



## Morbidly Adherent Placenta in the Second Trimester in a Twin Pregnancy, Complicated by Massive Hemorrhage and Peritoneo-Vaginal Fistula –The Importance of a Multidisciplinary Approach

Jose Carugno\*, Juliana G Martins and Fausto Andrade

Department of Obstetrics and Gynecology, University of Miami, USA

### Abstract

**Background:** Morbidly adherent placenta has become one of the leading causes of maternal morbidity and mortality with a rising incidence. It consists of an abnormal attachment of the placenta to the uterine wall, with accretas being the most common type. The main risk factors consist of previous cesarean section and presence of placenta previa. Hemorrhage is the most common complication.

**Case Presentation:** 34 years-old patient, G8 P4125 at 13 weeks and 6 days with Class C diabetes and 1 prior c-section, presented with vaginal bleeding. Ultrasound demonstrated a diamniotic/dichorionic pregnancy with placenta previa and accreta for baby A. Despite counseling patient decided to continue pregnancy. At 16 weeks and 1 day patient was readmitted after previable premature rupture of membranes of baby A and decided for termination of pregnancy. Hysterectomy was performed by Gynecology team and became complicated when right uterine artery was ligated due to exposure of placental tissue. Frank hemorrhage ensued and Gynecology Oncology team was called due to complexity of the case. Aortic clamping was performed to control bleeding followed by cystostomy due to adhesions. The estimated blood loss was 30 liters and patient received 33 units of PRBC, 14 units of FFP, 3 units of cryoprecipitate and 4 units of platelets. On post-operative day 1, Urology performed cystostomy repair; patient was discharged with long-term Foley. Outpatient cystogram showed an open-roofed vesicovaginal fistula with intraperitoneal extravasation. Nephrostomy tubes for diversion of urine had no improvement. Exploratory laparotomy, lysis of adhesions and repair of vesicovaginal fistula with creation of omental flap were later performed. Foley catheter was kept for 6 weeks and leakage of urine resolved. Pathology confirmed findings of placenta previa and placenta percreta.

**Conclusion:** Morbidly adherent placenta imposes a very challenging situation when the diagnosis is performed as early as the first and second trimester. The most crucial factor to improve outcomes is to have an adequate prenatal diagnosis and preparedness from a multidisciplinary team lead by a Gynecologic Oncology surgeon to manage complications

**Keywords:** Placenta percreta; Twin-pregnancy; Massive hemorrhage

### Introduction

Morbidly adherent placenta (MAP) has become one of the leading causes of maternal morbidity and mortality and incidence has been rising steadily in the past 20 years, being reported as high as 1/533 pregnancies [1,2]. It consists of a spectrum of conditions that lead to an abnormal attachment of the placenta to the uterine wall, with accretas being the most common type, reported as 75% of all cases [1,3]. The main risk factors consist of previous cesarean section and presence of placenta previa however Bailit determined an incidence of 18% in nulliparous patients from a cohort of 115,502 women. The MFMU network showed that with a history of prior cesarean section and concurrent previa, the risk for placenta accreta was 3%, 11%, 40% and 61% for first, second, third, fourth and fifth or more repeat cesarean deliveries, respectively [1]. Standard ultrasonography performed as soon as 15-20 weeks has a good sensitivity to diagnose abnormal placentation [1]. The features that have the highest sensitivity varies between studies but mostly include: placental lacunae, retroplacental myometrial thickness less than 1mm, loss of hypoechoic retroplacental zone and anomalies of the bladder-myometrium interface [1]. Color Doppler, power Doppler and

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#### \*Correspondence:

Jose Carugno, Department of  
Obstetrics and Gynecology, University  
of Miami, 1321 NW 14th Street Suite  
201, Miami FL 33136;  
E-mail: jac209@med.miami.edu

**Received Date:** 01 Nov 2017

**Accepted Date:** 30 Nov 2017

**Published Date:** 10 Dec 2017

#### Citation:

Carugno J, Martins JG, Andrade F.  
Morbidly Adherent Placenta in the  
Second Trimester in a Twin Pregnancy,  
Complicated by Massive Hemorrhage  
and Peritoneo-Vaginal Fistula –The  
Importance of a Multidisciplinary  
Approach. *Ann Clin Case Rep.* 2017;  
2: 1482.

