Original Article

Obstetrical Hysterectomy In Scarred Uterus Versus Unscarred Uterus At Tertiary Care Hospital

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Abstract

Background: Obstetrical hysterectomy is a commonly observed in both scarred and unscarred uterus.

Objectives: To compare complications of obstetrical hysterectomies in scarred versus unscarred uterus.

Methodology: A retrospective observational study using non-probability convenient sampling was done at Gyne and Obstetric unit of Abbasi Shaheed Hospital Karachi from January 2019 to December 2021. Pregnant females undergoing obstetrical hysterectomy due to complications associated with previous cesarean scar were included while pregnant females with life threatening obstetrical emergency surgery managed successfully and where uterus was conserved through conservative or surgical methods were excluded. SPSS v23.0 was used for data analysis with chi-square test applied keeping $p<0.05$ as statistically significant.

Results: Mean age was 31 ± 4.74 years, gestational age 35.24 ± 3.88 weeks, parity 4.93 ± 2.58,. Previous rupture of scar was reported in 20 (17.24 %), previous placenta accrete in 44 (37.93 %), uterine rupture in 18 (15.51 %), PPH atony in 16 (13.79 %), secondary PPH in 12 (10.34 %), obstructed labor and PPH D/C in 04 (3.45 %). 64 (55.2 %) had scarred uterus while 56 (44.8 %) unscarred uterus. Among scarred uterus, 44 had placenta accrete, 04 broad ligament hematoma and scar ectopic and 12 extension of uterine incision scar rupture. 16 females in unscarred uterus groups had uterine rupture during labor while 24 had PPH and 12 endometritis and secondary PPH ($p<0.001$)

Conclusion: Higher frequencies of scarred uterus reported with placenta accrete being most commonly observed complication. In unscarred uterus females, PPH was reported to be most frequent complication.

Keywords: Obstetrical Hysterectomy, Scarred Uterus, Unscarred Uterus

INTRODUCTION

One of the most commonly observed major elective surgery performed after cesarean deliveries is hysterectomy (1). Amongst all ages, hysterectomy rates vary in-between 6.1-8.6 per thousand female's world over (2). Only in the west, over 90,000 hysterectomies are performed annually (3). The potentially major complications post-operatively are

linked with gynecological surgeries, are more commonly reported than other surgical procedures, representing complicated bodily response to stress that is imposed due to surgery (4).

Additionally, there are complications specifically associated with the operation itself (5). Owing to substantial advancements in anesthetics and surgical techniques, improvement in post-operative outcomes have been observed and overall surgical procedures have become more safer, and so they can be carried out even under unsuitable conditions (6). Majority of intra operative injury amid obstetrical hysterectomies could be traced to undue haste, poor lightning, anatomical variations, unsatisfactory assistance or involvement of injured organs in diseased processes (7).

Uterine injury is one major and serious post-hysterectomy complication due to subsequent impairment of the renal system (8). Such injuries are although uncommon, occurring in about 1-1.5 % of all obstetrical surgeries, yet they remain a serious one (9). Due to close anatomical approximation of uterus, bladder and upper vagina, bladder's the segment of lower urinary tract which is the most vulnerable towards injuries, incidence being reported at about 1-2 % but a serious one (10).

Scarring of uterus is defined as any injury or any previous surgery to myometrium may lead to damaging of its lining and cause formation of adhesions (scar tissue) in-between inner walls of uterus where the wall stick or adhere to each other or placenta in an abnormal fashion (11).

In obstetrical hysterectomies, small intestine may also be sometimes injured, mostly occurring in posterior colpoperineorraphy and in most cases, remain confined to rectum (12). Its occurrence is reported to be around 0.3 % of all abdominal and vaginal hysterectomies (13). Other complications associated with obstetrical hysterectomies may show variations due to blood transfusions, ileus, febrile episodes, operative site cellulitis or DIC to infected vaginal hematoma or abscess, osteomyelitis pubis, wound infection and / or septic pelvic thrombophlebitis (14).

In accordance with a study, indications for obstetrical hysterectomy included uterine atony in about 44 % of patients while placenta accreta or previa in 34 % of cases. Recently, abnormal placentation is becoming more and more common ly reported indication because of greater frequencies of pregnant females having previous cesarean section deliveries (15).

The objective of this study was to compare the complications of obstetrical hysterectomies in scarred versus unscarred uterus.

