



# Reproductive Concerns and VWD

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# Overview

- Anticipation of Menstruation
- Management of the Menstrual Cycle
- Planning for Pregnancy
- Management of Postpartum Bleeding
- Alternatives to Hysterectomy

# Disclosures

- Research funding and honoraria from CSL Behring
- Honoraria from Grifols

# Anticipation of Menstruation



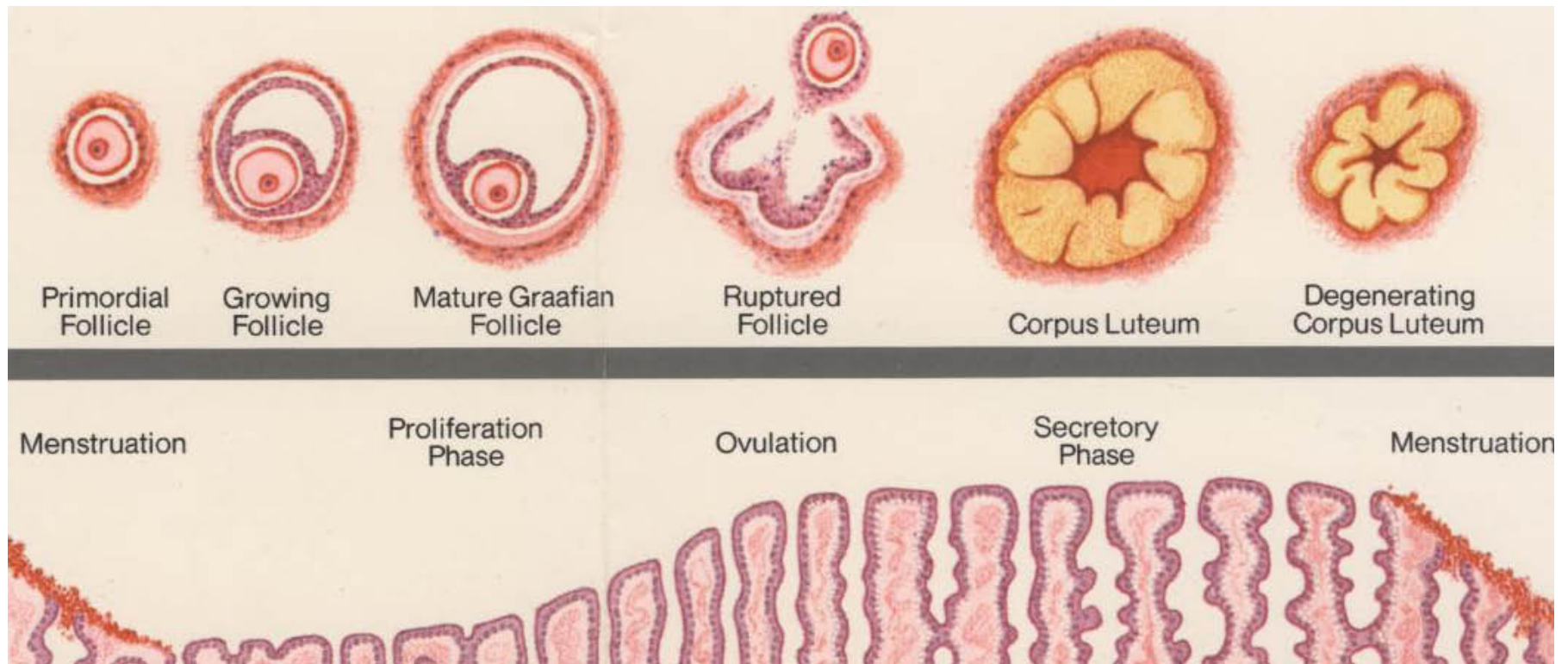
# Anticipation of Menstruation

- Females with VWD can bleed with their first period.
- Illustrative case.
- Erik von Willebrand's index patient ultimately bled to death with her 4<sup>th</sup> menstrual period.
- Need to have a plan in place if heavy bleeding occurs
  - Who to call
  - Where to go
  - What the treatment will be

