Uterine Hemostasis is Achieved by Thrombosis of Uterine Veins

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Evidence for Hemostasis by Thrombosis of Uterine Vessels

- Microscopic
- Macroscopic
- Biochemical
Obstetrical Bleeding

Bleeding that originates from the vessels within the gravid or postpartum uterus.
Term Placenta
“A physiologic obliteration takes place as the arteries undergo obliteration and hyaline degeneration, whereas the veins undergo thrombosis with subsequent organization.”

“The extreme efficiency with which the postpartum uterus solves its own problems of hemostasis…is noteworthy.”

Involution and Subinvolution

• Involution is the process by which the uterus attempts to return to its prepregnancy size and condition.

• In normal involution, blood flow to the uterus declines from 15% of cardiac output to < 1% of cardiac output.

• In subinvolution bleeding is longer and heavier with a uterus that is softer than would be expected.

<table>
<thead>
<tr>
<th>Involuted placental bed tissue</th>
<th>Subinvoluted placental bed tissue</th>
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<tbody>
<tr>
<td>• Hyalinized residua of uterine arteries</td>
<td>• Widely distended, partly hyalinized vessels</td>
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<tr>
<td>• Arteries clearly demarcated from myometrium</td>
<td>• Fresh thrombi on organizing thrombi</td>
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<tr>
<td>• Vascular lumina collapsed by thrombi</td>
<td>• Thrombi only partly occluding the vessels</td>
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<tr>
<td>• Occasional recanalization of the lumina of regenerating vessels</td>
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Macroscopic Changes – Pelvic Veins
Evidence of Pelvic Thrombosis on MRI PP


[Graph showing percentages of possible, probable, and definite pelvic thrombosis after different types of delivery.]
Thrombosis of Pelvic Veins

• Because venous bleeding from uterine veins can contribute to bleeding from the placental bed, perhaps we may infer that thrombosis of pelvic veins is part of the physiologic process that includes thrombosis of the uterine veins.

• Thrombosis of the uterine veins interrupts blood flow at the placental site, helps achieve uterine hemostasis and facilitates involution.
Biochemical Confirmation of the Process

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