PERINATAL JOURNAL

Original Article

Perinatal Journal 2015;23(3):170–174

Assessment of the cases undergone peripartum hysterectomy in Kahramanmaraş city center in the last two years

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Abstract

Objective: The aim of this target is to determine the incidence, indications and risk factors of peripartum hysterecomty (PH) cases.

Methods: Twenty-five PH cases carried out between June 2013 and June 2015 in the Faculty Hospital of Medicine of Kahramanmaraş Sütçü İmam University and State Hospital were evaluated retrospectively.

Results: Peripartum hysterectomy incidence was found as 1.1 per 1000 deliveries. Total hysterectomy was performed in 22 of the cases due to placenta accreta and subtotal hysterectomy was performed in 3 cases due to atony. All of the placenta accreta cases had at least one previous cesarean section as well as placenta previa. Maternal mortality was identified in 2 (8%) cases and urinary tract injury was identified in 6 (24%) cases. It was found that blood transfusion was required in all cases.

Conclusion: Obstetric hemorrhages are life-threatening clinical conditions. PH is applied as a life-saving procedure. Placental invasion anomaly should be kept in mind if there is previous cesarean section history especially in placenta previa cases, and the operation should be carried out by preparing sufficient blood and blood products in a tertiary center capable of performing PH.

Keywords: Peripartum hysterectomy, cesarean section, placenta accreta.

Özet: Kahramanmaraş il merkezinde son iki yılda yapılan peripartum histerektomi olgularının değerlendirilmesi

Amaç: Peripartum histerektomi (PH) olgularının insidansını, endikasyonlarını ve risk faktörlerini saptamaktır.

Yöntem: Kahramanmaraş Sütçü İmam Üniversitesi Tıp Fakültesi Hastanesi ve Devlet Hastanesinde 2013 Haziran ile 2015 Haziran tarihleri arasında yapılan 25 PH olgusu retrospektif olarak değerlendirildi.

Bulgular: Peripartum histerektomi insidansı 1000 doğumda 1.1 olarak saptandı. Olguların 22'sine plasenta akreta nedeniyle total histerektomi, üçüne ise atoni nedeniyle subtotal histerektomi yapıldı. Plasenta akreta olgularının tamamında plasenta previa ile birlikte en az bir kez geçirilmiş sezaryen öyküsü mevcuttu. Maternal mortalite 2 (%8), üriner trakt hasarı 6 (%24) hastada saptandı. Tüm olgularda kan transfüzyonuna gereksinim duyulduğu saptandı.

Sonuç: Obstetrik hemorajiler hayatı tehdit eden klinik bir durumdur. PH ise hayat kurtarıcı bir prosedür olarak uygulanmaktadır. Özellikle plasenta previa olgularında daha önce geçirilmiş sezaryen öyküsü varsa plasental invazyon anomalisi olabileceği akılda tutulmalı ve PH yapılabilecek tersiyer bir merkezde yeterli kan ve kan ürünleri hazırlığı yapılarak operasyon gerçekleştirilmelidir.

Anahtar sözcükler: Peripartum histerektomi, sezaryen, plasenta akreta.

Introduction

Obstetric hemorrhages are among the most significant reasons of maternal mortality worldwide. Despite the improvements in conservative medical and surgical treatment options, peripartum hysterectomy (PH) is applied as a life-saving surgical procedure.[1] Peripartum hysterectomy was first recommended in the end of 19th century to prevent maternal mortality, and first successful operation was performed in 1876.[2] Emergency peripartum hysterectomy (EPH) is defined as the hysterec-

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Received: July 23, 2015; **Accepted:** November 10, 2015

Please cite this article as: Ercan Ö, Köstü B, Arslan G, Bakacak M, Özer A, Hasan Eroğlu H. Assessment of the cases undergone peripartum hysterectomy in Kahramanmaraş city center in the last two years. Perinatal Journal 2015;23(3):170–174.

Available online at:
www.perinataljournal.com/20150233008
doi:10.2399/prn.15.0233008
QR (Quick Response) Code:

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tomies performed due to the hemorrhage which could not be brought under control by medical precautions within first 24 hours following the delivery.[3] While PH incidence is 0.4 per 1000 deliveries in developed countries such as UK, it is about 5 per 1000 deliveries in underdeveloped countries and regions such as Nigeria and North Africa.[4–6]

Peripartum hysterectomy is performed in persistent obstetric hemorrhages occurring due to lacerations during cesarean section and uterine atony, uterine rupture, placental pathologies and infections.

