Clinical Conundrum:
Using IV estrogen as adjunctive hemostatic therapy in a patient with acute, severe uterine hemorrhage and history of thromboembolic event or risk factors.

Background:
Hormonal management is considered the first line of medical therapy for patients with acute uterine hemorrhage without known or suspected bleeding disorders. However, across indications, it is generally contraindicated in patients with a history of thromboembolic event or risk factors. Little data exist regarding the use of IV estrogen in patients with acute severe uterine hemorrhage and pre-existing thromboembolic risk factors.

Findings:
1.) In non-pregnant hemodynamically unstable patients, intravenous (IV) or intramuscular (IM) conjugated estrogen 25 mg may be administered, with repeat doses in 4 to 6 hours as needed for hemorrhage control.

2.) In one randomized controlled trial of 34 women, IV conjugated equine estrogen was shown to stop bleeding in 72% of participants within 8 hours of administration compared with 38% of participants treated with a placebo.

3.) A theoretical risk of thromboembolic complications has been inferred on the basis of previous studies of oral contraceptives and estrogen replacement therapy. However, only 1 case has been reported with use of short-term intravenous CEE therapy. In that case, the patient was treated with intravenous CEE for severe menorrhagia, and she was also taking GnRH agonist treatment combined with add-back therapy consisting of 0.625 mg of CEE plus medroxyprogesterone acetate 10 mg for uterine fibroids.

4.) Once hemodynamic stability has been achieved, the patient can be treated with progesterone-only hormonal therapy—10 mg of medroxyprogesterone (Provera) once a day for 14 days—and outpatient follow-up in 2 to 4 weeks.

Conclusions:
IV estrogen therapy can serve as an effective adjunct hemostatic therapy to complement fluid resuscitation in the acute management of a patient with severe uterine bleeding. Although reports of acute complications in patients with history of thromboembolic event or risk factors are rare, more research is necessary to quantitatively assess the long-term risk of IV estrogen therapy in this population. In all cases, patients should be counseled on potential risks and benefits prior to initiation of therapy.

2.) DeVore GR, Owens O, Kase N. Use of intravenous Premarin in the treatment of dysfunctional uterine bleeding—a double-blind