Retrospective Analysis of Placental Invasion Anomalies in a University Hospital

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OBJECTIVE: Retrospective analysis of cases applying to the Gynecology and Obstetrics Clinic in Ondokuz Mayıs University Medicine School and diagnosed with placental invasion abnormalities, their common features and evaluation of test results

STUDY DESIGN: Retrospective analyses and treatments were evaluated of cases applying to our clinic between February 2008 and February 2010 with placental invasion abnormalities and that diagnoses were ultrasonographically and pathologically finalized.

RESULT: Four cases out of 6 were diagnosed preoperatively, and invasion of the bladder in one of these had been recognized preoperatively. All the cases had past cesarean section in their histories. Need for blood transfusion was less in cases diagnosed beforehand, and their hospitalization periods were shorter. Placenta previa was present in all the cases. Peripartum histerectomy was performed for all the six cases. Incidence of placental invasion abnormality was found as 1:294. This result may be cause of our university is a references origin in area.

CONCLUSION: Maternal and fetal problems in cases of placenta invasion that are diagnosed previously and intervened after making the required preparations can be reduced.

Key Words: Placenta, Invasion abnormalies, Management

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Introduction

Placenta Invasion Abnormalities (PIA) has increased 10 folds within the last 50 years. Incidence is 1:2500 changing between 1:540 and 1:93000.[1] PIA is divided into three types according to the myometrial invasion of chorionic villi: Villi spread on the superficial layer of the myometrium because of the whole or partial absence of decidua basalis. Placenta acreata is said to constitute %80 of all the invasion abnormalities. Placenta increta (15%) is mentioned when invasion involves the entire myometrium; and percreata (5%) is present when invasion reaches serosa and neighboring organs.[2] Being one of the causes of massive bleeding, increased surgical interventions and blood transfusions make this obstetric problem even more important.[3] Previous caesarean section and uterine operation, intrauterine infections, grand multiparity, and placenta previa are included in the etiology.[4] Among these, particularly together with placenta previa, PIA risk is 14-24% after one caesarean section , increases to 23-48% after two c/s, and becomes as high as 35-50% after three caesarean section.[2]

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Material and Method

Among the patients applying to Ondokuz Mayıs University Medicine School Gynecology and Obstetric Clinic between February 2008 and February 2010 those diagnosed with PIA were evaluated retrospectively. The diagnosis was ensured histopathologically. Patients were analyzed according to their obstetric anamnesis and socio-demographic characteristics. It was also investigated whether or not there were any differences related to intra- and postoperative case management following preoperative diagnosis. Age, number of pregnancies, parity, gestational weeks, and hematocrit at admission and discharge were recorded, and operation time and intra-operative blood replacement were found from the anesthesia records. Intraoperative blood replacement includes the blood replacement during the operation and blood replacement within the first two postoperative hours. Total blood replacement however, includes blood given during the entire hospitalization. In addition, procedures like salpingo-

oophorectomy or iliac artery ligation performed additionally to histerectomy, hospitalization period and complications seen in the postoperative period were also recorded.(Table 1)

Results

While invasion abnormality were found only intraoperatively in two cases, it was possible to see PIA in the obstetric ultrasonographic examinations performed in the other four. In the Doppler examination performed on these, it was seen that the dense abnormal vascular structures between the placenta and myometrium were extending to the bladder. Diagnosis was confirmed histopathologically in the postoperative period.

All of the cases were patients operated according to the indication of past caesarean section. PIA incidence in our clinic was calculated as 1:294 for one year.

Total placenta previa was present in all our cases. Hypogastric artery was ligated in the first place for bleeding control. Intraoperative primary bladder repair was performed for three cases because of the invasion of the bladder by the placenta.

The case with the longest hospitalization was the one that was operated with the pre-diagnosis of total placenta previa and PIA was found intraoperatively. Diagnoses were finalized by histopathologically showing the typical invasion of the myometrium (M) by villi (V). Figure 1)

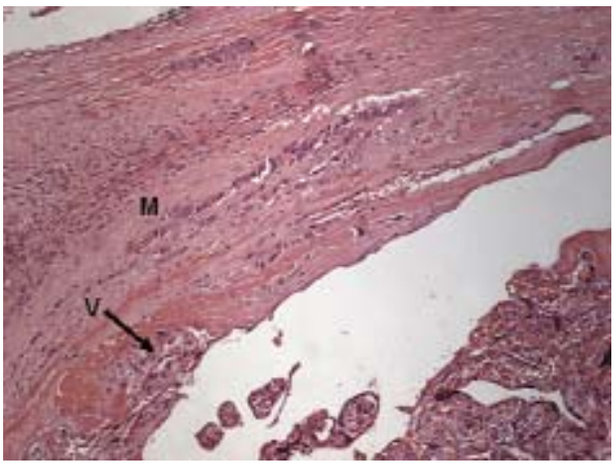

Figure 1

Discussion

PIA has a maternal mortality of about 10% because of events like massive maternal hemorrhage, disseminated intravasküler coagulopathy, acute respiratory distress, acute tubular necrıosis, histerectomy and bladder or ureter.[5] Therefore, in cases under risk, particularly in cases with past caesarean section, methods like ultrasonography, color Doppler sonography and magnetic resonance can be helpful for the diagnosis in the preoperative period. However, evaluation of these examinations must be performed by experienced radiologists.[6]