METHODOLOGY

This retrospective observational study using non-probability convenient sampling was carried out at the Gyne and Obstetric unit of Abbasi Shaheed Hospital Karachi from January 2019 to December 2021. Hospital records of last three years were used for collecting of obstetrical hysterectomies data during the study period. All pregnant females undergoing obstetrical hysterectomy due to complications associated with previous cesarean scare such as placenta accrete or complications during cesareans section like broad ligament hematoma, lateral extension of angle of uterine incision and / or rupture of uterus, post-partum hemorrhage or endometritis were included in the study.

All pregnant females with life threatening obstetrical emergency surgery that were managed successfully and where uterus was conserved through conservative or surgical methods such as B lynch suture for post-partum hemorrhage, repair of rupture uterus, hemostatic suture for previa and / or small broad ligament hematoma which were conservatively managed were excluded from the study.

DATA COLLECTION PROCEDURE

After ethical approval from the Ethical Review Committee of Abbasi Shaheed Hospital Karachi, data collection started according to inclusion and exclusion criteria. For collecting data, a self-designed proforma was used in which all

demographic details of the included females was recorded. Details included maternal age, gestational age, parity, indications for hysterectomy, booking status, admission status such as from ward / ICU and blood transfusions if any.

DATA ANALYSIS

Data was analyzed using SPSS v23.0. For reporting of qualitative variables, frequency and percentages were used while for quantitative variables, mean and standard deviations were recorded and reported. The data was divided into two groups on the basis of scarred and unscarred uterus. To test for association in- between the outcomes of hysterectomy in scarred and unscarred uterus, chi square test was applied keeping p-value of <0.05 as statistically significant.

RESULTS

From the total of 116 females included in the study, the mean age was 31 ± 4.74 years, mean gestational age was 35.24 ± 3.88 weeks, mean parity 4.93 ± 2.58, mean hospital stay was 5.17 ± 3.23 days, mean stay in ICU was 2.38 ± 1.49 days and mean blood transfusion were 3.55 ± 1.97 pints [Table I].

With regards to the indications for obstetrical hysterectomy, previous rupture of scar was reported in 20 (17.24 %) cases, previous placenta accrete in 44 (37.93 %) of cases, uterine rupture in 18 (15.51 %) of cases, PPH atony in 16 (13.79 %) of cases, secondary PPH in 12 (10.34 %) of cases, obstructed labor and PPH D/C in 04 (3.45 %) of cases respectively [Figure I].

From 116 females included, 64 (55.2 %) were found to have scarred uterus while 56 (44.8 %) were reported to have unscarred uterus. Among the scarred uterus females, 44 were found to have placenta accrete, 04 broad ligament hematoma and scar ectopic respectively and 12 extension of uterine incision scar rupture. 16 females in the unscarred uterus groups were reported to have uterine rupture during labor while 24 were found to have postpartum hemorrhage and 12 endometritis and secondary PPH. A significant difference of p<0.001 was observed between the two groups [Table II].

Table I: Baseline demographics of participants included in the study (n=116)

Variables	Mean	Standard Deviation
Mean Maternal Age (years)	31	4.74
Mean Gestational Age (weeks)	35.24	3.88
Mean Parity	4.93	2.58
Mean Hospital Stay (days)	5.17	3.23
Mean ICU Stay (days)	2.38	1.49
Mean Blood Transfusions	3.55	1.97

