

## EVALUATION OF POST ABORTION AND POSTPARTUM PATIENTS IN ULTRASOUND

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### ABSTRACT

**Introduction:** This study assesses post-abortion and postpartum patients through ultrasound in order to recognize complications and enhance maternal health outcomes. It underscores the necessity of understanding female reproductive anatomy and employing ultrasound—specifically transvaginal and pelvic methods—to identify issues such as retained products of conception (RPOC), uterine rupture, endometritis, and vascular abnormalities. The research highlights the utility of ultrasound as a non-invasive and cost-effective diagnostic approach for complications like postpartum hemorrhage, pelvic injuries, and infections that arise in the postpartum and post-abortion phases.

**Material and Method:** A cross-sectional study conducted at Mian Trust Hospital in Faisalabad involved 70 women aged 18-50 who were examined using high-frequency ultrasound probes. The results indicated a significant occurrence of RPOC, myometrial hyper vascularity, and uterine alterations following both C-section and vaginal deliveries. This study emphasizes the vital importance of ultrasound in the early detection and management of complications, recommending routine evaluations postpartum and post-abortion to improve maternal health outcomes.

**Result:** The descriptive statistics indicate that among 70 cases, clinical and ultrasound findings showed varying mean values, with the highest mean for cervical trauma (1.5286) and the lowest for gestational sac (1.0571). Standard deviations were relatively low across findings, indicating minimal variation within the dataset.

**Discussion:** Ultrasound imaging plays a vital role in obstetrics particularly in the post-abortion and post-partum patients. This non-invasive and cost-effective tool provides critical insights into pelvic anatomy, identifying complications. The ability of ultrasound to offer immediate diagnostic capabilities make it indispensable in maternal case. This document also underscores the importance of using Trans abdominal and Transvaginal ultrasound to evaluate the conditions comprehensively.

**Conclusion:** This study emphasizes the vital role of ultrasound in diagnosing post-abortion and postpartum complications, such as retained products of conception (RPOC), endometritis, and uterine abnormalities. RPOC was the most common issue (50%), often linked to vaginal bleeding, while endometritis was associated with anechoic fluid or RPOC. The findings highlight the importance of age-specific diagnostic and management strategies to improve maternal health outcomes.

**Keywords:** Post abortion complication, postpartum complication, Retained product of conception, Endometritis, Postpartum hemorrhage, Myometrial hyper vascularity.

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## INTRODUCTION

The female reproductive system is made up of both external and internal genital structures. Externally, it includes the labia minora, labia majora and vestibule, while the internal components comprise the vagina, uterus, cervix, fallopian tubes, and ovaries. A thorough understanding of female anatomy is crucial for healthcare providers in obstetrics and gynecology. As pregnancy progresses, the uterus enlarges from the pelvic area into the abdominal cavity due to changes in the myometrium. Abortion, generally conducted during the first or second trimester, is a procedure to terminate pregnancy, where the safety of the process is paramount. Safe abortions present fewer risks compared to unsafe ones, which can lead to complications like retained products of conception (RPOC), uterine perforation, bleeding, and infections such as endometritis. Symptoms post-abortion commonly include bleeding that can last up to two weeks and menstrual irregularities, while serious cases may consist of excessive bleeding, blood clots, dizziness, or fever.

The postpartum period, also referred to as puerperium, lasts six to eight weeks after the delivery of the baby and placenta. This time is critical as complications, especially in the pelvis and abdomen, can arise. Endovaginal ultrasound is a key diagnostic method during this stage, owing to its affordability, accessibility, and ability to evaluate the endometrial cavity for complications without using ionizing radiation. Postpartum pelvic pain and vaginal bleeding are frequent symptoms necessitating assessment in emergency contexts. When monitoring these symptoms and guiding quick medical treatment, ultrasound plays a fundamental part. Postpartum complications may manifest as unusual vaginal bleeding, discharge, unpleasant odors, and pain during intercourse, and fertility issues. Conditions like chronic endometritis, recurrent pelvic inflammatory disease, and pelvic discomfort may also develop, but symptoms can vary widely and may overlap with other medical issues. Postpartum Hemorrhage (PPH) occurs in primary and secondary forms, often due to uterine atony, retained products of conception, or uterine rupture. Endometritis is a common complication linked to pelvic pain and vaginal discharge. Potential issues include uterine rupture, pelvic trauma, and uterine dehiscence.

