wjpmr, 2022,8(6), 39-42

SJIF Impact Factor: 5.922

WORLD JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.wjpmr.com

Review Article

ISSN 2455-3301

WJPMR

COUVELAIRE UTERUS AND PLACENTAL ABRUPTION COMPLICATED BY INTRAUTERINE FETAL DEATH ABOUT TWO CASES

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Article Received on 30/03/2022 **Article Revised on 20/04/2022** **Article Accepted on 11/05/2022**

ABSTRACT

Couvelaire uterus or uteroplacental apoplexy is a blood infiltration of the uterine myometrium due to the formation of a massive retroplacental hematoma. Couvelaire uterus is one of the most severe complications in placental abruption occurring in 0.4 to 1% of pregnancies. **Materials and methods**: We report two cases of Couvelaire uterus on retroplacental hematoma, complicated by intrauterine fetal death. The first case is a 27-year-old patient, primigravida, referred for a typical clinical state of retroplacental hematoma associated with preeclampsia at 37 weeks of amenorrhea. The second case is a 38-year-old patient, hospitalized for an hemorrhagic shock within a context of retroplacental hematoma at 34 weeks of amenorrhea. Both cases were complicated by intrauterine fetal death and the diagnosis of Couvelaire uterus was made intraoperatively. The treatment was conservative for both cases, with no postoperative complications. **Conclusion:** The findings of Couvelaire uterus are infrequent. The diagnosis is made by visual inspection or biopsy and the recommended management is usually conservative. It can lead to maternal and fetal mortality, so we should be vigilant in monitoring antenatal bleeding and postpartum hemorrhage to reduce fetal and maternal morbidity and mortality.

KEYWORDS: Couvelaire uterus - Uteroplacental apoplexy - Retroplacental hematoma - Uterine myometrium – Stillbirth.

INTRODUCTION

Couvelaire uterus, also known as uteroplacental apoplexy, is a rare nonfatal condition resulting from extravasation of blood into the uterine musculature.[1] First described in the medical literature by Dr. Alexandre Couvelaire, a French obstetrician in 1912, Couvelaire uterus is typically associated with abruptio placentae, the premature separation of the placenta, enabling blood to penetrate the myometrium and parametrium.[2]

We report two cases of Couvelaire uterus, occurring on retroplacental hematomas, complicated by intrauterine fetal death.

MATERIALS AND METHODS

We report two cases of Couvelaire uterus on retroplacental hematoma, complicated by intrauterine fetal death.

CASE REPORT 1

This is a 27-year-old patient, primigravida, referred for a typical clinical state of retroplacental hematoma associated with preeclampsia at 37 weeks of amenorrhea. The patient did not report any specific history. Her pregnancy was not monitored and no prenatal check-up was carried out.

The clinical examination on admission found a TA 18/12, pulse at 120 beats/minute, an abdominal contracture and a vaginal hemorrhage, with positive proteinuria in the urine dipstick. Fetal heartbeat could not be detected by Pinard stethoscope.

The obstetric ultrasound confirmed intrauterine fetal death. Fetal biometry corresponded with a full-term pregnancy and there was no overlapping of fetal skull bones, which was in favor of a recent death. Moreover, it showed an echogenic retroplacental rounded zone evoking retroplacental hematoma.

As the patient was hemodynamically unstable, in a table of severe preeclampsia complicated by retroplacental hematoma; an emergency cesarean section was performed.

Initial blood work revealed normal baseline hemoglobin and platelets of 12.7 g/dL and 235000/mm^3 respectively. Global hemostatic coagulation tests, hepatic and renal assessments were also normal.

The patient underwent Pfannenstiel cesarean section, performed under spinal anesthesia and allowed the extraction of a stillborn female, weighing 3100g. The inspection revealed a placental abruption and with a hematoma occupying almost the entire placenta **(Figure1).** The uterus presented a bluish aspect almost in its totality, corresponding to uteroplacental apoplexy or Couvelaire uterus, but the retraction of the uterine wall was correct **(Figure 2).** After hysterorrhaphy, the patient had persistent moderate bright red bleeding which stopped following infusion of Oxytocin (SYNTOCINON®) and tranexamic acid (EXACYL). The patient had an estimated blood loss of 1000 mL.

The postoperative course was uneventful and the patient was discharged home after 72 hours.

Figure 1: massive hematoma.

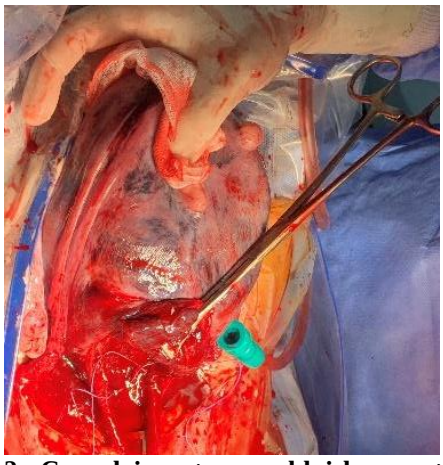

Figure 2: Couvelaire uterus - bluish aspect of the uterus.