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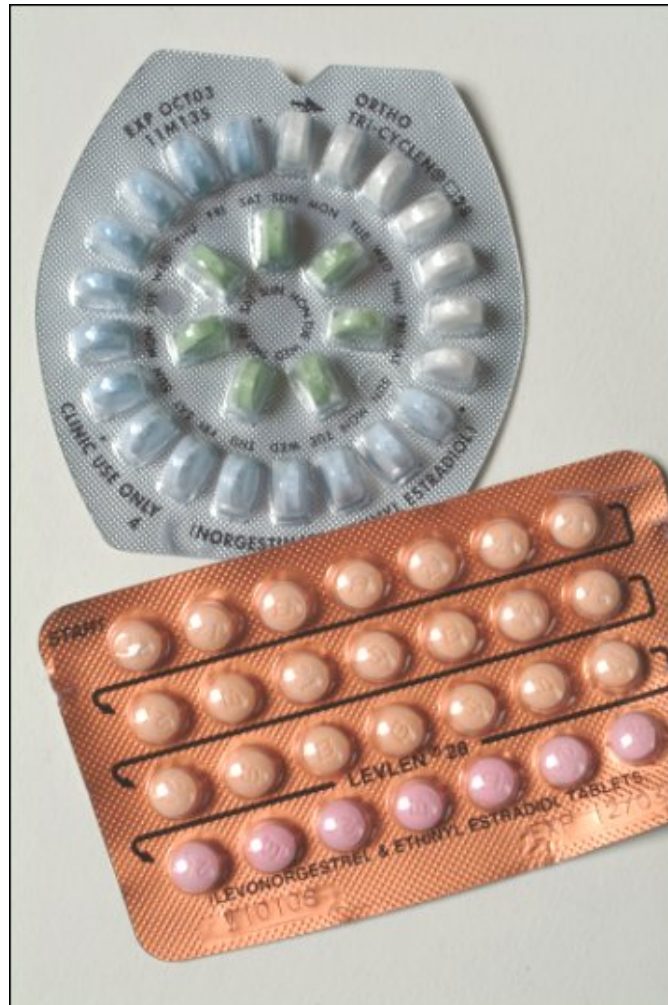
# Management of the Menstrual Cycle



# Gynecological Management of Menorrhagia: Therapies with Data in Women with Bleeding Disorders

- oral contraceptives
  - reduce menstrual blood loss
  - increase VWF & FVIII levels
- Mirena (levonorgestrel) IUD

