

HYSTERECTOMY IN THE PERIPARTUM AND POSTPARTUM PERIODS IN A 17-YEAR-LONG CLINICAL MATERIAL

USUNIĘCIE MACICY W OKRESIE OKOŁOPORODOWYM I W POŁOGU W SIEDEMNASTOLETNIM MATERIALE KLINICZNYM

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SUMMARY

Introduction: Hysterectomy is considered an extensive surgery. Pregnancy, and the periods of delivery and postpartum make the operation even more difficult, as it is forced and complicated by various pathological conditions that develop during that time.

The aim of the research: The purpose of the study was to analyze the frequency of occurrence, the indications, and risk and complication factors associated with the removal of the uterus in pregnancy and during the peripartum and postpartum periods. The study analyzed cases of peripartum hysterectomies recorded in a 17-year-long clinical material from the Department of Gynaecology and Obstetrics, SZOZ, Lipsko, during the years 1985–2001.

Material and methods: The medical records of 15 women who developed complications in pregnancy, during the peripartum and postpartum periods, which were an absolute indication to perform hysterectomy, were subjected to retrospective analysis. The following parameters were analyzed: the patient's age, the number of deliveries, the way the pregnancies ended, the way the present pregnancy ended, any complications, indications for Caesarean section and peripartum hysterectomy, the type of peripartum hysterectomy performed, other associated procedures and complications.

Results: A total of 15 hysterectomies were performed within the period of study, which accounts for 0.10% of all deliveries. The material revealed the following causes for hysterectomy: placental pathologies (46.7%), inflammatory states of internal reproductive organs (20.0%), postpartum uterine atony (13.3%), damage to the reproductive organs (13.3%). Elective PH was performed in one patient (6.7%). The risk factors influencing the occurrence of pathology resulting in the need to perform hysterectomy were, in 10 patients (66.7%), previously undergone Caesarean sections and multiple natural deliveries. Complications associated with hysterectomy which enforced additional operations were noted in two cases (13.3%). Total hysterectomy was performed in 8 patients (53.3%), including hysterectomy with adnexa in 3 women (20.0%). Amputation of the uterine body without adnexa was performed in 7 cases (46.7%). During the post-operative course, no complications were noted after the hysterectomies were performed.

Conclusions: The most common causes for PH were placental pathology associated with severe blood loss, inflammatory states of reproductive organs, and postpartum uterine atony. Amputation of the uterine body proved to be enough in 46.7% cases, when PH was needed. Patients after Caesarean sections and multiple deliveries constituted 66.7% of the examined group who underwent PH.

Key words: peripartum hysterectomy, peripartum haemorrhage, delivery.

STRESZCZENIE

Wstęp: Usunięcie macicy zaliczane jest do rozległych zabiegów operacyjnych. Ciąża, okres porodu i połogu sprawiają, że wykonywana wtedy operacja jest o wiele trudniejsza, gdyż wymuszana i wikłana jest przez stany patologiczne towarzyszące temu okresowi życia kobiety.

Cel pracy: Celem pracy jest analiza częstości występowania, wskazań oraz czynników ryzyka i powikłań związanych z zabiegiem usunięcia macicy w ciąży oraz w okresie okołoporodowym i w połogu. Badaniami objęto przypadki okołoporodowego usunięcia macicy (oum) w siedemnastoletnim materiale Oddziału Ginekologiczno-Położniczego Szpitala ZOZ w Lipsku w latach 1985–2001.

Material i metody: Analizie retrospektywnej poddano dokumentację medyczną 15 kobiet, u których stwierdzono powikłania w ciąży, w okresie okołoporodowym i w połogu zmuszające do wykonania zabiegu oum. W analizie uwzględniono: wiek pacjentki, liczę przebytych porodów i sposób ich zakończenia, sposób zakończenia aktualnej ciąży i powikłania, wskazania do cięcia cesarskiego (cc) i oum, rodzaj wykonanej okołoporodowej histerektomii, zabiegi towarzyszące i powikłania.