Table I : Charesteristic of cases

Charecteristic	1	2	3	4	5	6
Age	30	42	32	31	32	37
Previous section number	2	2	1	3	2	3
Preoperatif Diognosis of PIA	YES	NO	YES	NO	YES	YES
Placenta Localisation	Placenta previa totalis (PPT)	Placenta previa totalis (PPT)	Placenta previa totalis(PPT)	Placenta previa totalis (PPT)	Placenta previa totalis (PPT)	Placenta previa totalis (PPT)
Surgical Theraphy	Bilateral hypogastric arter ligation+hysterectomy	Bilateral hypogastric arter ligation+hysterectomy + unilateral salpingooferectomi	Bilateral hypogastric arter ligation+hysterectomy	Bilateral hypogastric arter ligation+hysterectomy	Bilateral hypogastric arter ligation+hysterectomy	Bilateral hypogastric arter ligation+hysterectomy
Blood replacement	–	6 units blood replacement	-	6 units blood replacement	2 units blood replacement	-
Complication	primary bladder repair was performed because of the invasion of the bladder by the placenta.	primary bladder repair was performed because of the invasion of the bladder by the placenta.	-	primary bladder repair was performed because of the invasion of the bladder by the placenta	-	-
Birth Weight	2330 gr	2950 gr	2640 gr	3210 gr	2680	3070
Postop hospitaliation	4 days	12 days	4 days	7 days	4 days	4 days

In our study,four cases were ultrasonographically diagnosed with PIA (cases 1 and 3,5,6), and among these, abnormal placental vascularization extending to the bladder was found with Doppler sonography in case 1.

Placenta localization abnormality was found in all the cases, and total placenta previa covering the os completely was also present. In three cases, in which the placenta was still partially attached, it was seen intraoperatively that placenta invaded the bladder. Bladder invasion by placenta percreata can have high morbidity because of bladder resection.[7] Gross hematuria is a rare finding even with bladder invasion. In a study performed by Al Ojaimi and colleagues,[8] hematuria was observed only in 17 cases out of 58 with placenta percreata and bladder invasion. Gross hematuria was not observed in our cases with bladder invasion.

Abnormal levels of biochemical markers like alpha-fetoprotein(AFP) can be determining for PIA. Zelop and colleagues have reported that high AFP levels in the absence of fetal abnormalities can accompany PIA.[9]

All the cases in our study had past c/s in their histories. Several modifications of uterine incision have been proposed for cases with PIA for caesarean section. Purpose in techniques like classical, high-transverse or fundal uterine incision is to protect the placenta from incision. Closing the uterus in one single layer was supported by many clinical studies in 1990s, since it shortened the operation time. However, there are now studies indicating that the risk of rupture because of placenta previa increata/percreata can increase in uteruses previously closed in one layer.[10]

Since cases are generally in reproductive period in PIA, conservative surgical procedures are rather popular. Embolization or the uterine artery, ligation of hypogastric artery, application of intrauterine balloon, and use of methotrexate are among these.[11] However, in cases with massive bleeding and particularly those with advanced age and parity, subtotal or total histerectomy can be performed according to the initiative of the physician.[12]

Our four cases that were diagnosed with PIA preoperatively were compared to those operated with the diagnoses of repeated painful caesarean section and placenta previa without the diagnosis of PIA. When comparison was made according to blood transfusion, complications and postoperative hospitalization period, it was seen that the need for blood transfusion was next to nothing and hospitalization period was much shorter. Multidisciplinary approach (radiologists, anesthetists, hematologists, and neonatalogists) to PIA can reduce high rates of mortality and morbidity. Especially, when it is considered that the increasing rates of caesarean section in our days will increase also the rate of PIA, estimating the importance of such diagnostic and treatments approaches cannot be difficult.

Bir Üniversite Hastanesinde Plasental İnvazyon Anomalisi Olan Vakaların Retrospektif Analizi

AMAÇ: Ondokuz Mayıs Üniversitesi Tıp Fakültesi Kadın Hastalıkları ve Doğum Kliniğine bir yıllık süre içinde başvuran plasental invazyon anomalisi tespit edilen vakaların retrospektif analizi,ortak özellikleri ve tedavi sonuçlarının değerlendirilmesi.

GEREÇ VE YÖNTEM: 2008 Şubat-2010 şubat tarihleri arasında klniğimize başvuran ultrasonografik ve patalojik olarak tanısı netleştirilen plasental invazyon anomalisi tespit edilen vakaların retrospektif analizi ve tedavileri değerlendirildi.

BULGULAR: 6 vakadan dördünde preoperatif tanı konulup bunlardan birinde mesaneye olan invazyon preoperatif biliniyordu. Vakaların hepsinde geçirilmiş sezaryen öyküsü mevcuttu. Önceden tespit edilen vakalarda kan transfüzyon ihtiyacı daha azdı ve hastanede yatış süresi daha kısaydı. Olguların hepsinde plasenta previa hali mevcuttu.Altı olguya da peripartum histerektomi yapıldı. Plasental invazyon anomali insidansı 1:294 olarak bulundu. Bu sonuç üniversitemizin bölgede referans merkezi olmasından kaynaklanabilir.

SONUÇ: Önceden tanısı konulup hazırlık yapılarak müdahale edilen plasenta invazyon anomalisi olgularında maternal ve fetal sorunlar azaltılabilir.

Anahtar Kelimeler: Plasenta, İnvazyon anomalileri, Yönetim

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