# Oral Contraceptives

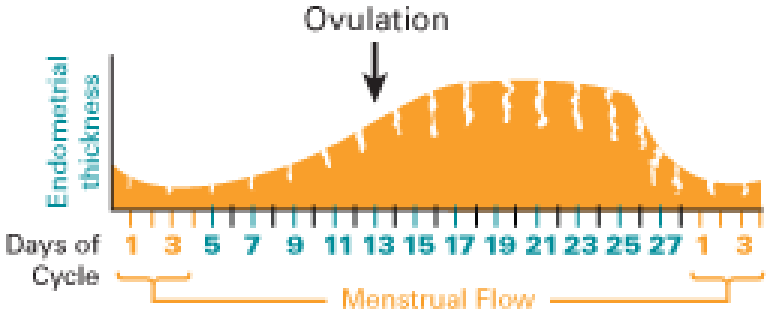


# Mirena IUD

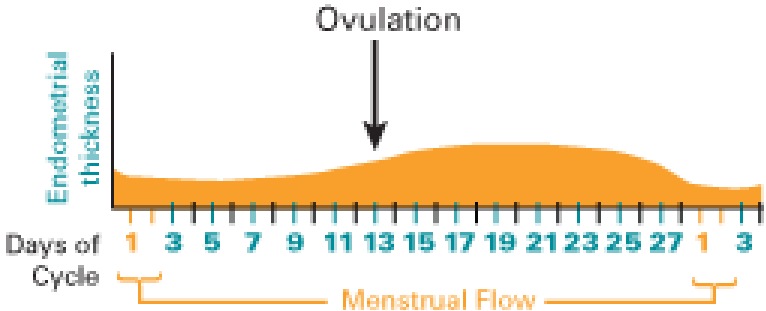


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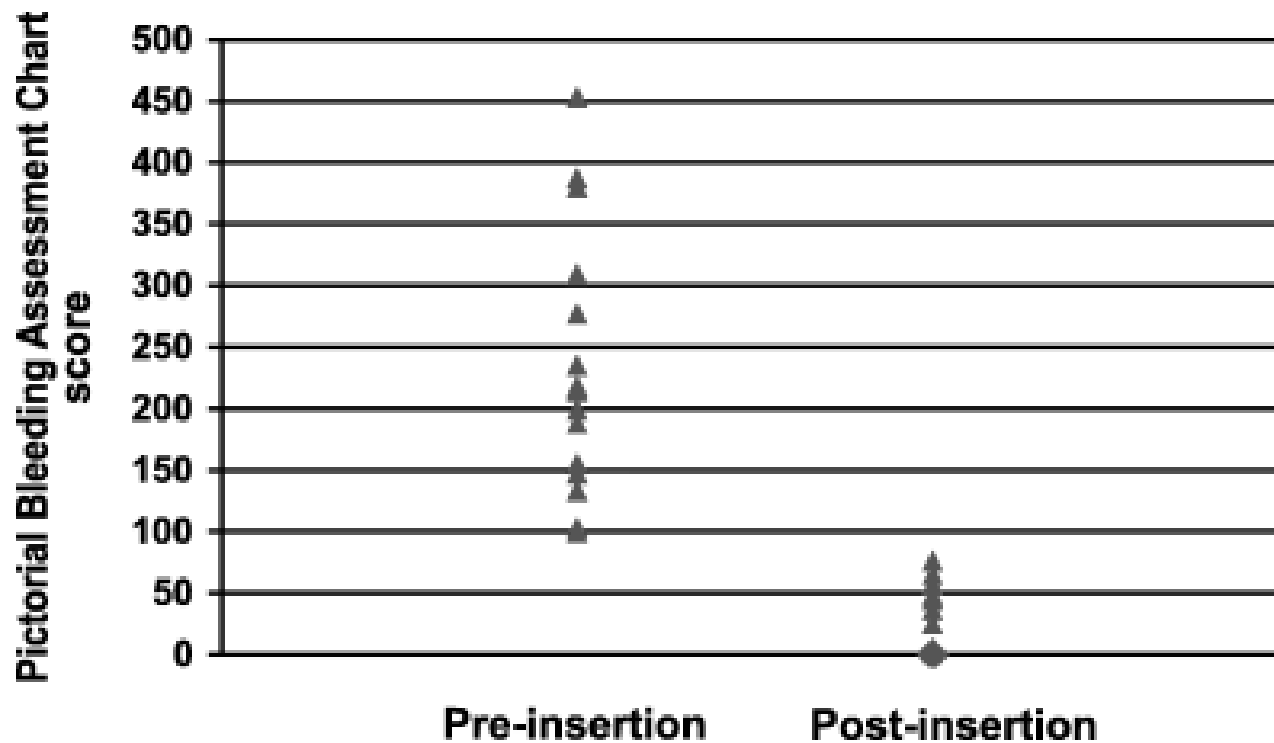
## Lining of uterus during menstrual cycle **without Mirena**