In the past, the most common reasons for PH were uterine atony and rupture. However, placenta accreta cases increased during last two decades have become the most common reason for PH.[7–9]

In this study, we aimed to determine the incidence, indications, risk factors and complications of PH cases.

Methods

In this study, 25 PH cases which were performed in the Kahramanmaraş Maternity Hospital and Gynecology & Obstetrics Clinic of Faculty of Medicine at Kahramanmaraş Sütçü İmam University between June 2013 and June 2015 were analyzed retrospectively.

Maternal age, gravida, parity, previous cesarean section history and week of gestation were recorded as the demographic data. Delivery type, type and indications of hysterectomy, complications, postoperative maternal outcomes and blood transfusion need were determined as clinical data.

Results

Mean patient age was 33.72±4.53, gravida was 4.71±1.32, parity was 3.44±1.16 and week of gestation was 37.18±2.73, and all patients who underwent hysterectomy were multipara (**Table 1**). For the 2 years as the duration of the study, a total of 25 PH cases were identified among 21,214 deliveries carried out in 2 hospitals within Kahramanmaraş city center. While 2880 of these deliveries were carried out in the University Hospital, 18,334 of them were carried out in Maternity and Pediatric Hospital. Twenty-one of peripartum hysterectomy cases were carried out in the university hospital and the indication of all these cases was placenta accreta. While EPH was performed in 5 (24%) of these cases due to heavy antepartum hemorrhage, hysterectomy was performed in 16 (76%) of them following the planned cesarean section. In 3 out of 4 other hysterectomy cases had atony indication and the remaining one had placental accreta, therefore they underwent EPH in the State Hospital. Peripartum hysterectomy incidence was found as 1.1 per 1000 deliveries in our study.

All patients, who underwent PH due to placenta accreta, had previous cesarean section (PCS) history. Three of these cases had PCS history once, and remaining 19 patients had PCS history for two or more times. While two out of three patients, who underwent hysterectomy due to uterine atony indication, had hysterectomy after cesarean section, one patient had hysterectomy following the vaginal delivery. Hysterectomy type was determined as total in all cases with placenta accreta indication and as subtotal in cases with uterine atony indication (**Table 2**). Preoperative and postoperative hemoglobin values of the patients who undergone PH, hospitalization periods and blood and blood product amounts which were used in the transfusion were shown in the **Table 2**. The complications of PH cases are shown in the **Table 3**.

Discussion

Peripartum hysterectomy is the last life-saving step in obstetric hemorrhages which cannot be brought under control by conservative medical and surgical methods. It has two types which are hysterectomy after cesarean (cesarean hysterectomy) and hysterectomy after vaginal delivery (postpartum hysterectomy). In our study, cesarean hysterectomy was carried out in 24 (96%) patients and postpartum hysterectomy was carried out in 1 (4%) patient. The indication in all cases who underwent cesarean hysterectomy was placenta accreta. It was found out that the rate of cesarean hysterectomy was higher than the results of other publications regarding to EPH in Turkey.[10,11] This high rate can be associated with the rapid increase in placenta accreta cases in recent years.

Emergency hysterectomy rates vary between 0.2 and 2.7 per 1000 deliveries in different countries.[12,13] In our study, we found EPH rate at university hospital as 7.2 per 1000 deliveries (21/2880), which was high. However, this high rate can be associated with the fact that the university hospital is a tertiary referral hospital and cases with high mortality and morbidity rates such

Table 1. Demographic data of the patients.

	Mean±SD	Min.–Max.
Age	33.72±4.53	24–39
Gravida	4.71±1.32	2–9
Parity	3.44±1.16	2–7
Week of gestation	37.18±2.73	28.4–40.5

SD: standard deviation

Table 2. Clinical data of the patients.

Number of delivery	21214
Number of emergency peripartum hysterectomy	25
Placenta accreta	22
Uterine atony	3
Previous cesarean section history	
Placenta accreta	22
One cesarean section history	3
>2 cesarean section history	19
Uterine atony	3
Delivery by cesarean	2
Vaginal delivery	1
Hysterectomy type	
Total	22
Subtotal	3
Hemoglobin (g/dL)*	
Preoperative	8.6±2.0
Postoperative	6.7±1.3
Blood transfusion (unit)*	5.0±2.8
Hospitalization period (day)†	5.8 (4–10)

*Mean±standard deviation
†Mean (Min.–Max.)

Table 3. Complications.