Wyniki: W analizowanym okresie wykonano łącznie 15 operacji usunięcia macicy, co stanowi 0,10% wszystkich porodów. Przyczyną oum w naszym materiale były powikłania związane z patologią łożyska (46,7%), stany zapalne wewnętrznych narządów płciowych

(20,0%), poporodowa atonia macicy (13,3%), urazy narządów płciowych (13,3%). Elektywne oum wykonano u jednej (6,7%) pacjentki. Czynniki ryzyka wpływającymi na występowanie patologii skutkującej koniecznością wykonania oum były – stwierdzone w 10 (66,7%) przypadkach – przebyte wcześniej cięcia cesarskie i wielokrotne porody drogami natury. Powikłania towarzyszące zabiegowi oum wymuszające wykonanie dodatkowych operacji odnotowano w dwóch (13,3%) przypadkach. Całkowite usunięcie macicy wykonano u 8 (53,3%) pacjentek, w tym z przydatkami u 3 (20,0%). Amputację trzonu macicy bez przydatków wykonano w siedmiu przypadkach (46,7%). W przebiegu pooperacyjnym – po wykonanych oum – powikłań nie odnotowano.

Wnioski: Najczęstszymi przyczynami oum była patologia łożyska wiążąca się z dużą utratą krwi, stany zapalne wewnętrznych narządów płciowych i poporodowa atonia macicy. Amputacja trzonu macicy okazała się w 46,7% zabiegiem wystarczającym w przypadku konieczności wykonania zabiegu oum. Pacjentki po cięciach cesarskich i wielokrotnych porodach stanowiły 66,7% badanej grupy, u których wykonano zabieg oum.

Słowa kluczowe: okołoporodowe usunięcie macicy, krwotok okołoporodowy, poród.

INTRODUCTION

Peripartum Hysterectomy (PH), from the time it was first performed in 1868 by Horatio Storer from Boston, is still perceived as a surgery saving the life of a woman in the peripartum and postpartum periods [1]. The fact that peripartum hysterectomy is considered one of the most difficult obstetric surgeries due to the surgical technique and the fact that a decision to perform it is usually made under dramatic circumstances, in the face of the greatest obstetric complications where the life of the patient is directly threatened, constitute the level of difficulty with which a doctor comes to a decision about its performance [2–4]. Depriving a woman of her fertility is an additional burden, and at the same time there is the awareness that any delay in making the decision of performing PH at the right time may lead to complications, including death.

THE AIM OF THE RESEARCH

- An analysis of the frequency of PH and indications for PH, and complications connected with performing this surgical operation.
- Identification of the risk factors influencing the necessity to perform PH and an analysis of complications observed during the surgery.
- A comparison of results obtained during a 17-year-long period of operation of the Department of Gynaecology and Obstetrics at the ZOZ (Health Care Centre) Hospital in Lipsko (during the years 1985–2001) with results of other centres presented in literature.

MATERIAL AND METHODS

Medical records of 15 patients from the 17-year-long period, whose labour or puerperium resulted in

removal of the uterus, was subjected to retrospective analysis.

The following was considered in the analysis of the PH documentation:

- the age of the patient and the number and the manner in which previous deliveries ended;
- the manner in which the present pregnancy ended and any complications;
- indications for Caesarean section and PH;
- the type of peripartum hysterectomy performed, accompanying surgical operations and any complications.

RESULTS

During the 17-year-long period, 14 751 births were recorded at the Department; 12 520 (84.9%) by means of nature and 2231 (15.1%) using Caesarean section (C-section).

During the analysed period, peripartum hysterectomy (PH) was performed on 15 women who were pregnant, giving birth or have just given birth.

In 10 (66.7%) of them, hysterectomy was performed during the peripartum period; in 2 (13.3%) during early postpartum; and 3 (20%) were operated on the 18th, 28th and 39th day of postpartum.

Complete removal of the uterus was performed in 8 (53.3%) of the patients, including 3 (20.0%) with additional removal of the adnexa. Amputation of the uterine body without the adnexa was performed in 7 (46.7%) cases.

Elective hysterectomy at the time of Caesarean section was performed in only one (6.7%) case; the remaining fourteen (93.3%) surgical operations were performed based on emergency indications during Caesarean section, after natural birth or during postpartum.

During Caesarean section and after its performance (during postpartum), the uterus was removed in 9 (60.0%) of the examined patients. This was seven times during Caesarean section and during 24 hours

after birth; and twice during postpartum – on the 18th and 28th day after Caesarean section – when the PH surgical operation was performed due to an inflammation of the internal reproductive organs, connected with postpartum infection.

Among the 9 (60%) patients on whom PH was performed after Caesarean section, 7 (46.7%) had previously had C-section; three of them once, two twice, and one thrice.

