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THE IMPORTANCE OF REPRODUCTIVE HEALTH AND FAMILY PLANNING IN THE PREVENTION OF PLACENTA PREVIA

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Abstract: Background: Placenta previa (PP) is a life-threatening obstetric complication characterized by the abnormal implantation of the placenta over the internal cervical os. The rising incidence of PP globally correlates with increasing rates of cesarean sections and intrauterine interventions. This study aims to investigate the relationship between indicators of reproductive health (abortion history, birth spacing, contraceptive use) and the development of placenta previa in the population of the Fergana Valley. Methods: A retrospective case-control study was conducted at the Andijan Regional Perinatal Center (2022-2024). The study included 300 multiparous women: the Main Group (n=100) consisted of women diagnosed with placenta previa, and the Control Group (n=200) included women with normal placental location. Anamnestic data regarding reproductive history, method of contraception, and inter-pregnancy intervals (IPI) were analyzed. Results: Women with placenta previa had a significantly higher history of induced abortions (curettage) (45% vs. 12%, $p<0.001$) and previous cesarean sections (65% vs. 15%, $p<0.001$) compared to the control group. A short inter-pregnancy interval (<12 months) was observed in 38% of the PP group. Furthermore, the use of modern contraceptives was significantly lower in the PP group (22%) compared to the control group (58%). Conclusion: Poor reproductive health indicators, specifically a history of uterine instrumentation (abortions, C-sections) and lack of family planning, are the primary modifiable risk factors for placenta previa. Strategies focused on reducing primary cesarean sections and preventing unwanted pregnancies through effective contraception are essential for reducing the incidence of this pathology.

Keywords: Placenta previa, reproductive health, cesarean section, induced abortion, family planning, birth spacing.

INTRODUCTION

Placenta Previa (PP) represents one of the most formidable challenges in modern obstetrics, defined by the implantation of the placenta in the lower uterine segment where it partially or completely covers the internal cervical os. Clinically manifesting as painless, bright red vaginal bleeding in the second or third trimester, PP is a leading cause of antepartum hemorrhage, necessitating preterm delivery, massive blood transfusions, and emergency hysterectomies. The condition not only threatens maternal life but also significantly increases perinatal morbidity and mortality due to prematurity.

While the global prevalence of PP ranges from 0.3% to 0.5%, tertiary care centers in the Fergana Valley of Uzbekistan are reporting an alarming upward trend, with rates in some cohorts

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approaching 1-2%. This localized surge cannot be attributed solely to genetic factors or maternal age; rather, it strongly correlates with shifts in reproductive behavior and obstetric management.
The etiology of PP is fundamentally linked to the concept of "endometrial damage." The "Endometrial Scar Theory" suggests that a fertilized blastocyst preferentially implants in highly vascularized tissue. If the optimal fundal region of the uterus is scarred, atrophic, or poorly vascularized due to previous trauma (such as Cesarean sections, curettage, or myomectomy) or chronic inflammation, the blastocyst migrates to the lower uterine segment. Thus, PP is increasingly viewed not as a random accident of nature, but as an iatrogenic or behaviorally driven complication.
In the Andijan region, the reproductive landscape is characterized by high parity, short inter-pregnancy intervals, and a persistent reliance on surgical curettage for managing unwanted pregnancies or incomplete miscarriages. Furthermore, the rising rate of Cesarean Sections (CS)—often performed for non-medical indications or maternal request—has created a generation of women with "scarred uteri," which is the single strongest predictor for abnormal placentation, including the devastating Placenta Accreta Spectrum (PAS). This study aims to shift the clinical focus from the acute "crisis management" of hemorrhage to the *primary prevention* of the condition by identifying and quantifying the specific reproductive health determinants driving this epidemic in our local population.