Conditions may include coagulopathy, placenta accrete spectrum, ovarian vein thrombophlebitis, and uterine arteriovenous malformations. Ultrasound serves as the primary imaging tool for assessing complications post-abortion and during the postpartum period, especially in cases of abnormal vaginal bleeding and RPOC. This study aims to evaluate the effectiveness of ultrasound in detecting complications such as RPOC, uterine rupture, uterine arteriovenous malformations, and vein thrombosis. It also underscores the importance of color Doppler ultrasound in identifying myometrial hyper vascularity (MH) following first-trimester dilation and curettage (D&C). In a study involving 65 women post-D&C, MH was found in 24.6% of cases, with RPOC being the leading cause. Proper utilization of ultrasound can enhance the early identification and management of PPH and other significant postpartum complications. This article seeks to shed light on the ultrasound findings associated with postpartum complications, emphasizing the critical need for prompt diagnosis and intervention to mitigate maternal morbidity and mortality.

## Material and Method

A cross-sectional analytical study in which data collected from Mian Trust Hospital, Faisalabad and it's completed in 4th month's duration. The sample size of 150 patients was taken that had history of pelvic pain, bleeding, miss carriage, previous abortion. But due to exclusion criteria we include data of 70 patients. The technique which was used is cross-sectional sampling technique. In inclusion criteria the female of age 18 to 50 year, with vaginal bleeding, pelvic pain, endometritis and those with menstrual period last for 2 to 6 weeks are included. While in exclusion criteria the female patients with below 18 age above 50 years age, pregnancy or suspected pregnancy and with allergic reaction to medications are excluded. Edan Aloka Toshiba Ultrasound machine, linear probe with 7-12 MHz frequency and transvaginal probe with 5-9 MHz frequency is used. Permission for research was taken from hospital ethical committee. The criteria for the inclusion and the exclusion was completed by the patients who were included in this work. After taking relevant history, US transvaginal of all patients performed and reported by senior Radiologists. Data was collected on the basis of predesigned Performa. In postpartum and post abortion ultrasound, a high frequency linear probe of 7-12 MHz is used for detailed imaging of superficial structure in the pelvis. The patient generally lies flat on the sonography table in a supine posture for the USG of pelvic region. The bladder of

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the patient should be full as a full bladder helps to provide a clear view of the pelvic organs. Apply gel and place a probe transversely or longitudinally over the lower abdomen to visualize the uterus, bladder and any cesarean scars. Apply gentle pressure and move the probe slowly to assess different plans, checking for retained product of conception, wound complication or hematomas. Clear image and measurements are documented, noting any retained tissue, abnormal fluid collection or sign of infection. No after care is needed after the procedure.

For postpartum and post abortion ultrasound, another probe called transvaginal probe (5-9 MHZ) is also used. For transvaginal ultrasound the patient usually lies on an examination table with their feet in stirrups, the patient is positioned in a lithotomy position. A lubricated transvaginal probe covered with a protective sheath is gently inserted into the vaginal canal, providing clear, close-up imaging of the pelvic organs. They may need to empty their bladder for better visualization of pelvic structures. A specially designed transvaginal probe (or transducer) is covered with a protective sheath and lubricated for comfort. This probe is inserted a few inches into the vaginal canal. The healthcare provider may gently move or angle the probe to capture different views of the organs. This helps provide detailed images from various perspectives, especially useful for assessing uterine lining, ovaries, and other pelvic structures.

## Result

The descriptive statistics indicate that among 70 cases, clinical and ultrasound findings showed varying mean values, with the highest mean for cervical trauma (1.5286) and the lowest for gestational sac (1.0571). Standard deviations were relatively low across findings, indicating minimal variation within the dataset.