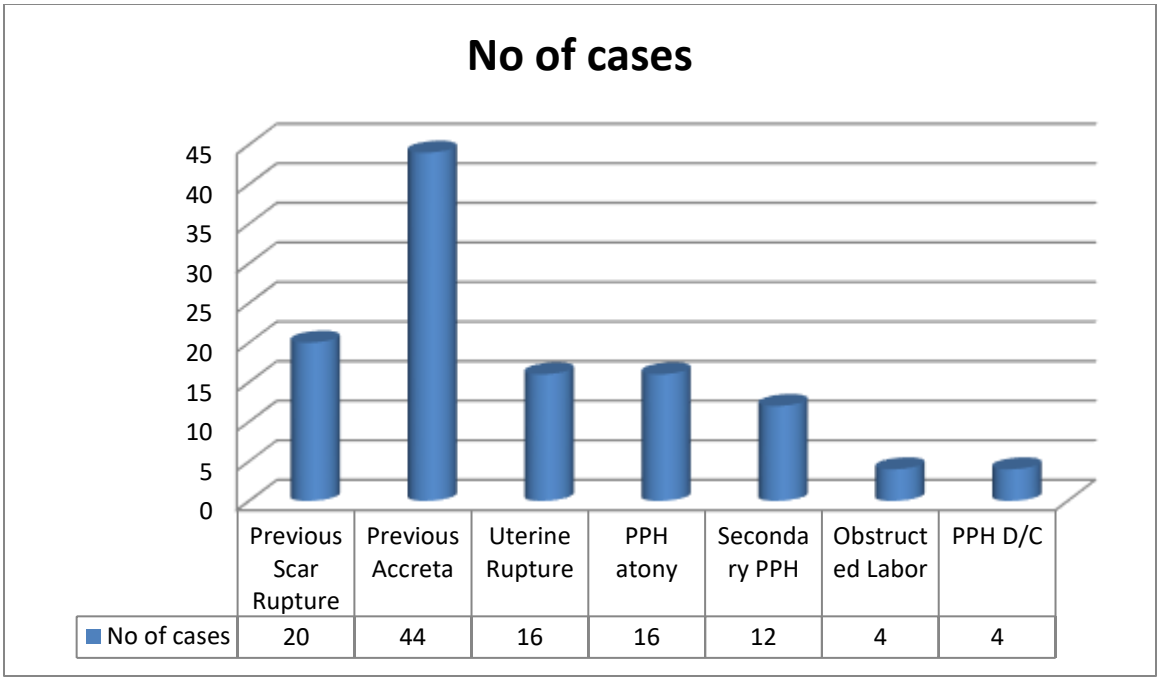

Figure I: Graphical representation of indications for obstetrical hysterectomy (n=116)

Table II: Cross tabulation of outcomes of obstetrical hysterectomy in scarred vs unscarred uterus (n=116)

Variables	Scarred Uterus (n=64)	Unscarred Uterus (n=56)	p-value
Placenta Accreta	44	0	<0.001
Broad ligament hematoma	4	0	
Extension of uterine incision scar rupture	12	0	
Scar ectopic	4	0	
Uterine rupture during labor	0	16	
Postpartum hemorrhage	0	24	
Endometritis and secondary PPH	0	12	

DISCUSSION

The results of this study showed that slightly higher frequencies of females were observed to have scarred uterus (55.2 %) as compared to unscarred uterus (44.8 %). Placenta accreta, broad ligament hematoma, scar ectopic and extension of uterine incision scar rupture was reported in scarred uterus females in 44, 2, 4 and 12 females each. Likewise uterine rupture during labor, postpartum hemorrhage and endometritis with secondary PPH was reported in unscarred uterus females in around 16, 24 and 12 females each with a significant difference of $p<0.001$.

The highest complication reported in our study was of placenta accrete. Similar reports have been observed in other studies as well with onus given to increase in maternal age over 30 years of age to contribute more heavily towards complications such as placenta accrete (16, 17). Likewise same findings were reported by another study by Cleminishi A et al (18).

Similar to the finding of our study were postpartum hemorrhage was reported in unscarred uterus, another study also reported higher incidence of PPH in unscarred uterus females when compared to females with scarred uterus (19). The reason behind this reported was adherence of placenta to be associated with PPH and becoming a very common indication for peripartum hysterectomy (20).

Higher frequencies of blood transfusion were reported in a study, especially in females with placenta accreta. Similarly in our study as well, higher incidences of blood transfusions were reported, especially in placenta accreta females (21).

Rupture of uterus is an uncommonly observed obstetrical emergency but has substantial maternal as well as perinatal mortality and morbidity (22). It is often more associated with scarred uterus than unscarred ones (23). In our study as well, higher frequency of uterine rupture was observed in scarred uterus females when compared with unscarred uterus females. It is reported that in about 1 in 500 females, maternal mortality is observed in uterine rupture females (24). WHO estimates incidence of uterine rupture in about 5.3/10,000 births (25). Overall the complications have been reported in majority of females between 31 to 40 years of age, with 26 to 30 years being the second most common age group for complications (26). Likewise in our study as well, the majority of females as well as complications were reported in the 30 plus age group.

Although this study determined the differences of outcomes in-between scarred and unscarred uterus females, however the study was not free from limitations. Selection bias and observer bias along with limited sample size and single centered study were few of the limitations reported in this study. Further multi-centered studies with greater sample size would help in validating the findings of this study.

CONCLUSION

The results of our study showed that higher frequencies of scarred uterus reported with placenta accrete being the most commonly observed complication. In unscarred uterus females, PPH was reported to be the most frequent complication. Further studies are required to validate findings of this study.

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