## Lining of uterus during menstrual cycle **with Mirena**



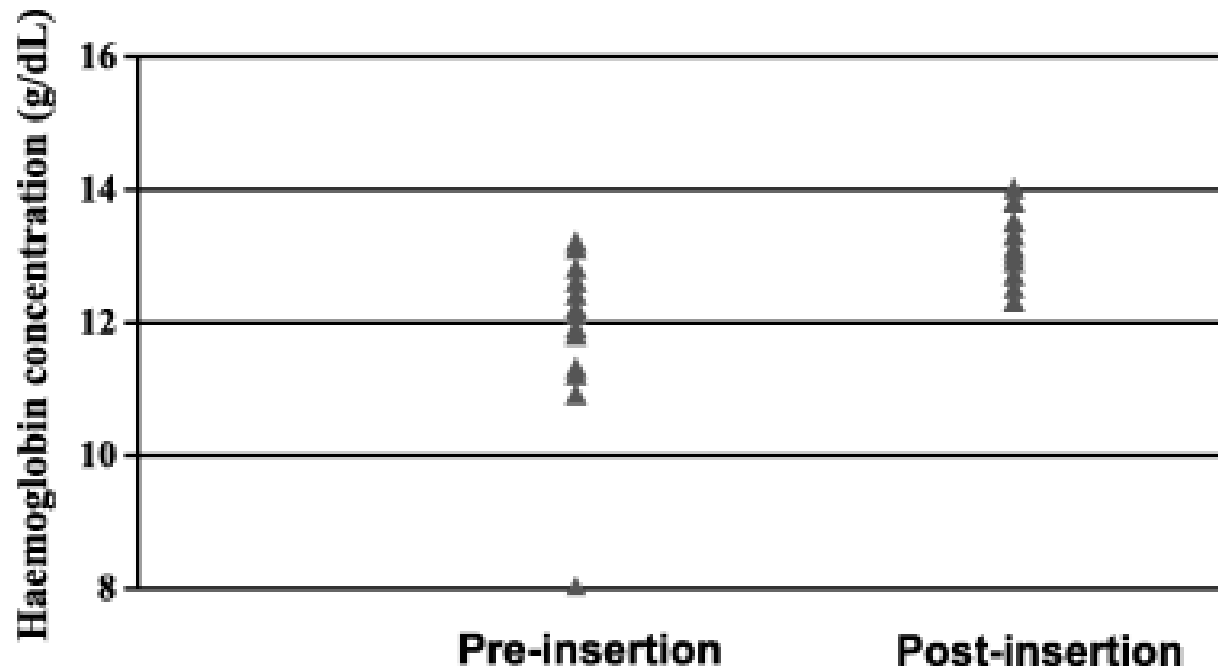
# Mirena IUD in Women with Bleeding Disorders\* (n=16)



Kingman et al, Bjog, 2004

\*13/16 with VWD, 2/16 FXI deficiency, 1/16 Hermansky-Pudlak

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# Gynecologic Management of Menorrhagia: Effective Medical Therapies without Data in Women with Bleeding Disorders

- other combined hormonal contraceptives
  - patches
  - rings
  - extended-use oral contraceptives
  - continuous oral contraceptives
- other progestin-only contraceptives
  - shots
  - pills
  - implants

# Hemostatic Therapies in VWD

- DDAVP
- Antifibrinolytics
  - aminocaproic acid
  - tranexamic acid
- Von Willebrand factor concentrates
  - Intermediate purity factor VIII concentrates

# Planning for Pregnancy



# Prior to Conception

- Manage menorrhagia and ovulation without oral contraceptives
- Inform of increased bleeding risks with pregnancy, especially delayed postpartum hemorrhage
- Vaccinate against hepatitis A & B
- Offer visit with genetic counselor
- Offer visit with pediatric hematologist

# During Pregnancy

- Allow women with factor levels in the normal range to receive care and deliver in the community
- For management of miscarriage, termination of pregnancy, childbirth and other procedures, recommend referral to a hemophilia treatment center for women with:
  - type 3 VWD
  - type 2 VWD
  - type 1 VWD with a history of hemorrhage
- Partner with a specialist in high risk obstetrics
- Involve the anesthesiologist
- Develop a plan for von Willebrand factor replacement at the time of delivery