**In table 5.1 ; Descriptive Statistics of clinical and ultrasound findings**

	N	Mean	Std. Deviation	Variance
Endometritis	70	1.4429	.50031	.250
PPH	70	1.3714	.48668	.237
Cervicaltrauma	70	1.5286	.50279	.253
RPOC	70	1.2857	.45502	.207
Massesinendometrialcavity	70	1.2714	.44791	.201
Anechoicfluidinendometriumcavity	70	1.1714	.37960	.144
Gestational sac	70	1.0571	.23379	.055
Valid N (listwise)	70			

N= Number of Cases, STD= Standard deviation, PPH= postpartum hemorage, RPOC= Retained products of conception

**In Table 5. 2; Age based response of patients for vaginal bleeding**

		Vaginal Bleeding			
		No	Yes	Total	
Age	Young	Count	32	10	42
		% within Age	76.20%	23.80%	100.00%
Age	Old	Count	23	5	28
		% within Age	82.10%	17.90%	100.00%
Total		Count	55	15	70
		% within Age	78.60%	21.40%	100.00%

Young group 18-30, Old group 31-50

Among young patients (18-30 years), 23.8% reported vaginal bleeding, while 17.9% of older patients (31-50 years) reported the same. Overall, 21.4% of the total patients experienced vaginal bleeding.

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**In Table 5.3; Tests of vaginal bleeding(CHI SQUARE)**

	n	Degree of Freedom	Two sided Significance (Asymptomatic)	Two sided Significance (Exact)	One Sided Significance (Exact)
Chi-Square(Pearson Value)	.354 <sup>a</sup>	1	.552		
Correction <sup>b</sup> for Continuity	.088	1	.766		
Ratio of likelihoodness	.359	1	.549		
Exact Test of Fisher				.767	.388
Association Linear-by-Linear	.348	1	.555		
Valid Cases (N)	70				

The (a) value stands for the predicted count for zero cells means 0.0 percent and is less than Five. While six is the predicted value (minimum).

The (b) is only assigned for table (2×2).

Chi-Square test results for vaginal bleeding among 70 cases indicate no significant association, as all p-values (Asymp. Sig., Exact Sig.) Are greater than 0.05. 0.354 is the Chi-Square (Pearson) value with DF of 1.

**In Table 5.4; Age based response of patients for endometritis**

		Endometritis			
		No	Yes	Total	
Age	Young	Count	23	19	42
		% within Age	54.80%	45.20%	100.00%
	Old	Count	16	12	28
		% within Age	57.10%	42.90%	100.00%
Total	Count	39	31	70	
	% within Age	55.70%	44.30%	100.00%	

Young group 18-30, Old group 31-50

Endometritis was slightly more frequently diagnosed in younger generations and was found to be in almost 45 percent of the generation in comparison to the group that was older and was found to be almost 43 percent of the generation. Endometritis contributed to 44.3 percent of total patients of this study, with the vast majority ranging within 18–30 age spectrum.

**In Table 5.5; Chi-Square Test of endometritis**

	n	Degree of Freedom	Two sided Significance (Asymptomatic)	Two sided Significance (Exact)	One sided Significance (Exact)
Chi-Square(Pearson)	.039 <sup>a</sup>	1	.844		
Correction <sup>b</sup> for Continuity	.000	1	1.000		
Ratio of likelihoodness	.039	1	.844		
Exact Test of Fisher				1.000	.520
Association Linear-by-Linear	.038	1	.845		
Valid Case (N)	70				

The (a) value stands for the predicted count for zero cells means 0.0 percent and is less than Five. While 12.40 is the predicted value (minimum).

The (b) is only assigned for table (2×2).

There is not a significant association amongst each of the variables evaluated based to the Chi-square test outcomes (Table 2.1), with all p-values > 0.05.

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**In Table 5.6; Age based response of patients for PPH**

		PPH			
		No	Yes	Total	
Age	Young	Count	28	14	42
		% within Age	66.70%	33.30%	100.00%
	Old	Count	16	12	28
		% within Age	57.10%	42.90%	100.00%
Total	Count	44	26	70	
	% within Age	62.90%	37.10%	100.00%	

Young group 18-30, Old group 31-50, PPP= Postpartum haemorrhage

From Table 3, younger patients (18-30 years) had a lower percentage of PPH (33.3%) compared to older patients (31-50 years) with 42.9%, though the overall prevalence of PPH among the 70 cases was 37.1%.