LITERATURE REVIEW

The Scarred Uterus: Mechanisms of Abnormal Implantation The integrity of the endometrium and myometrium is the bedrock of healthy placentation. *Silver et al. (2006)* established a dose-response relationship between the number of prior cesarean sections and the risk of PP. The risk rises from 1% after one CS to nearly 3% after three or more. The mechanism involves the formation of a "niche" or isthmocele at the scar site. This area is often characterized by thinning of the myometrium and disrupted re-epithelialization. The blastocyst, unable to find a healthy decidual bed in the fundus (often due to concurrent scarring or atrophy), settles into this lower segment niche. Furthermore, the scar tissue prevents the natural "trophotropism"—the upward migration of the placenta towards the fundus as the uterus expands during pregnancy—anchoring the placenta over the cervix.
The Impact of Intrauterine Interventions (Surgical Abortion) Dilatation and Curettage (D&C), historically the standard method for induced abortion and miscarriage management, involves the mechanical removal of the uterine lining. Repeated sharp curettage can remove the basalis layer of the endometrium, leading to Asherman's syndrome or, more commonly, subclinical endometrial atrophy and fibrosis. A meta-analysis by *Faiz et al.* confirmed that women with a history of induced abortion have a 1.7-fold increased risk of PP. In regions where access to modern contraception is limited or culturally stigmatized, abortion often serves as a proxy method of birth control. This reliance on surgical termination directly fuels the incidence of PP by cumulatively damaging the endometrial receptivity of the upper uterus.
Birth Spacing and "Maternal Depletion Syndrome" A short inter-pregnancy interval (IPI < 6-12 months) is a critical, yet often overlooked, risk factor. The uterus requires time to undergo full involution, re-vascularization, and endometrial regeneration after delivery. *Condon et al.* found that short IPI is an independent risk factor for uteroplacental bleeding disorders. Conceptions that occur rapidly after a previous birth (especially a cesarean birth) implant into a uterus that is

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in a state of "physiological exhaustion" or incomplete healing. This creates a suboptimal environment in the fundus, prompting the placenta to spread over a larger surface area (placenta membranacea) or implant lower to find adequate blood supply.
Multiparity and Advanced Maternal Age While multiparity itself is a risk factor, modern research suggests it acts as a confounder for cumulative uterine trauma. Older multiparous women are more likely to have had fibroids, previous surgeries, or chronic endometritis. The "aging uterus" hypothesis suggests that atherosclerotic changes in the blood vessels of the fundus drive the placenta toward the lower segment where vascular resistance might be lower, albeit dangerously positioned.
Prevention Strategies - The Role of Family Planning The only effective way to prevent PP is to preserve the anatomical and functional integrity of the uterus. Strategies advocated by WHO and FIGO include:
Reducing the Primary C-section Rate: Preventing the first scar is the most effective way to prevent future PP and Accreta.
LARC Uptake: Increasing the use of Long-Acting Reversible Contraception (IUDs, Implants) to prevent unwanted pregnancies and eliminate the need for abortion.
Medical Management of Miscarriage: Shifting from surgical curettage to Misoprostol or Manual Vacuum Aspiration (MVA) to spare the endometrium from mechanical trauma.

MATERIALS AND METHODS

Study Design A retrospective case-control study was performed at the Andijan Regional Perinatal Center using medical records from 2022 to 2024.
Main Group (n=100): Multiparous women with ultrasonographically confirmed Placenta Previa (major or minor) at >28 weeks gestation.
Control Group (n=200): Multiparous women with normal placental location matched for age and parity.
Parameters Analyzed We collected detailed reproductive histories:
Obstetric History: Number of prior births, mode of delivery (vaginal vs. CS).
Gynecological History: Number of surgical abortions (curettage), history of dilation and evacuation (D&E).
Family Planning: Use of contraceptives between pregnancies, duration of inter-pregnancy interval.
Endometrial Health: History of chronic endometritis or pelvic inflammatory disease (PID).
Statistical Analysis Data were analyzed using SPSS v26. Odds Ratios (OR) with 95% Confidence Intervals (CI) were calculated to determine the strength of association between risk factors and PP.

RESULTS

Obstetric Trauma The history of Cesarean Section was the dominant risk factor.

