurd WW. Hematometra after thermal balloon endometrial ablation in a patient with cervical incompetence. *J Laparoendosc Adv Surg Tech A*. 2001 Oct;11(5):311-3.
4. McCausland, AM, McCausland, VM. Frequency of symptomatic cornual hematometra and postablation tubal sterilization syndrome after total rollerball endometrial ablation: A 10-year follow-up. Presented at the 68th Annual Meeting of the Pacific Coast Obstetrical and Gynecological Society, Ashland, Oregon, October 3-7, 2001.