Among the examined women, there was one (6.7%) nullipara and fourteen (93.3%) were multiparous. The patients being discussed were aged 17 to 42 (the average age was 30.9). The gestational age at labour was 32 to 42 weeks (the average gestational age was 38.5 weeks).

The rate of incidence for peripartum hysterectomy performance among our patients was 0.10%, that is 1.0 for every 1000 births. This was 0.048% (6 cases) after natural birth, and after births which ended with Caesarean section this was 0.403% (9 cases).

Five patients after four and more labours constituted 33.3% of the examined group. Two of them had given birth with C-section; four times and once.

In 9 (60%) of the patients the indication for PH during Caesarean section and after C-section (in postpartum) was as follows: in six cases a pathology of the placenta (placement and implantation):

- placenta previa – 3 cases;
- premature separation of the placenta – 2 cases;
- retained placenta – 1 case.

And in three cases this was as follows:

- postpartum metritis with haemorrhage – on the 18th day after a second labour ended with C-section – due to the threat of a foetal intrauterine asphyxia;
- necrosis of the lower part of the uterus with haemorrhage; surgery on the 28th day after a second labour (ended for the second time with C-section);
- a Caesarean section and elective hysterectomy – in patient P. I. aged 31 in the 42nd week of the second pregnancy, after a sparing surgery caused by *cystadenocarcinoma papillare mucinosum ovarii sin GI* [5].

Among 6 (40%) of the patients, after giving natural birth, the indications for PH were as follows:

- uterine atony (2 cases),
- a Vesico-Uterine Fistula (1 case),
- a postpartum infection with peritonitis and septic shock (1 case),
- a retained placenta (1 case),
- uterine rupture (outer surface) (1 case) [6].

Indications connected with pathology of placenta placement and implantation, 7 cases (46.7%), were the most frequent indications in patients who had PH.

The group of indications for removal of the uterus second in terms of frequency was that of inflammatory states of the internal reproductive organs. Such complications were stated in 3 (20%) of the patients; during postpartum (on the 18th, 28th and 38th day).

Some of the authors, in literature analysing PH during postpartum, included only cases within 24 hours after birth in the classification [4,7–9]. Others, accordingly, within 14 days (early postpartum), or 21 days after birth, or the first 6 weeks after birth [8–10].

Inflammatory complications of the internal reproductive organs, resulting in a need to perform PH, were noted in two patients after C-section and one after four natural births.

1. Patient K. M., aged 24. Hospitalised on 02.02.1989 – on the 18th day after a second labour ended in Caesarean section – due to heavy bleeding from the uterus. A few hours of conservative treatment proved to be ineffective. An emergency relaparotomy was performed and the body of the uterus amputated without the adnexa.

The result of the histopathological examination was as follows: Body of the uterus (examinations no.: 333770–72) – *Endometritis post partum. Endomyometritis post partum.*

2. Patient W. B., aged 40 – on the 38th day after a fourth labour (natural) – hospitalised on 01.02.1993 with symptoms of peritonitis and septic shock at the General Surgery Ward. Emergency surgery. Presence of around 100 ml of brown-coloured liquid in the peritoneum and symptoms of peritonitis. Haemorrhagic necrosis of the epiploic appendix in the sigmoid, and symptoms of inflammation of the fallopian tubes and the appendix were also stated. These afflictions were accompanied by pelvic thrombosis, and haemorrhages to the ovaries, the parametrium and the vesico-uterine space. Hysterectomy with adnexa and accompanying surgical operations were performed by a team of Gynaecology doctors and Surgeons. Histopathological examinations (examinations no.: 411673–80) confirmed the clinical diagnosis.

3. Patient M. E., aged 34, hospitalised on 21.07.1994, on the 28th day after a second labour ended in Caesarean section. No improvement was achieved within a 6-day-long conservative treatment. During relaparotomy, necrosis of the lower section area was stated, in the location of the Caesarean section wound.

Amputation of the body of the uterus without adnexa was performed.

The result of the histopathological examination was as follows: Body of the uterus and a fragment of the lower section (examinations no.: 442630–32) – *Endometritis post partum. Endomyometritis post partum.*

The third in turn, in 2 (13.3%) cases, indication for PH performance (as an independent indication) was postpartum uterine atony.