**In Table 5.7 ; Tests for PPH(CHI SQUARE)**

	n	Degree of Freedom	Two sided Significance (Asymptomatic)	Two sided Significance (Exact)	One sided Significance (Exact)
Chi-Square (Pearson)	.653 <sup>a</sup>	1	.419		
Correction <sup>b</sup> for Continuity	.308	1	.579		
Ratio of Likelihoodness	.650	1	.420		
Exact Test of Fisher				.457	.289
Association Linear-by-Linear	.643	1	.422		
Valid Cases(N)	70				

The (a) value stands for the predicted count for zero cells means 0.0 percent and is less than Five. While 10.40 is the predicted value (minimum).

The (b) is only assigned for table (2x2).

There's no statistically significant relationship between the variables that are under review, based on the outcomes of the chi-square analysis ( $p > 0.05$  for all tests). A value of 0.653 (DF=1,  $p=0.419$ ) was found through Pearson Chi-Square, whilst  $p=0.457$  was acquired via The Fisher's Exact Test. All expected counts were adequate.

**In Table 5.8 ; Age based response of patients for cervical trauma**

		Cervical trauma			
		No	Yes	Total	
Age	Young	Count	18	24	42
		% within Age	42.90%	57.10%	100.00%
	Old	Count	15	13	28
		% within Age	53.60%	46.40%	100.00%
Total	Count	33	37	70	
	% within Age	47.10%	52.90%	100.00%	

Young group 18-30, Old group 31-50

The table shows that cervical trauma is more prevalent in the young age group (57.1%) compared to the old age group (46.4%). Overall, 52.9% of the total participant's experienced cervical trauma, with a higher occurrence in younger individuals aged 18-30.

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**In Table 5.9 ; Chi-Square Tests of Cervical Trauma**

	n	Degree of Freedom	Two sided Significance (Asymptomatic)	Two sided Significance (Exact)	One sided Significance (Exact)
Chi-Square(Pearson)	.774 <sup>a</sup>	1	.379		
Correction for Continuity	.404	1	.525		
Ratio of Likelihoodness	.774	1	.379		
Exact Test of Fisher				.466	.263
Association Linear-by-Linear	.763	1	.382		
Valid Cases(N)	70				

The (a) value stands for the predicted count for zero cells means 0.0 percent and is less than Five. While 13.20 is the predicted value (minimum).

The (b) is only assigned for table (2×2).

The Chi-Square analysis shows no statistically significant association between cervical trauma and the variable studied, as indicated by the Pearson Chi-Square value ( $\chi^2 = 0.774$ ,  $p = 0.379$ ) and Fisher's Exact Test ( $p = 0.466$ ). The minimum expected count meets the assumption for validity.

**In Table 5.10 ; Age based response of patients for RPOC**

		RPOC			
			No	Yes	Total
Age	Young	Count	27	15	42
		% within Age	64.30%	35.70%	100.00%
Age	Old	Count	23	5	28
		% within Age	82.10%	17.90%	100.00%
Total		Count	50	20	70
		% within Age	71.40%	28.60%	100.00%

Young group 19-30, Old group 31-50, RPOC= retained products of conception

The data shows that a higher percentage of young patients (35.7%) experienced retained products of conception (RPOC) compared to older patients (17.9%). Overall, 28.6% of the total patients had RPOC, with a greater proportion in the young age group (19-30 years).

**In Table 5.11 ; Chi-Square Tests of RPOC**

	Value	Degree of Freedom	Two sided Significance (Asymptomatic)	Two sided Significance (Exact)	One sided Significance (Exact)
Pearson Chi-Square	2.625 <sup>a</sup>	1	.105		
Continuity Correction <sup>b</sup>	1.823	1	.177		
Likelihood Ratio	2.734	1	.098		
Fisher's Exact Test				.176	.087
Linear-by-Linear Association	2.587	1	.108		
N of Valid Cases	70				

The (a) value stands for the predicted count for zero cells means 0.0 percent and is less than Five. While 8.00 is the predicted value (minimum).

The (b) is only assigned for table (2×2).

The Chi-Square tests indicate no statistically significant association between age and retained products of conception (RPOC), as the Pearson Chi-Square value ( $\chi^2 = 2.625$ ,  $p = 0.105$ ) and Fisher's Exact Test ( $p = 0.176$ ) are above the 0.05 threshold. The data suggests that age does not significantly influence the occurrence of RPOC.



