What should we do to optimise outcome in twin pregnancy complicated with placenta percreta? A case report

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Abstract

Background: Patients with morbidly adherent placenta (MAP) are under risk of massive bleeding. It readily necessitates very complicated surgery and massive blood transfusion, and even leads to mortality. Cesarean hysterectomy (CH) is the procedure that is acknowledged worldwide, since it helps to minimize complications.

Case presentation: A patient with dichorionic twin pregnancy underwent to cesarean section (CS) due to preliminary diagnosis of placenta percreta at her 35th week of pregnancy. Both of the placentas were left in situ. The patient admitted with signs of infection. Emergency total abdominal hysterectomy was performed 7 weeks after CS. In the course of hysterectomy, 3 units of erythrocyte suspension and 2 units of fresh frozen plasma were transferred, whereas none was required during CS.

Conclusion: Abandoning placenta in situ seems to be a logical alternative to the CH in patients with placenta percreta in order to minimize complications related to massive blood transfusion and surgical technique. However, it appears to increase maternal morbidity due to maternal infection in twin pregnancy.

Keywords: Hemorrhage, Infection, Morbidly adherent placenta, Placenta percreta, Twin pregnancy

Background

Abnormal placental invasion, which is also called as morbidly adherent placenta (MAP), is considered as one of the most severe complications of pregnancy [1]. MAP is a potential life-threatening condition. Patients with MAP are under risk of massive bleeding due to spontaneous or forced separation of the placenta. Therefore, cesarean hysterectomy (CH) is the procedure that is acknowledged worldwide to prevent such complications in patients with diagnosis of MAP. However, Sentilhes et al. have tried an alternative approach and demonstrated that uterine conservation is possible in patients with MAP [1]. In this report, we present a case of MAP in a dichorionic (DC) twin pregnancy who is followed up with the retained placentas. This is the first reported case of a DC twin pregnancy in which both of the placentas were MAPs and were left in situ during cesarean section (CS). We also discuss the advantages and disadvantages of abandoning placenta in situ in such situations.

Case presentation

Patient

Thirty-three years old women with dichorionic diamniotic twin pregnancy admitted to our perinatology clinic at her 28th gestational week with a preliminary diagnosis of complete placenta previa. She had two healthy-living children, one of which was delivered by CS, and one spontaneous abortion, which ended up with curettage. Follow-up of the patient was done weekly until 35th gestational age. Prior to the delivery, we were unable to determine the myometrial thickness at uterovesical contiguity by ultrasonography. Additionally, placental lacunes were prominent, and there were multiple tortuous vessels at uterovesical junction (Fig. 1). Preliminary diagnosis was placenta percreta. Two-step surgery, first remaining the placenta in utero with intention of afterward-hysterotomy and -metroplasty, was planned to

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decrease complications due to surgery and massive blood transfusion.

