

Obstetric Hysterectomy – patient's profile in a tertiary obstetrical unit

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Abstract

Objective. Assessment of patients' profile with postpartum hysterectomy. **Material and methods.** A 8 years retrospective study (2001-2008), conducted in a tertiary referral obstetrical unit, "Dr. Ion Cantacuzino" Clinical Hospital, Bucharest, with the analysis of the relationship between patient's history and pregnancy outcome and hysterectomy indication. **Results.** There were 19388 births (15745 vaginal deliveries (79.81%), 3913 cesarean sections (CS) (20.18%)), no maternal death. Hysterectomy was performed in 19 cases (0.98/1000 obstetric cases), 7 nulliparas (36.84%) and 12 multipara (63.15%). Unilateral adnexectomy (UA) was performed in 5 cases. Weekend obstetric hysterectomies (WOH, i.e. performed in weekend) were 12 (63.15%). Indication for hysterectomy was uterine atony (7 cases, 36.84%), placenta accreta (7 cases, 36.84%), uterine rupture (2 cases, 10.52%), vaginal haematoma, vascular fistula after cesarean section and uterine myoma (1 case each, 5.26%). Six cases (31.57%) were considered preventable obstetric hysterectomies (POH): 2 cases of uterine rupture, 2 cases of uterine atony after vaginal delivery, 1 case of vaginal haematoma and 1 case of vascular fistula after cesarean section. POH followed vaginal delivery, respectively CS, in 80%, respectively 14.29%, $p = 0.0072$. POHs represent 100% of WHs, compared with 46.15% during week; $p = 0.0237$. WH was associated with severe intraoperative complications in 41.66% cases, compared with 0% during week, $p = 0.0466$. Fetus was dead (ante- or intrapartum) in 4 patients with severe intraoperative complications (57.14%), compared with one fetal death in patients without severe intraoperative complications (8.33%); $p = 0.0198$. UA was performed only non-monitored patients (5 cases out of 11; 45.45%), compared with 0% in monitored patients ($p = 0.0263$). UA was necessary in 5 cases (71.43%) with dead fetus, compared with 0% when fetus was alive; $p = 0.0006$. Mean haemoglobin loss was 5.52 g/dL in POH, greater than 3.1 g/dL in non-POH; $p = 0.0448$. **Conclusions:** Postpartum hysterectomy is a weekend drama, performed on a multipara, with neglected labour, non-monitored; fetal death and adnexectomy could serve as a retrospective marker of severity. **Keywords:** postpartum hysterectomy, obstetric hysterectomy, uterine atony

Introduction

Obstetric hysterectomy means surgical removal of the uterus in postpartum. First to describe this procedure was Edward Porro, who performed a "en bloc" removal of gravid uterus with a dead fetus in a patient with coagulopathy. Indications for obstetric hysterectomy are abruptio placentae, uterine atony, adherent placenta (accreta, increta, percreta), uterine rupture and infection^(1,2).

Adequate uterine retraction is necessary to prevent hemorrhage. Treatment of postpartum hemorrhage includes correction of uterine atony (uterotonics, uterine bimanual massage), suture of genital tract lesions and treatment of associated coagulopathy⁽³⁾. If not effective, obstetric hysterectomy is probably the only option to ensure hemostasis. In Romania, there is little experience with less invasive methods, like B-Lynch sutures, uterine artery and internal iliac artery ligation, and, in our opinion, these methods should be performed in selected cases, with adequate follow-up during pregnancy.

Obstetric hysterectomy for placenta accreta and uterine atony, secondary to abruptio placentae, cannot be prevented^(4,5) (hysterectomy is the only effec-

tive treatment); in the same time, obstetric hysterectomy for uterine rupture or infectious complications could be prevented by adequate monitoring of the cases (preventable obstetric hysterectomy, POH). Adequate monitoring of labor and postpartum period can prevent hemorrhagic and infectious complications, which can lead obstetric hysterectomy.

Complicated obstetrical cases, referred from lower rank obstetrical units, tend to present a delay of adequate treatment, with progressive deterioration of patient condition, leading to an increased number of preventable obstetric hysterectomy (POH).

Objective

To profile patients who needed obstetric hysterectomy and to evaluate variation of medical care quality during the week.

Material and methods

This retrospective study analyses all obstetric hysterectomies in a 8 years period (2001-2008), performed in "Dr. Ion Cantacuzino" Clinical Hospital, a tertiary obstetrical unit located in Bucharest, Romania.

Statistical correlation between demographic characteristics, obstetrical history, obstetric hysterectomy indications, mother and fetus condition were performed, using t-test, Pearson and Likelihood Ratio test (JMP IN software); statistical significance was defined by $p < 0.05$.