	Patient number	%
Fever	3	12
Bladder injury	6	24
Maternal mortality	2	8
Neonatal mortality	3	12
Transfer to intensive care unit	17	68
Wound site infection	4	16
Blood and blood product transfusion	25	100

as placenta accreta in particular are referred to our hospital from other institutions. Also, considering the university and state hospitals together, EPH rates are found as 1.1 per 1000 deliveries which is consistent with the literature.

As in the world, cesarean section is the most common surgical procedure preferred by obstetricians also in Turkey. In our study, 22 (88%) of the cases had at least one PCS history. In a study performed, it was reported that at least one PCS history increased EPH risk 11 times.[1] It was also reported in various studies that placental invasion anomalies such as placenta accreta increase from 18 up to 110 times as the number of PCS increases.[14,15] Therefore, the incidence rate of placental invasion anomalies varies between 45 and 73%, and the incidence rate of atony varies between 20 and 43% in EPH cases.[13] It was also reported that hysterectomy risk was 16% in placenta previa if previous uterine surgery history is present but the risk decreases 3% if previous uterine surgery history is not present.[8]

In our study, the most common indication in 25 PH cases was placenta accreta (88%), which was consistent with the literature, followed by uterine atony (12%). All of the placenta accreta cases had at least one previous cesarean section before placenta previa. In this study, the reason for the lower rate of EPH cases associated with atony compared to the literature and even the non-presence of atony-associated EPH case in the university hospital may be our liberal use of balloon systems providing uterine tamponade as well as conservative medical and surgical treatments. ACOG recommends medical treatment by uterotonics first for atony-associated postpartum hemorrhages. In case of the failure of medical treatment, they recommend to tie up bilateral uterine artery and uteroovarian arteries and to use compression sutures. It is however reported that, in the presence of placental invasion anomaly such as placenta accreta, hysterectomy which is a life-saving procedure should be performed in no time.[16]

In our study, total hysterectomy was performed in 88% of the cases, and subtotal hysterectomy was performed in 12% of the cases. All of the patients who underwent total hysterectomy had placenta previa and placenta accreta. We looked for markers showing placental invasion anomaly in these cases such as vascularization increase in serosa after the clamping of umbilical cord. When we identified any marker, we closed uterine incision and initiated hysterectomy. Also when no marker was identified and placental separation could not be made, hysterectomy was initiated. In cases who underwent EPH due to atony, subtotal hysterectomy was performed since conservative medical and surgical procedures failed. Although it is controversial

in the literature about which type of hysterectomy should be performed in peripartum hysterectomies, there are publications recommending total hysterectomy to avoid hemorrhage which may occur through the cervical branch of uterine artery in obstetric hemorrhages.[17,18]

Lau et al.[19] reported the rate of urinary tract injuries as 25% in patients who underwent total hysterectomy due to obstetric hemorrhage, but as 12.5% in the patients who underwent subtotal hysterectomy. In our study, the rate of urinary tract injury was 24%, and all of them were in the total hysterectomy group.

Maternal mortality rates are high in obstetric hemorrhages. In the study of Zeteroğlu et al.[20] which evaluated deliveries in the Eastern Anatolia Region of Turkey retrospectively, maternal mortality rate was reported as 16.7% in EPH cases. In the retrospective study of Knight[6] analyzing deliveries in the UK, maternal mortality rate was found as 0.6%. The same rate was reported as 23.8% by the study of Umezurike et al.[4] who analyzed the southeastern region of Nigeria. In our study, maternal mortality was observed in 2 (8%) patients.

Another issue in emergency peripartum hysterectomy cases is the high amount of blood loss which therefore requires the preparation for appropriate and sufficient amount of blood and blood products in predictable patients who have placenta previa as well as previous cesarean section history. In their study analyzing 56 EPH cases, Chawla et al.[21] found mean blood loss as 2000–2500 mL, and the need for mean erythrocyte transfusion as 4-6 units. In our study, we found the need for mean erythrocyte transfusion as 4.8 units. Sherman et al.[22] reported in their study that blood transfusion need in EPH patients was 100%. Similar to this study, we found in our study that all patients needed blood transfusion.

The significant limitations of this study are the retrospective design and low number of cases. Further studies are needed on this subject which have wider series of cases and designed prospectively.

Conclusion

Peripartum hysterectomy is performed as a life-saving procedure in heavy obstetric hemorrhages which are life-threatening conditions for maternal life. The patients with previous cesarean section history together with placenta previa are the most risky patient group for PH. Therefore, the deliveries of such patients should be carried out in tertiary centers which have sufficient amount of blood and blood centers and experienced surgeons.

Conflicts of Interest: No conflicts declared.

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