Procedures

CS was performed through a vertical midline abdominal incision. The incision was extended superiorly and inferiorly from the umbilicus in order to provide a major route to deliver fetuses without damaging the decidual-placental interface. Profuse, engorged, whorl-like patterned uteroplacental vessels were seen at the intraoperative evaluation at both parametra, particularly at the left side, and over the bladder (Fig. 2). The lower uterine segment and corpus uteri were both invaded by the placenta. Therefore, it was a necessity to perform a fundal incision rather than a classical incision to the uterus. Each of the umbilical cords was tied for twice with no. 1 silk sutures after delivery of fetuses. Both of the placentas were abandoned in situ. Myometrium was sutured primarily with no. 1 vicryl sutures in two layers (Fig. 2). Patient was not administered uterotonics during and after the procedure. Cefazolin was continued during post-operative period for 4 days. Intramuscular methotrexate was administered in 50 mg/m² dose to enhance placental involution at the postoperative day 1. Patient was discharged at the postoperative day 4. She was advised for regular visits for once in two weeks. Transabdominal and suprapubic ultrasonographic survey, serum quantitative measures for leukocytosis and C-reactive protein (CRP) were conducted at every visit. At postoperative first week, ultrasonography yielded a 70 × 101 mm residual placenta at the left lower segment of the uterine cavity, and the second placenta which is 57 × 99 mm in dimensions at the right lower segment of the uterine cavity. Patient did not encounter any sort of bleeding. Serum CRP was negative (<0.5 mg/dL), and serum leukocyte counts were normal. Serum beta-hCG value was 324.86 IU/mL. The subsequent calls during follow-up did not yield any symptoms and abnormal test results until post-operative 5th week. Serum CRP was measured 2.8 mg/dL at that time. She was administered oral metronidazole twice a day and 3rd generation cephalosporins once a day for the treatment of the infection. The ultrasonographic measurement yielded shrinkage in dimensions of both placentas. One week later, she admitted to our clinic with severe inguinal and lower abdominal pain, and leukorrhea. There was a discomfort on abdominal palpation. Additionally, tenderness was prominent at inguinal regions, particularly at the left side. Maximum body temperature was 38.7 °C. Serum CRP was measured to increase 29.8 mg/dL. The second operation was planned. The operation was performed through the infraumbilical vertical midline incision. Uterus was pink to grayish in color. Distal part of the uterine corpus and bilateral adnexa were enlarged extremely due to uterine vasculature and mass of the placentas. Vesicouterine pouch was obliterated. Prophylactic ligation of bilateral hypogastric arteries was followed by routine technique for total hysterectomy (Fig. 3). The division of uterine neovasculature at the boundary of lower
uterine segment and bladder and dissection of vesicouter-
line space was accomplished by using electrosurgical vessel
sealing equipment. Our measures yielded a 1100 ml total
blood loss at intraoperative period. Three units of erythro-
cyte suspension and 2 units of fresh frozen plasma were de-
livered to the patient at the perioperative and postoperative
period. She was administered 3rd generation cephalosporin
for 7 days. Postoperative follow-up was uneventful. The pa-
tient was discharged at the postoperative 7th day.

Histopathological findings
Placental sectioning showed extensive hemorrhage in
the villous tissue with extensive inflammatory response
and tissue necrosis at the microscopy.

Conclusions
The incidence of morbidly adherent placenta (MAP) in-
creased from one in 30,000 live births in 1930 to one in
533 live births recently [2]. Causal factor is obvious endometrial defect related to previous surgeries, dilata-
tion and curettages, previous placenta previa, advanced
maternal age, multiparity, Asherman’s syndrome, and
submucous leiomyoma [3]. Primarily, the presence of
placenta previa together with afore mentioned factors
should raise physician’s notice, since antenatal diagnosis
of MAP and planning of the delivery could help to re-
duce morbidity and mortality [4]. Obstetric magnetic
resonance imaging (MRI) is a superior and a feasible
diagnostic method in situations where the exact diagno-
sis could not be reached by sonography [5]. In this case
we did not perform MRI, because ultrasonographic fea-
tures were vigorously suggestive of MAP. The timing for
delivery could reasonably be postponed until 34 to
36 weeks, except for cases with massive vaginal bleeding
and suspicion of extreme overgrowth to the adjacent
organs.

Most of the cases of twin pregnancies with placenta
percreta that were published so far reported uterine rup-
ture at early gestational weeks of pregnancy [6–8]. Our
case is interesting as it did reach to 35th gestational week
despite presence of increased placental burden of a twin
pregnancy. Meanwhile, according to our best knowledge,
there is no other case in the literature that both placen-
tas were morbidly adherent and were remained in situ
during the CS.

Detaching or making incision through adhesive pla-
centa gives rise to massive blood loss, and complicates
further steps of the surgery. Considering the prevention
of hemorrhage, we preferentially performed a fundal ra-
ther than a classical incision to the uterus following a
midline vertical incision to the skin. Therefore, as the
first step of the treatment of MAP, we avoided even
minor detachment of the placenta.