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**In Table 5.12 ; Age based response of patients for Masses in endometrial cavity**

		Masses in Endometrial cavity			
		No	Yes	Total	
Age	Young	Count	32	10	42
		% within Age	76.20%	23.80%	100.00%
	Old	Count	19	9	28
		% within Age	67.90%	32.10%	100.00%
Total	Count	51	19	70	
	% within Age	72.90%	27.10%	100.00%	

Young group 18-30, Old group 31-50

The data shows that a higher percentage of older patients (32.1%) had masses in the endometrial cavity compared to younger patients (23.8%). Overall, 27.1% of the total patients had masses, with a greater proportion in the older age group (31-50 years).

**In Table 5.13 ; Chi-Square Tests of Masses in endometrial cavity**

	Value	Degree of Freedom	Two sided Significance (Asymptotic)	Two sided Significance (Exact)	One sided Significance (Exact)
Pearson Chi-Square	.590 <sup>a</sup>	1	.442		
Continuity Correction <sup>b</sup>	.244	1	.621		
Likelihood Ratio	.584	1	.445		
Fisher's Exact Test				.584	.309
Linear-by-Linear Association	.582	1	.446		
N of Valid Cases	70				

The (a) value stands for the predicted count for zero cells means 0.0 percent and is less than Five. While 13.420 is the predicted value (minimum).

The (b) is only assigned for table (2×2).

The Chi-Square test results in Table 6.1 show no significant association between masses in the endometrial cavity (Pearson Chi-Square = 0.590, p = 0.442).

**In Table 5.14 ; Age based response of patients for AF in endometrium cavity**

		AF in Endometrium cavity			
		No	Yes	Total	
Age	Young	Count	32	10	42
		% within Age	76.20%	23.80%	100.00%
	Old	Count	26	2	28
		% within Age	92.90%	7.10%	100.00%
Total	Count	58	12	70	
	% within Age	82.90%	17.10%	100.00%	

Young group 18-30, Old group 31-50. AF=anechoic fluid

In Table 7, the younger group (18-30 years) shows a higher prevalence of anechoic fluid (AF) in the endometrial cavity (23.8%) compared to the older group (31-50 years) (7.1%), suggesting a possible age-related difference in AF occurrence.

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**In Table 5.15 ; Chi-Square Tests of Anechoic fluid in endometrium cavity**

	Value	Degree of Freedom	Two sided Significance (Asymptomatic)	Two sided Significance (Exact)	One sided Significance (Exact)
Pearson Chi-Square	3.285 <sup>a</sup>	1	.070		
Continuity Correction <sup>b</sup>	2.217	1	.137		
Likelihood Ratio	3.625	1	.057		
Fisher's Exact Test				.106	.065
Linear-by-Linear Association	3.239	1	.072		
N of Valid Cases	70				

The (a) value stands for the predicted count for zero cells means 0.0 percent and is less than Five. While 4.80 is the predicted value (minimum).

The (b) is only assigned for table (2×2).

The chi-square tests for anechoic fluid in the endometrial cavity show that there is no statistically significant association, as the Pearson Chi-Square test ( $p = 0.070$ ) and Likelihood Ratio ( $p = 0.057$ ) both result in p-values greater than 0.05. Fisher's Exact Test ( $p = 0.106$  for two-sided and  $p = 0.065$  for one-sided) further supports this lack of significance.

**In Table 5.16 ; Age based response of patients for gestational sac**

		Gestational sac			
		No	Yes	Total	
Age	Young	Count	39	3	42
		% within Age	92.90%	7.10%	100.00%
	Old	Count	27	1	28
		% within Age	96.40%	3.60%	100.00%
Total	Count	66	4	70	
	% within Age	94.30%	5.70%	100.00%	

Young group 18-30, Old group 31-50

The table shows that in the young group (ages 18-30), 92.9% did not have a gestational sac, while only 7.1% had one. In the old group (ages 31-50), 96.4% did not have a gestational sac, and 3.6% had one. Overall, 94.3% of all patients did not have a gestational sac, and 5.7% had one.