Results

Between 2001-2008, in “Dr. Ion Cantacuzino” Clinical Hospital, Bucharest, there were 19388 births, of which 15475 vaginal (79.81%) and 3913 cesarean sections (20.18%).

Maternal mortality was zero (0%), which is different compared with the literature^(8,9,10,11,12). The rapid shift to surgical intervention and the less reliance on medical treatment can explain this very low maternal mortality.

Obstetric hysterectomy was performed in 19 cases (0.98/1000 births). Fourteen obstetric hysterectomy (73.68%) were performed after cesarean section, and 5 obstetric hysterectomy (26.31%) were performed after vaginal birth. Obstetric hysterectomy was performed in 7 nulliparas (36.84%), of which in 2 cases (28.57%) the fetus died; the mutilation had a maximum impact in these patients.

Twelve obstetric hysterectomies (63.15%) were performed in weekend (i.e. between Friday, 15:00 h and Monday 7:00 h, and in legal holidays); these were called weekend obstetric hysterectomies - WOH).

Obstetric hysterectomies were considered preventable (POH) in 6 cases (31.57%): 2 cases of uterine rupture (one of which being a rupture of cervix, propagated at the level of lower segment), 2 cases of uterine atony after vaginal birth (cases being considered inappropriate treated), one case of vulvovaginal hematoma propagated in right renal fossa and one case of vascular fistula after cesarean section.

Hysterectomy after vaginal deliveries were POH in 80% of cases (4 of 5 cases) followed, compared with



Figure 1. Visual definition of preventable and non-preventable obstetric hysterectomy.
A - non-preventable hysterectomy performed for big uterine fibroma, 8 cm diameter, located on posterior uterine wall. Cesarean section was necessary for transverse lie and the extraction of the 3200gr female fetus was very difficult, requiring a “T” prolongation of uterine incision. After uterine retraction, suture was impossible.
B - POH in a patient, who gave birth alone at home. Fetus was alive, but died shortly after birth, due to improper conditions. Infectious complications occurred in postpartum, causing necrosis of distal phalanx of lower limbs. Surgical amputation of distal phalanx of left 2 and 3 and right 4 and 5 toes was necessary.

Table 1 | Obstetric hysterectomy indications

	Number	Percent
Vulvovaginal hematoma	1	5.26%
Placenta accreta	7	36.84%
Uterine atony	7	36.84%
Uterine myoma	1	5.26%
Uterine rupture	2	10.52%
Vascular fistula post cesarean section	1	5.26%
Total	19	99,9%

14.29% POH after cesarean section (2 of 14 cases); statistically significant ($p = 0.0072$).

All WHO were POH (100%; 6 of 6 cases), compared with only 46.15% POH during week (6 of 13 cases); statistically significant ($p = 0.0237$).

With only one exception, all POH were performed between 20:00h and 6:00h, a vulnerable period for the team on duty, when tiredness is maximum. The exception POH was performed in a Sunday, at 14:30h.

Major intraoperative complications, such as cardiac arrest and intravascular disseminated coagulopathy, occurred in 5 cases. Major intraoperative complications occurred in 50% of POH (3 of 6 cases), more frequently than in non-POH cases (15.38%; 2 of 13 cases); not statistically significant. All 5 cases with major intraoperative complications were performed in weekend, representing 41.66% of WOH (5 of 12 WOH), compared with no major intraoperative complications in obstetric hysterectomy performed during week (0%; 0 of 7 cases); statistically significant ($p = 0.0466$).

The fetus died ante-, intra- or postpartum in 7 cases (36.84%). Fetal death occurred was approximately equally distributed between POH and non-POH cases (50% vs 30.77%, not statistically significant), and between WOH and non-WOH cases (33.33% vs 42.86%, not statistically significant).

Fetal death could serve as a retrospective case severity marker. Maternal mortality being zero, the relationship between major intraoperative complications and fetal death was investigated. Obstetric hysterectomies with fetal death presented major intraoperative complications in 57.14% of cases (4 of 7 cases), more frequently than in obstetric hysterectomies with alive fetus (8.33%; 1 of 12 cases); statistically significant ($p = 0.0198$).

Most of obstetric postpartum hysterectomies were performed in non-monitored patients, with no prena-

tal care (57.89%; 11 of 19 cases). Fetal death occurred exclusively in 63.64% of patients with no prenatal care (7 of 11 cases), compared with no fetal death in monitored patients (0 of 8 patients); statistically significant ($p = 0.0045$).