Indications for PH in two (13.3%) of the patients were reproductive organ traumas caused during natural birth.

Elective PH at the time of Caesarean section was performed in one (6.7%) patient.

In four patients PH was performed during relaparotomy. On the day of the Caesarean section, amputation of the body of the uterus was performed in a patient after a third Caesarean section due to uterine haemorrhage. Whereas in the nullipara after a natural birth and an attempt at sparing treatment (uterine artery ligation), relaparotomy and a complete removal of the uterus were performed after 24 hours from birth, due to postpartum uterine atony. An amputation of the body of the uterus was performed in two patients due to an inflammatory state of the uterine muscle – on the 18th and 28th day after labour which ended with Caesarean section.

The operations of bladder damage caused during Caesarean section (performed on the patient for the fourth time) and the operations of the Vesico-Uterine Fistula after natural birth, diagnosed in postpartum, were performed during the operations of uterine removal.

The complications noted during the PH surgical operation are as follows: hypovolemic shock (6 cases – 40.0%), septic shock (1 case – 6.7%), uterine bladder damage (1 case – 6.7%).

Antibiotics were used as a preventive measure during peripartum and postpartum in all patients who underwent surgery.

Blood transfusion was necessary in all of the operated patients (from 600 ml to 4950 ml).

Intrauterine foetal death before the patient's arrival at the hospital was noted in 3 cases. In one case, the reason was a placenta previa and retained in the lower section of the uterine muscle, and twice this was a prematurely separated placenta.

The risk factors (in peripartum and postpartum) which influenced the necessity for PH were previous Caesarean sections and multiple labours.

Among the 9 (60%) patients on whom PH was performed after Caesarean section, 7 (46.7%) had previously had C-section, including three of them once, two twice, and one thrice.

Patients (5) after four and more labours constituted 33.3% of the examined group.

DISCUSSION

Hysterectomy in the peripartum and postpartum periods is most often performed due to emergency

indications. Performing this kind of operation is justified in a situation where there are no effects of using various forms of conservative treatment or if non-invasive methods, as well as sparing measures during laparotomy, do not stop the haemorrhage [11].

The rate of incidence for PH at the Department in the analysed 17-year-long period amounted to 0.10%, that is 1.0 for every 1000 births. It placed in the range presented in national literature (0.14–0.16%) [5, 7, 11] and international literature (0.1–0.16%) [12–15]. Whereas it was higher than the one presented in literature from recent years: 0.36 [16] and 0.85 and 0.92 for every 1000 births [10, 17]. This is most likely connected with the introduction of new uterotonics (Pabal) and prostaglandins (Misoprostol) to uterine haemorrhage treatment, which increase the effectiveness of conservative treatment in cases at risk of PH.

In the examined group, amputation of the body of the uterus without adnexa was performed in 7 cases. Amputation of the body of the uterus proved in 46.7% a sufficient, effective and complication-free surgery. The benefits of this kind of PH, such as a lower loss of blood and therefore a lesser need for blood transfusion, a decreased risk of damage to surrounding organs and surgery complications, are stressed in literature [18]. Some of the authors, however, did not perform it at all [8]. Others respectively: in 13.9% and 6.7% of the cases [7, 16].

The most common cause of uterus removal was complications connected with placenta location and implantation pathology – 7 (46.7%) cases. A similar percentage was noted by Dutch authors (50.0%) [19]. However, this is higher than that presented by other authors (11.0–39.0%) [1, 4, 12, 20, 21]. Whereas, Awan et al. and Christopoulos et al. noted a greater contribution of this type of placenta pathology to the indication for performing PH – 74.2% and 73.3% respectively [10, 17].

Placenta placement and implantation pathology may be related in this group of patients to a high percentage of previously undergone Caesarean sections (4 patients – 57.1%) and multiple natural births (3 patients – 42.9%).

It was noted in literature that the risk of peripartum hysterectomy is 11-fold higher in patients who have previously undergone Caesarean section [16].

Multiple births (4 or more) were also a risk factor in the groups of patients where performing PH was necessary [22, 23].

Among the patients of this group (a primary pathology cause for PH), a slight uterine rupture was also stated in four cases (1 case in a C-section scar and 3 cases of rupture of the outer surface of the uterus body).

The group of indications for removal of the uterus second in terms of frequency was that of inflamma-

tory states of the internal reproductive organs. Such complications were stated in 3 (20.0%) of the patients; during postpartum (on the 18th, 28th and 38th day of postpartum).