# Management of Postpartum Bleeding



# Studies of Postpartum Hemorrhage in Women with VWD

	Cases	Controls	P value
Silwer et al, 1973	23.5%	19%	NS
Kouides et al, 2000	31%	10%	<0.01
James & Jamison, 2007	6%	4%	<0.01

# Causes of Postpartum Hemorrhage

- uterine atony
- retained placenta
- birth trauma
- uterine rupture
- uterine inversion
- disseminated intravascular coagulation
- von Willebrand's disease or other bleeding disorder

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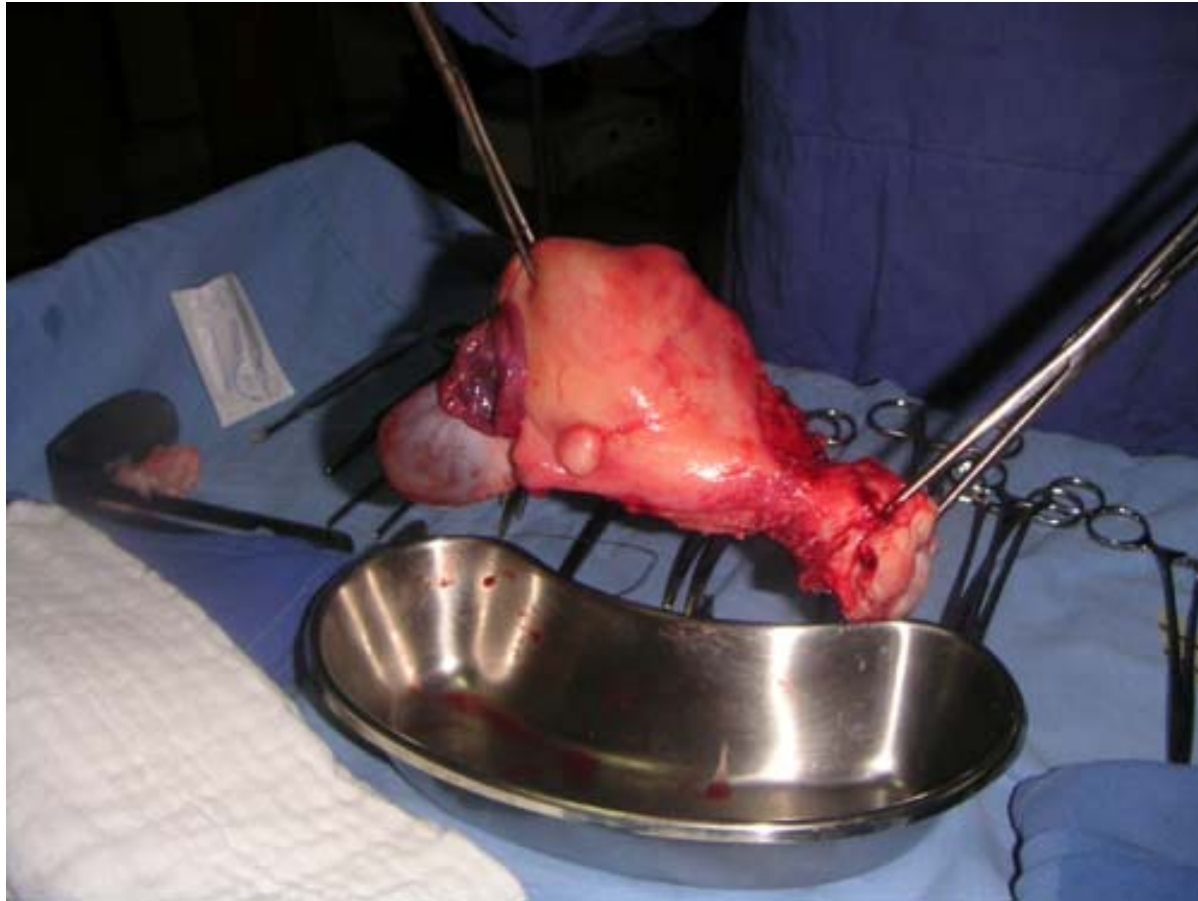
# Reports of Delayed Postpartum Hemorrhage