**ISSN: 2474-1655**

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3D ultrasound associated to 2D technique has a 100% accuracy to diagnose and differentiate the types of abnormal placentations [4,5]. MRI is useful in situations where diagnosis is unclear, if there is suspicion for invasion into adjacent organs or in suspected posterior placenta [1]. Several studies have reported MAP in the first trimester, including cases of C-section scar ectopic pregnancies. Timor-Trisch demonstrated through histological evaluation that both entities have the same origin. Hemorrhage is the most common complication with a potential for massive blood loss, coagulopathy, renal failure and acute respiratory distress. The urinary tract is the most common affected pelvic structure with placenta accreta, reported as high as 29% by Tam Tam et al. [5] in cases managed with peripartum hysterectomy. We report a case diagnosed early in pregnancy that demonstrates such complication.

## Case Presentation

A 34 year-old female, G8 P4-1-2-5 at 13 weeks and 6 days (by 13 weeks ultrasound not consistent with dates), with Class C diabetes on insulin therapy presented to ED complaining of vaginal bleeding. Patient has a medical history of drug use, obesity and bipolar disorder and a surgical history of 1 prior low-transverse cesarean-section on her last pregnancy. Physical exam was unremarkable however transvaginal ultrasound demonstrated a diamniotic/dichorionic pregnancy with a small subchorionic hemorrhage and concern for placenta previa and placenta accreta for baby A. An MRI was performed and showed placenta increta noted anteriorly on fetus A. Patient was admitted to the MFM Service, type and cross was ordered and a multidisciplinary meeting was held. All the findings were discussed with patient and she was offered surgical management (hysterectomy) versus continuation of pregnancy. Patient understood complications associated with pregnancy and declined any intervention. At 16 weeks and 1 day of gestational age patient was readmitted after feeling a gush of clear fluid. Physical exam confirmed diagnosis of previable premature rupture of membranes and ultrasound showed anhydramnios of baby A. Poor prognosis was once again discussed and patient decided for abdominal hysterectomy instead of expectant management. Patient was taken to OR and massive transfusion protocol was activated. Midline vertical laparotomy was performed and bladder adhesions noted due to prior cesarean section; there was no gross evidence of placenta percreta at that point. Hysterectomy was uncomplicated until uterine artery was ligated on the right side that led to myometrium tearing and development of a window with placental tissue visible. Gynecology Oncology team called and paravesical spaces were developed; intentional cystotomy was performed with findings of placental tissue invasion suspected into the muscularis of the bladder. Further progressive bleeding noted and frank hemorrhage ensued, limiting visibility in the pelvis. Aortic clamping was performed by Vascular Surgery and corpus of the uterus excised with significant placental volume removal. Ultimately cervix was excised and vaginal cuff closed. Adjunct hemostasis achieved with Nu-knit, laparotomy pad packing in the pelvis and JP drains. Abdomen was covered with Ioban plastic dressing and plan was for closure in 24 hours to improve edema and homeostasis. The estimated blood loss by the end of the procedure was 30 liters and patient received 33 units of packed red blood cells, 14 units of fresh frozen plasma, 3 units of cryoprecipitate and 4 units

of platelets. On post-operative day #1, the patient was taken back to OR for closure – Urology performed cystostomy, Trauma repaired cecal serosal tear and Gynecology Oncology performed closure and revision of vaginal cuff with oophoropexy. Patient remained on ICU for 2 days and was then transferred to Gynecology floor. Patient met post-operative milestones and was discharged on POD#9 with long-term Foley. Cystogram was performed as an outpatient and showed extravasation of the contrast through the repair site at the dome of the bladder with additional filling of and drainage through the vagina, findings implying an open-roofed vesicovaginal fistula with intraperitoneal extravasation. Patient underwent insertion of bilateral nephrostomy tubes for diversion of urine by Interventional Radiology. She continued to complain of urine leakage and was admitted 1 month later to undergo a cystoscopy, cystogram, bilateral retrograde pyelogram, exploratory laparotomy, extensive lysis of adhesions, repair of vesicovaginal fistula with creation of omental flap to the pelvis. Foley catheter was kept in place for 6 weeks. Upon removal patient was asymptomatic and leakage of urine resolved. Pathology confirmed findings of placenta previa and placenta percreta with invasive chorionic villi and trophoblasts in perivesical soft tissue, presence of microscopic focus of invasive trophoblasts in the external layer of the detrusor muscle.

## Conclusion

The incidence of morbidly adherent placenta has been increasing significantly in the past decades, becoming a common problem in the OBGYN practice. It imposes a very challenging situation for physicians when the diagnosis is performed as early as the first and second trimester since there is no standard of care for the treatment of those cases. Although many successful cases where expectant management was performed with a delivery of healthy baby were reported, maternal morbidity and mortality is as high as it could be when diagnosis is that early. Regardless of the mode of treatment (expectant versus surgical), the most crucial factor to improve outcomes is to have an adequate prenatal diagnosis and preparedness from a multidisciplinary team lead by a Gynecologic Oncology surgeon to manage complications appropriately.

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