

An Unreported Etiology for Couvelaire Uterus

Paulina Osial, Andrew L. Atkinson, Douglas Sherlock, David Moskowitz

Abstract

Couvelaire uterus or Utero-placental apoplexy is described in the setting of a gravid uterus with extravasations of blood into the uterine musculature to the depth of the uterine serosa with rare cases documenting hemorrhage extending to the broad ligaments and ovaries. There are very few cases reported in academic journals secondary to the nature of the diagnosis which involves either pathology or direct visualization during laparotomy. Majority of the time, Couvelaire uterus is related to placental abruption compromising both mother and fetus.

Case report: The case we describe is an unreported etiology of Couvelaire uterus, in which the complication arose after a dilation and evacuation secondary to missed abortion at 13 weeks of gestation. The case was further complicated by hemodynamic instability and obstructive urinary retention which eventually resulted in a hysterectomy having to be performed.

Keywords: Couvelaire Uterus, Utero-placental Apoplexy, Dilation and Curettage, Hysterectomy

Department of Obstetrics and Gynecology, Jersey Shore University Medical Center, Neptune New Jersey

Corresponding Author mail: A.AtkinsonMD@gmail.com

Introduction:

In 1911, a French Obstetrician by the name of Alexandre Couvelaire, published a detailed case report titled, “Traitment Chirurgical des Hemorrhages Utero-Placentaires avec Decollement du Placenta Normalement Insere” in

which he described a patient that had a complete placental abruption with extravasation of blood that infiltrated the broad ligments.^[1,2] He went on to compare the external features of the uterus looking like the ovary twisted on its pedicle from an ovarian cyst.^[1]

He called this condition uteroplacental apoplexy, in which later it became affectionately known as Couvelaire uterus. Couvelaire recognized that these patients more often than not, were at high risk of death, so in his paper he concluded that these patients required “rapid surgery to secure adequate hemostasis,” and that “a desire to preserve reproductive function cannot in itself serve as a priori argument in favor of conservative surgery.”^[1] Today, with the advancements in ultrasound and management of hemodynamically unstable patients with placenta abruption, hysterectomy is rarely indicated, so Couvelaire uterus is rarely diagnosed. On occasion, a uterus can be identified during elective or indicated cesarean sections showing multiple bluish foci hinting at extravasation of blood to the level of the uterine serosa, but these findings do not justify any

further intervention as it does not increase the risk of uterine atony or any other complications.^[3]

In this report, we explore another potential etiology to Couvelaire uterus that stems from a procedure that is performed by the general obstetrician hundreds of times in their career. The procedure being a simple dilation and curettage (D&C) using a curette, either suction tip or rigid, which is used for evacuation of contents of the gravid uterus.

Case Presentation

This is a 33 year G9P5045 who presented for a routine obstetric visit and was found to have a missed abortion at 16 weeks by dates, measuring 13 weeks by ultrasound. The patient subsequently underwent a dilation and evacuation (D&E), performed without complications, but to be noted that both the suction catheter as

well as the conventional rigid curette was used during this case. The patient had an unremarkable postoperative course and was discharged the same day. A couple hours after discharge, the patient presented to the emergency room with complaints of severe constant abdominal pain, heavy vaginal bleeding, and urinary retention. On pelvic ultrasound, it was found that her uterus measured approximately 15x10cm containing large amounts of anechoic fluid. Her hemoglobin prior to the D&E was 14.2gm/dl, which was redrawn in the ER six hours after the procedure and was found to be 7.6gm/dl. On physical exam, the uterus had somewhat prolapsed into the vagina most likely kinking the urethra causing the urinary retention. Furthermore, there was active bleeding seen from the external os of the

cervix on speculum exam. The patient had a urinary catheter placed at that time, which yielded 900cc's of non bloody urine. With obvious hemorrhage occurring in the uterus, the patient at that time was refusing surgical intervention, so she underwent a uterine artery embolization. After the embolization, the patient continued to have heavy vaginal bleeding and her pulse rate at that time was in the 120's, with a blood pressure in the 90's over 50's. Because of the continued bleeding and evidence that she was now showing signs of early hypovolemic shock, the patient was taken to surgery. Laparoscopy was performed and the findings were a boggy, edematous, 15 week size uterus that was dark and dusky in appearance, with no evidence of peritoneal hemorrhage (Figure 1).



Figure 1: Uterus minutes after being extracted out of the body. Note the dusky hue as well as the dark lines of hemorrhage seen through the serosa.

Hysterectomy was performed, without complications. Intra-operatively she received 2units PRBC, 1unit of platelets and 2units FFP. The procedure was uneventful, and the patient went on to make a full recovery with her urinary retention resolving after catheter removal on post operative day number one. Final pathology report confirmed Couvelaire uterus with extravasations of blood into the myometrium and small area of rupture through the uterine wall. The suction catheter used for the D&E was fitted through the hole of the uterus and was found to fit with ease in the pathology department.

Discussion

There are very few reported cases of Couvelaire uterus in medical literature

with most published data stemming from the mid to early 1900's. A search on PUBMED, using the terms, "Couvelaire Uterus", and "Uteroplacental Apoplexy," produced only 35 results.

With the curette perforating the uterus, blood was able to dissect between the layers of the uterus concealing the vast majority of hemorrhaging the patient was experiencing. Typical presentation for a patient with Couvelaire uterus will be a patient who is hemodynamically unstable with or without heavy vaginal bleeding. The urinary retention that our patient experienced is very atypical and has never been reported with a Couvelaire uterus.

Conclusion

We have shown in our presented case an undocumented etiology caused by an iatrogenic injury to the uterine wall by a curette causing extravasations of blood. We can also conclude from our case that embolization of uterine arteries is not a recommended treatment for a patient with a suspected Couvelaire uterus.

References

1. Couvelaire, A. Traitment Chirurgical des Hemorrhages Utero-Placentaires

avec Decollement du Placenta Normalement Insere. *Ann. De Gynec.* 8:591, 1911.

2. Speert H. Obstetric-gynecologic eponyms; Alexandre Couvelaire and uteroplacental apoplexy. *Obstet Gynecol.* 1957 Jun;9(6):740-3.

3. Gibbs R.S. Karlan B.Y. Haney A.F. Nygaard I.E. Chapter 21. Placenta Previa and Abruption. In: Danforth D.N. Scott J.R. *Danforth's Obstetrics and Gynecology*. 10th ed. Lippincott Williams & Wilkins; 2008.