Ramsahoye et al, 1995	24 deliveries in 13 women with VWD	25%
Kadir et al, 1998	54 deliveries in women with VWD	20%

# Postpartum

- Women bleed for a median 21-27 days after delivery
- Factor levels remain elevated for 14-21 days
- Women are vulnerable to hemorrhage after factor levels fall
- Roque reported median time of postpartum hemorrhage in women with VWD to be day 15
- Prophylaxis for only 3-5 days postpartum will likely be insufficient
- More data are required

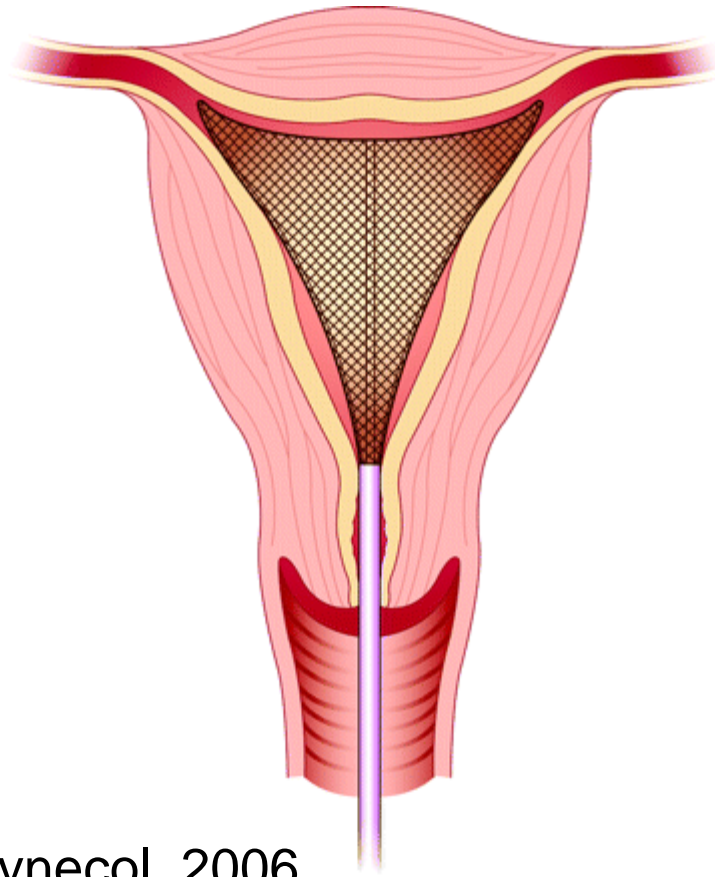
# Alternatives to Hysterectomy



# Dilation and Curettage



# Endometrial Ablation NovaSure: Radiofrequency



Sharp, Obstet Gynecol, 2006

# Success of Endometrial Ablation\*

	Normal menses	Amenorrhea
ThermaChoice	80%	13%
Her Option	67%	22%
Microsulis	87%	55%
Hydro ThermaAblator	68%	35%
NovaSure	78%	36%

\*Summaries of safety and effectiveness – from [www.fda.gov](http://www.fda.gov)