CASE REPORT 2

The second case is a 38-year-old patient, hospitalized for an hemorrhagic shock within a context of retroplacental hematoma at 34 weeks of amenorrhea.

The patient had no medical history and had a surgical history of cholecystectomy. Gravida 4, para 3 with 2 living children, the first two pregnancies were vaginal deliveries, the third one was a spontaneous abortion, the fourth and last one was estimated at 34 weeks of amenorrhea according to the date of last menstrual period. Her pregnancy was not monitored and no prenatal check-up was done.

On admission showed, the patient was hemodynamically unstable, TA 18/12, pulse at 120 beats/minute, with an abdominal contracture and a massive vaginal hemorrhage. Fetal heartbeat could not be detected by Pinard stethoscope.

The obstetric ultrasound confirmed intrauterine fetal death. Fetal biometry corresponded to 34 weeks of amenorrhea. Moreover, it showed an echogenic retroplacental rounded zone evoking retroplacental hematoma.

As the patient was hemodynamically unstable, an emergency cesarean section was performed.

Initial blood work revealed hemoglobin 6g/dL, platelets 115000/mm^3, prothrombin time test at 19 %. Hepatic and renal assessments were normal.

The patient underwent Pfannenstiel cesarean section, performed under general anesthesia and allowed the extraction of a stillborn female, weighing 2000g. The inspection revealed a placental abruption with a hematoma occupying the 3/4 of the placenta. The uterus presented a bluish aspect almost in its totality **(Figures 3),** corresponding to uteroplacental apoplexy or Couvelaire uterus, but the retraction of the uterine wall was correct. After hysterorrhaphy the patient had persistent moderate bright red bleeding which stopped following infusion of Oxytocin (SYNTOCINON®) and tranexamic acid (EXACYL). The patient had an estimated blood loss of 1500 mL. She was transfused intraoperatively with 3 red blood cells.

The postoperative course was uneventful, with stabilization of the hemodynamic state and improvement of the biological assessment. The patient was then hospitalized in intensive care, with a good clinical and biological evolution, then discharged home on day 5 post-operative.

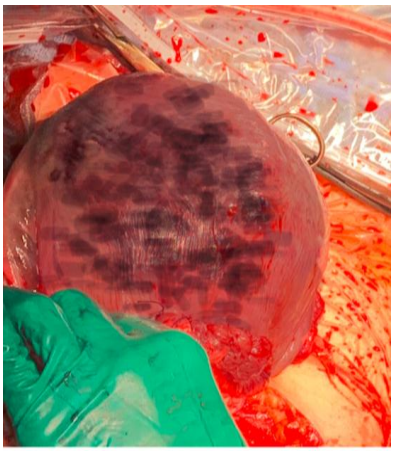

Figure 3: Couvelaire uterus - bluish aspect of the uterus.

DISCUSSION

Definition

Uteroplacental apoplexy or Couvelaire syndrome (or Couvelaire uterus) is a rare medical emergency that complicates the third trimester of pregnancy and is the most severe form of retroplacental hematoma. It is characterized by an extravasation of blood into the musculature and deep into the uterine serosa; in rare cases, the hemorrhage extends into the broad ligaments, ovaries and peritoneal cavity.[1,3,4,5]

Histology

Histologically, blood is found between the muscle, in the perivascular tissue and the subserosa.[6] The decidua gradually dissects due to the hematoma formed; a thin layer is attached to the maternal side of the placenta, and the rest of the decidua remains in contact with the myometrium.[7]

Etiologies - Risk factors

The etiology is unknown, however, Couvelaire uterus has been associated with placenta abruption, placenta previa, amniotic fluid embolism, and preeclampsia.[8]

The deciding factor in the pathophysiology is hemorrhage, in the decidual-placental interface which causes fetal death, maternal hypovolemic shock, disseminated intravascular coagulation and renal failure.[9,10,11]

The main risk factor for this complication is the premature separation of the placental implantation [12]. Other risk factors include: high blood pressure, advanced age, polyhydramnios, multiparity, abdominal trauma, uterine growth retardation, intrauterine infection, and cocaine abuse.[8]

Diagnosis – Incidence

The diagnosis of Couvelaire syndrome can only be made by direct visualization of the uterus during cesarean section or by histopathological biopsy.[3,4,6] For this reason, the incidence of Couvelaire uterus is not well established; and perhaps underreported and underestimated in the literature. Even so, it's estimated to occur in 5-16.5% (0.05-0.1% of pregnancies) of all placental abruptions that occur in 0.4-1% of pregnancies. The diagnosis is based on a bluish and purplish appearance of the uterus.[6,12,13]