The following step in the optimal treatment usually
addresses CH as the standard of care for MAP [2]. After
the fetus is delivered the uterus is just taken out while
the placenta is still attached. This approach is widely re-
sumed as having the best outcomes. As an alternative
approach, here, we abandoned the placenta in situ in-
stead of performing hysterectomy [3]. Patient’s age, pa-
tient’s desire to preserve her uterus, our belief to
facilitate surgical outcomes and to decrease need for
massive transfusion were the reasons to perform this
type of surgery.

In patients with retained placenta, the concern of
‘what to do with the placenta’ arises. As it is theorized
that placenta brakes down in time and would be pulled
out partially, one can wait for the signs of expulsion of
the placenta. Although the thought is reasonable, the
journey to the summit is very long and troublesome. Re-
garding that theory, there are case series reporting favor-
able outcomes in patients with MAP in singleton
pregnancies [1, 9]. In this case, placenta did not brake
down in a long period of time. Moreover, it caused me-
tritis. Therefore, presence of uterine infection necessi-
tated performing emergency surgery at a time before
planned surgery for excision of the placental tissues to-
gether with metroplasty. Nevertheless, two of our main
concerns were reached. Among them, first was to de-
crease the amount of transferred blood products, and
decrease morbidity related to massive transfusion. The
second was to decrease co-morbidities related to dam-
aging the adjacent organs during emergency hystere-
cotomy. The other and noble concern, which was to give a
chance to preserve and recover the uterus, could not be
reached. In such a circumstance, we advocate to ensure
an exact control over demographics and medical

![Fig. 3 Uterus, removed. Total size of the uterus is 20 cm in length.
Both round ligaments are seen clamped. Scar of the previous
uterine closure is seen between the clamps (white arrows). Border of
the lower uterine segment and uterine corpus (black arrows).
Grayish-yellow placental tissue is seen through the area of uterine
perforation (white squares).](image-url)
condition of the patient, the extent of the invasion of placenta, the total volume or amount of the retained placenta, total uterine size comprising placental volume, and the hematoma in the uterine cavity together with the signs of cervical dilatation and expulsion of placenta.

Ligation (LHA) or obliteration (OHA) of the hypogastric arteries were reported to be ineffective if performed without hysterectomy to control major pelvic hemorrhage in up to 60 % of cases of MAP [4, 10, 11]. As it is known that bilateral LHA is a time consuming and ineffective procedure in patients with MAP, we did not intend to perform prophylactic LHA during CS in this case.

The data regarding the long-term reproductive outcomes after conservative treatment of patients with MAP are limited [1, 6, 12, 13]. One can assume that the physiology of the endometrium has not been corrected, and the theoretical risk of recurrent MAP rises in this population. However, we could improve implantation site within endometrial cavity by repairing the defective zone related to previous CSs owing to a popular theory of implantation of the embryo directly on the endometrial junction [14]. Despite this blurred picture and the increased risk of recurrent MAP, a chance to conceive should be considered in meticulously selected cases such as very young parturients.

In conclusion, leaving the placenta in situ seems to be a logical alternative to CH in patients with MAP. However, the surgeon should be aware of infectious, hemorrhagic, and psychological complications related to retained placenta. In presence of MAP with DC pregnancy, it appears to increase risk of maternal infection, and increase maternal morbidity. Therefore, we advocate the idea that uterine conservation approach should be personalized with meticulous patient selection [15].

Consent
Written informed consent was obtained from the patient for publication of this Case report and any accompanying images. A copy of the written consent is available for review by the Editor of this journal.

Abbreviations
CRP: C-reactive protein; CS: Cesarean section; DC: Dichorionic; LHA: Ligation of the hypogastric arteries; MAP: Morbidly adherent placenta; MRI: Magnetic resonance imaging; OHA: Obliteration of the hypogastric arteries.

Competing interests
We declare that we have no competing interests.

Authors’ contributions
MAA, managed the patient, collected the patient’s data and drafted the manuscript. FOA, participated in the patient management, made the histopathologic evaluation, and made substantial contributions in drafting and revising the manuscript. BCD participated in management of the patient and revised the manuscript. All authors read and approved the final manuscript.

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