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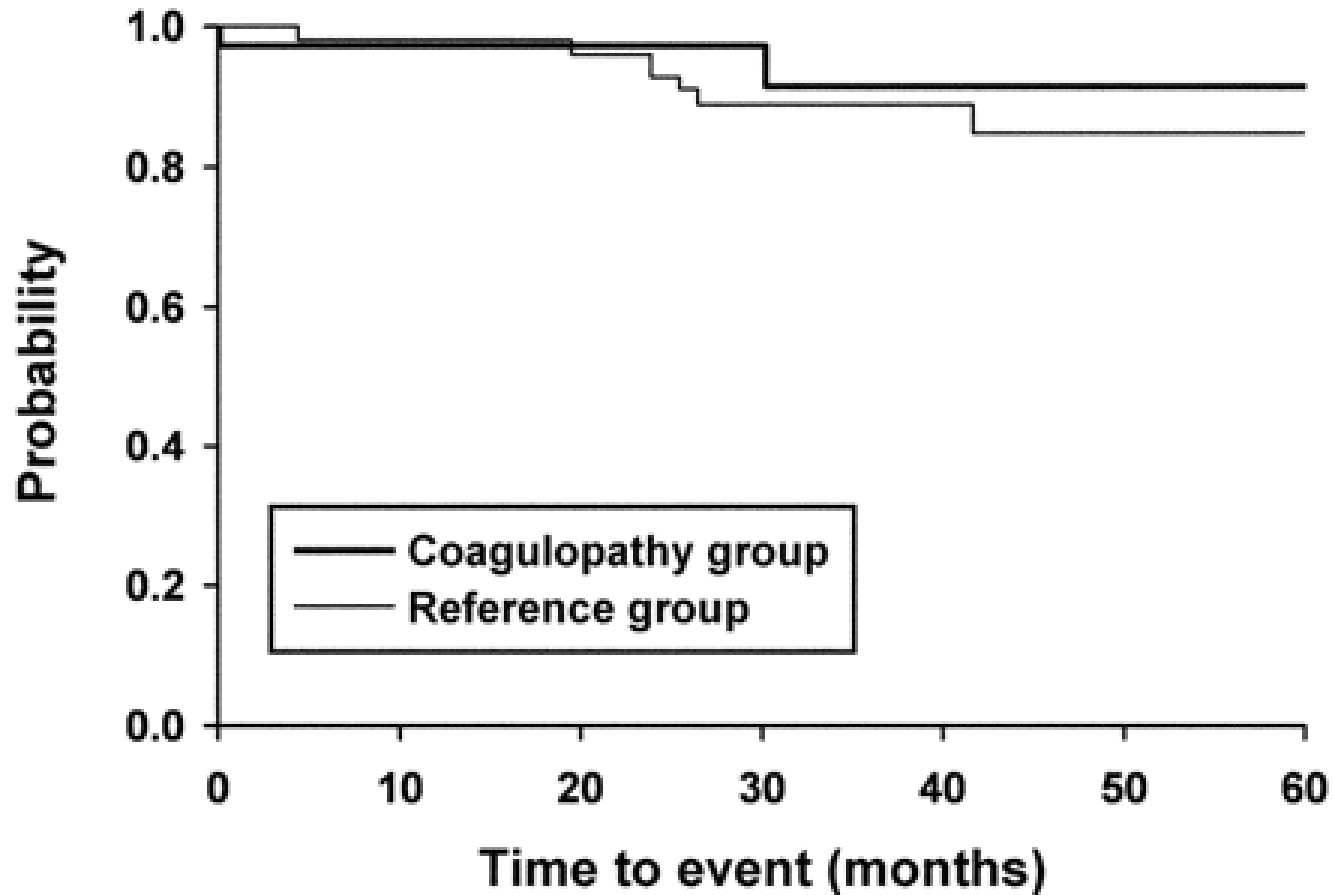
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# Success of Endometrial Ablation in Women with Coagulopathy (n=41)\*



El-Nashar et al, Obstet Gynecol, 2007

# Complications of Hysterectomy in Women with VWD\*

	No VWD n=1,357,588	VWD n=545	P value
Thrombosis	0.20%	0	1.000
Infection	0.38%	0.73%	0.159
Transfusion	2.13%	7.34%	<0.001
Bleeding complications	0.86%	2.75%	<0.001
Wound complications	0.15%	0.37%	0.192
Mean length of stay	3.49 days	3.68 days	0.0877
Cost	\$13,225	\$19,584	<0.001
Died	0.13%	0.18%	0.515

\*James et al, unpublished data from the NIS

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