Adnexectomy was performed in 5 cases; 4 cases of unilateral adnexectomy and one case of bilateral adnexectomy. Adnexectomy was performed in 33.33% of POH and in 23.08% of non-POH (not statistically significant). Equally, adnexectomy was performed in 25% of WOH and in 28.57% of non-WOH (not statistically significant). All adnexectomies were performed in non-monitored (prenatally) cases (45.45%; 5 of 11 cases); no adnexectomy was performed in prenatally monitored cases (0%; 0 of 8 cases); statistically significant ($p = 0.0263$). Adnexectomy was performed in 71.43% of cases with fetal death (5 of 7 cases with fetal death), compared with no adnexectomy when fetus alive (0 of 12 cases); statistically significant ($p = 0.0006$).

Being frequently associated with major intraoperative complications, adnexectomy could serve as a retrospective case severity marker. Obstetric hysterectomies with adnexectomy are associated with major intraoperative complications in 60% of cases (3 of 5 cases), compared with presence of major intraoperative complications in only 14.29% of obstetric hysterectomies without adnexectomy (2 of 14 cases); the difference is border-line statistically significant ($p = 0.0506$).

Hemoglobin loss was 5.52g/dL in POH, greater than 3.1g/dL in non-POH; statistically significant ($p = 0.0448$).

Discussions

Obstetric hysterectomy in postpartum is a weekend drama, in a non-monitored patient, with neglected labor 6. POH is performed during night, a period when patients start to arrive in tertiary units, being

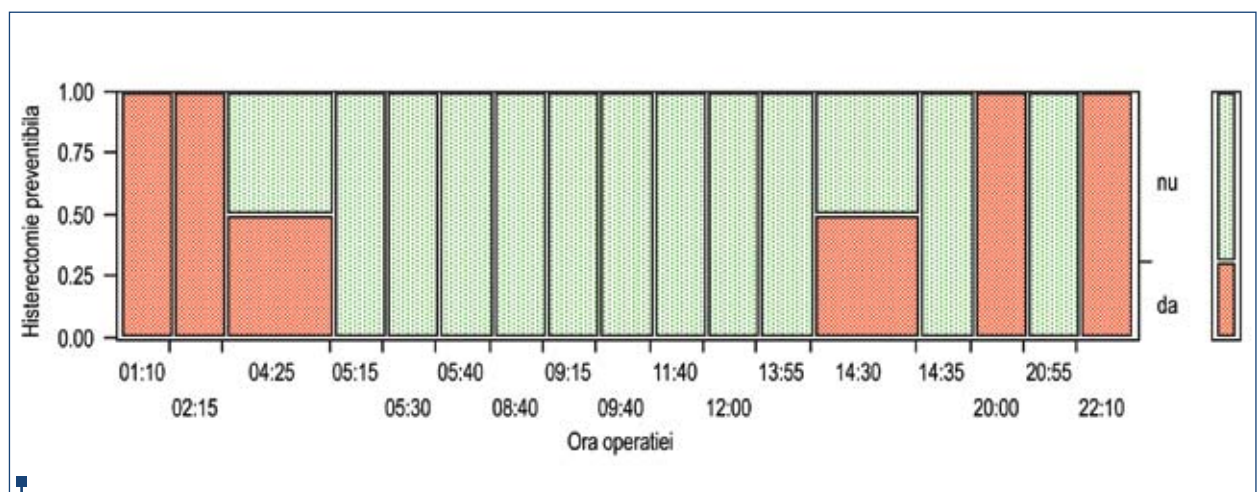


Figure 2. Timetable of obstetric hysterectomy (red - POH, green - non-preventable obstetric hysterectomy)

referred from lower rank obstetrical settings, where they spent an unnecessary long time.

Obstetric hysterectomy is a “near-miss cases” registry inclusion criterion in countries with Confidential Enquiries on Maternal Deaths system. Our study identifies 2 supplementary parameters for case severity retrospective analysis: fetal death and adnexectomy. These entities appear in patient diagnosis at discharge, and could serve as markers of case severity.

Conclusions

Obstetric hysterectomy is a radical treatment, which sacrifices patient obstetrical future. This is, usually, a emergency procedure, performed as an ultimate option to save mother's life. In order to

avoid this mutilating procedure, many haemostatic interventions were imagined: internal iliac artery ligation, B-Lynch sutures, uterine artery ligation, complete devascularization of uterus with simultaneously ligation of uterine arteries and lomboovarian ligaments. Performing such an elective procedure requires a well-trained surgical team and a patient with a stable condition. When patient's condition is unstable and life-threatening, haemostatic obstetrical hysterectomy is the only procedure which can save mother's life. This is indirectly sustained by no maternal death during this study, different compared with the literature^(8,9,10,11,12). The rapid shift to surgical intervention and the less reliance on medical treatment 7 can explain this very low maternal mortality^(8,9,10,11,12). ■

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