Table 1: History of Uterine Surgery

Factor	Main Group (PP)	Control Group	Odds Ratio (95% CI)	P-value
Prior Cesarean Section	65%	15%	10.5 (6.2-17.8)	<0.001

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-- 1 Prior CS	35%	12%	-	-
-- ≥2 Prior CS	30%	3%	-	-
History of Curettage (Abortion)	45%	12%	5.8 (3.1-10.9)	<0.001
-- ≥3 Curettages	18%	2%	-	<0.001

Reproductive Behavior and Family Planning The utilization of contraception significantly impacted uterine health. In the Main Group, only 22% of women reported regular use of modern contraceptives (IUD or Hormonal) in the 2 years preceding the current pregnancy. In the Control Group, 58% utilized modern contraception. Consequently, the rate of "unintended pregnancy ending in abortion" was 3 times higher in the Main Group history.

Birth Spacing Women with PP were more likely to have a short inter-pregnancy interval. IPI <12 months: 38% in Main Group vs. 14% in Control Group ($p<0.01$). The combination of "Prior CS + Short Interval (<6 months)" had the highest correlation with placenta previa accreta.

Chronic Endometritis A history of treated chronic endometritis/PID was found in 32% of the PP group compared to 10% in controls, suggesting that inflammation plays a role in preventing normal fundal implantation.

DISCUSSION

This study provides compelling evidence that Placenta Previa in the Andijan region is largely a preventable, man-made complication rooted in reproductive health history. The extremely high Odds Ratio (10.5) for prior Cesarean Section confirms that the "epidemic" of PP is a direct downstream consequence of the rising CS rate. Every unnecessary primary C-section places the woman at exponential risk for PP and Placenta Accreta Spectrum in her next pregnancy.

Furthermore, the high prevalence of curettage (45%) in the PP group indicates a failure of effective family planning and a persistence of outdated gynecological practices. In our region, surgical abortion is still frequently used as a method of fertility control. The mechanical damage to the basalis layer forces the next placenta to implant lower, where the tissue might be less damaged but paradoxically more dangerous for delivery.

The "Short IPI" finding reinforces the critical need for postpartum contraception. Women who conceive rapidly after a C-section or curettage do not give the uterine scar tissue or endometrium adequate time to remodel and heal. This creates a "hostile fundus," pushing the implantation site downwards.

CONCLUSION

Reproductive health is not merely about limiting family size; it is about preserving uterine integrity for future safety. Placenta previa is often the final pathological result of cumulative uterine trauma.

Prior C-sections and surgical abortions are the most significant, modifiable predictors of PP in our population.

Effective family planning is a primary prevention strategy for PP. By preventing unwanted pregnancies, it eliminates the need for curettage; by ensuring optimal birth spacing, it allows endometrial regeneration.

Chronic endometritis and short birth intervals act as predisposing factors for low implantation.

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RECOMMENDATIONS

To reduce the burden of Placenta Previa in the Andijan region, a multi-faceted strategy is required:

Obstetric Policy:

Reduce Primary CS: Strictly adhere to the Robson Classification to monitor and lower the primary C-section rate. Every vaginal birth after cesarean (VBAC) counseling should include the risk of PP in future pregnancies as a motivator for a trial of labor.

Audit Indications: Implement mandatory peer-review audits for all elective C-sections performed on nulliparous women.

Gynecological Practice:

Phase Out Curettage: Transition from sharp curettage (D&C) to Medical Abortion (Mifepristone/Misoprostol) or Manual Vacuum Aspiration (MVA) for the management of miscarriage and induced abortion. These methods are significantly less traumatic to the endometrium.

Treat Endometritis: Aggressively diagnose and treat chronic endometritis in women with a history of abortion before they conceive again.

Family Planning:

Postpartum LARC: Promote the insertion of IUDs or contraceptive implants immediately postpartum (within 10 minutes of placental delivery) or before hospital discharge to ensure an inter-pregnancy interval of at least 2 years.

Public Education: Launch awareness campaigns educating women that "The Uterus Needs to Rest" for at least 18-24 months between births to prevent complications like PP and uterine rupture.

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