Complications

It is a significant cause of fetal morbidity and mortality.[1] In severe massive cases of uteroplacental apoplexy and uteropelvic apoplexy, complications such as uterine gangrene, traumatic uterine rupture, obstetric coagulopathy, uncontrollable refractory obstetric hemorrhage, acute necrotizing pancreatitis, renal insufficiency in multiple organ failure syndrome and maternal death have been described.[5,14,15]

Treatment

The previous treatment for Couvelaire uterus was hysterectomy; which is currently not systematically required because of perioperative maternal morbidity associated with the operation[1,14]

However, current recommendation is for conservative management as Couvelaire uterus resolves spontaneously[6], on condition of a good uterine contractility and stable vital maternal function.

Urgent obstetric cesarean hysterectomy should be reserved only for severe and massive uteroplacental apoplexy forms with progression to uteropelvic apoplexy, with severe and refractory bleeding, as described in the literature.[1,16,17,18]

CONCLUSION

The objective of this clinical case is to demonstrate the existence of this disease and to highlight the seriousness of its complications which endanger the life of the mother and her child. As a healthcare provider, we should be vigilant in monitoring antenatal bleeding and postpartum hemorrhage to reduce fetal and maternal morbidity and mortality.

REFERENCES

1. Habek D, Selthofer R, Kulaš T. Uteroplacental apoplexy (Couvelaire uterus). Wien Klin Wochenschr, 2008; 120: 3–4 88.
2. Couvelaire, A. (1912). *Deux nouvelles observations d'apoplexie utéro-placentaire (hémorragies rétro-placentaires avec infiltration sanguine de la paroi musculaire de l'utérus)*. G. Steinheil, éditeur.
3. Osial P, et al. An Unreported Etiology for Couvelaire Uterus. SEAJCRR, 2013; 2(4): 244-248. Disponible en: http://www. scopemed.org/?jft=83&ft=83-1374049262 Revisado: 4/ Nov/2016.
4. Serrano-Berrones M, Serrano-Berrones J, Centeno-Durán G. Útero de Couvelaire en el puerperio. Ginecol Obstet Mex., 2014; 82: 496-498.
5. Cheang CU, Ho SW, Tee YT et al. Acute necrotizing pancreatitis complicating uteroplacental apoplexy. Taiwan J Obstet Gynecol, 2007; 46: 64–67.
6. Hubbard JL, Hosmer SB. Couvelaire uterus. J Am Osteopath Association. 1997 sep; 97(9). Disponible en: http://jaoa. org/article.aspx?articleid=2099288.
7. Elizalde-Valdés V, Calderón-Maldonado A, y col. Abruptio placentae: morbimortalidad y resultados perinatales. Medicina e Investigación, 2015; 3(2): 109-15.
8. Mahendra, G., Pu, R. S., Pukale, R. S., & Vijayalakshmi, S. Couvelaire uterus. *A case report. IAIM*, 2015; *2*(3): 142-145.
9. Rai S, Singh R. Couvelaire Uterus with Coagulopathy. A Rare Case Report. IJSR, 2012; 3(4): 364-365.

10. Roztocka A, Ropacka-Lesiak M, Breborowicz GH. Preeclamptic pregnancy complicated by huge retroplacental hematoma and Couvelaire uterus. A case report. Archives of Perinatal Medicine, 2014; 20(4): 217-223.
11. Okafor I, Ugwu E. Cesarean Delivery for a Life-threatening Preterm Placental Abruption. Ann Med Health Sci Res., 2015; 5(6). Revisado: 04/Nov/2016
12. Cunningham F, Leveno K, Bloom S. Desprendimiento de placenta. Obstetricia de Williams, 23a ed., 2010; 762-765.
13. Aydin D, Hasanova M, et al. Couvelaire Uterus ve Uterin Atoni Olgusunda B-Lynch. Med Bull Haseki, 2016; 54: 47-9. DOI: 10.4274/haseki.2709.
14. Habek D. Uterine gangrene after uteroplacental apoplexy. Gynaecol Perinatol, 2014; 23: 60–61.
15. Kehila M, Hmid RB. Couvelaire uterus: bad aspect but normal uterine function. Pan Afr Med J., 2016; 25: 11. doi:10.11604/ pamj.2016.25.11.10606 eCollection 2016
16. Uwagbai ON, Wittich AC. A 30-year-old female found to have a Couvelaire uterus with placenta accreta during planned cesarean delivery. Mil Med., 2017.
17. Sylvester HC, Stringer M. Placental abruption leading to hysterectomy. BMJ Case Rep, 2017; 2017: pii bcr2016218349. doi:10.1136/bcr-2016-218349
18. Beischer NA. Traumatic rupture of a Couvelaire uterus. Aust N Z J Surg, 1966; 35: 255–258.