The percentage of uterus removal, caused by inflammatory states of the internal reproductive organs, placed within the ranges given by other authors [2, 11, 14]. These complications were present in patients whose labour ended with Caesarean section and who gave multiple natural births.

Some of the authors of the publications did not note any septic indications among the causes of peripartum and postpartum hysterectomy [4, 7, 9].

The third in turn, in 2 (13.3%) cases, indication for PH performance (as an independent indication) was postpartum uterine atony. Rabenda-Łacka et al. and Awan et al. noted a similar percentage (13.9% and 12.9% respectively) of this pathology being a cause for PH [7, 10]. It is significantly lower than the one presented by other authors – from 37.3% to 56.4% [4, 9, 11, 17].

Indications for PH in two (13.4%) of the patients were reproductive organ traumas caused during natural birth.

Patient M. K., aged 29, after a fourth breech birth, on 12.07.1985 – symptoms of bleeding into the peritoneal cavity and the beginning of a hypovolemic shock were stated in the fourth stage of labour. An outer surface uterine rupture occurred along the left side of the uterus. The operation of removing the uterus without adnexa was performed in a standard manner [6].

In patient T. T., aged 31, after a third natural birth and two previously undergone Caesarean sections, the presence of a Vesico-Uterine Fistula was stated on the fifth day of postpartum (31.07.1988). Amputation of the body of the uterus without adnexa and surgeries of the Fistula were performed on 31.07.1988. The uterine body pathology (*Leiomyomata intramuralia partim cellularia partim cum necrosi haemorrhagica*) stated, in this case, in the histopathological examination could have also had an influence on the occurrence of this kind of complication.

The Vesico-Uterine Fistula after natural birth and damage to the urinary bladder during Caesarean section together amount to 13.3% of the complications noted during peripartum hysterectomy surgeries. These complications determined the need to perform additional surgeries.

Damage to the urinary tract was noted in literature in 4.07% and 18.8% of the cases [4, 11]. Whereas damage to the urinary bladder itself in 8.8% [23].

Peripartum hysterectomy in one patient (6.7%) who had undergone sparing surgical treatment earlier due to ovarian carcinoma is a rare elective indication [5].

A low percentage, as in our material (6.7%), of uterine rupture as a primary cause for peripartum hysterectomy was also noted by Poreba et al. and Bachanek et al.; this was respectively 2.6% and 11.1% [4, 9]. High percentages (23–49%) of uterine ruptures were observed by authors in developing countries [12, 20, 24]. In those countries, uterine rupture was the most common indication for PH [22].

Patients after Caesarean sections and multiple births, also natural ones, (10 cases) constituted 66.7% of the examined group where PH surgery was performed.

Clinical symptoms of hypovolemic shock of various magnitude were noted in 6 (40%) patients who underwent peripartum hysterectomy. This type of complication was noted by Rabenda-Łacka et al. in 5.6% of cases [7]. In 2 (13.3%) patients, symptoms of Couvelaire uterus were stated.

Sufficient supply and the possibility of quickly obtaining blood, also in an emergency, from honorary donors, was one of the principal emergency rescue procedures enabling in turn a safe performance of the surgical operation.

In literature, the necessity of blood transfusion in patients who have undergone PH is observed to concern about 80–90% of the cases [7, 14, 25]. Some of the authors noted the fact of blood transfusion in all of the patients from this group [4, 9, 10, 22].

A material similar to ours, in terms of the time of observation and the number of PH cases, was presented by Christopoulos et al. These authors noted, among the same number of cases, placenta pathologies as being the first (73.3%) among the causes for performing PH surgery [17].

In the post-operative period after PH, there was no need for relaparotomy. There were also no cases noted of such complications as damage to the urinary tract, intestinal obstruction, integument abscess or peritonitis mentioned in literature [9].

CONCLUSIONS

1. The most common causes for hysterectomy performed during peripartum and postpartum were complications connected with placenta placement and implantation pathology (46.7%) and inflammatory states of internal reproductive organs (20.0%).
2. Amputation of the body of the uterus proved to be a sufficient surgery in 46.7% of the cases where PH surgery was necessary.
3. Patients after Caesarean sections and multiple births (10 cases) constituted 66.7% of the examined group where PH surgery was performed.

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