**In Table 5.17 ; Chi-Square Tests of Gestational sac**

	Value	Degree of Freedom	Two sided Significance (Asymptomatic)	Two sided Significance (Exact)	One sided Significance (Exact)
Pearson Chi-Square	.398 <sup>a</sup>	1	.528		
Continuity Correction <sup>b</sup>	.011	1	.916		
Likelihood Ratio	.422	1	.516		
Fisher's Exact Test				.645	.473
Linear-by-Linear Association	.392	1	.531		
N of Valid Cases	70				

The (a) value stands for the predicted count for zero cells means 0.0 percent and is less than Five. While 1.60 is the predicted value (minimum).

The (b) is only assigned for table (2×2).



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The chi-square tests show no significant association between the variables, as all p-values (Asymp. Sig., Exact Sig., and Exact Sig. 1-sided) are greater than 0.05. Specifically, the Pearson Chi-Square, Continuity Correction, and Likelihood Ratio all have p-values of 0.528, 0.916, and 0.516, respectively. Additionally, Fisher's Exact Test yielded a p-value of 0.645, further indicating no significant relationship.

**In Table 5.18 ; Frequency Table of Vaginal bleeding**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	55	78.6	78.6	78.6
	2.00	15	21.4	21.4	100.0
	Total	70	100.0	100.0	
1=No, 2=yes					

The frequency table shows that 78.6% of the cases reported no vaginal bleeding (1.00), while 21.4% reported vaginal bleeding (2.00). The total number of cases is 70, with 100% valid responses.

**In Table 5.19 ; Frequency Table of Endometritis**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	39	55.7	55.7	55.7
	2.00	31	44.3	44.3	100.0
	Total	70	100.0	100.0	
1=No, 2=yes					

The frequency table shows that 55.7% of the participants reported "No" (1.00) for endometritis, while 44.3% reported "Yes" (2.00). The total number of respondents is 70.

**In Table 5.20 ; Frequency Table of PPH**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	44	62.9	62.9	62.9
	2.00	26	37.1	37.1	100.0
	Total	70	100.0	100.0	
1=No, 2=yes, PPH= post-partum hemorrhage					

The frequency table indicates that 62.9% of the cases did not experience postpartum haemorrhage (PPH), while 37.1% did. The total number of valid responses was 70, with no missing data.

**In Table 5.21 ; Frequency Table of Cervical trauma**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	33	47.1	47.1	47.1
	2.00	37	52.9	52.9	100.0
	Total	70	100.0	100.0	
1=No, 2=yes					

The frequency table shows that 47.1% of the cases did not experience cervical trauma, while 52.9% did. The total number of valid responses was 70, with no missing data.

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**In Table 5.22 ;Frequency Table of RPOC**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	50	71.4	71.4	71.4
	2.00	20	28.6	28.6	100.0
	Total	70	100.0	100.0	

1=No, 2=yes, RPOC= Retained products of conceptions

The frequency table indicates that 71.4% of the cases did not have retained products of conception (RPOC), while 28.6% did. The total number of valid responses was 70, with no missing data.

**In Table 5.23 ; Frequency Table of Masses in endometrial cavity**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	51	72.9	72.9	72.9
	2.00	19	27.1	27.1	100.0
	Total	70	100.0	100.0	

1=No, 2=yes

The frequency table shows that 72.9% of the cases did not have masses in the endometrial cavity, while 27.1% did. The total number of valid responses was 70, with no missing data.

**In Table 5.24 ;Frequency Table of Gestational sac**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	66	94.3	94.3	94.3
	2.00	4	5.7	5.7	100.0
	Total	70	100.0	100.0	

1=No, 2=yes

The frequency table indicates that 94.3% of the cases did not have a gestational sac, while 5.7% did. The total number of valid responses was 70, with no missing data.

**In Table 5.25 ; Frequency Table of Ann-echoic fluid in endometrium cavity**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	60	70.3	70.3	70.3
	2.00	10	16.4	16.4	100.0
	Total	70	100.0	100.0	

1=No, 2=yes

The frequency table shows that 70.3% of the cases did not have an anechoic fluid in the endometrial cavity, while 16.4% did. The total number of valid responses was 70, with no missing data.

## Discussion

This study suggests that the post abortion and post-partum complications may follow those type of procedures which are safe or unsafe. The safe procedures of abortion take place in healthy environment and suitable medical settings with highly qualified practitioners while unsafe abortions involve unregulated practices and also may use dangerous methods. The mortal rate of safe abortions are under 0.2% and the mortality rate of unsafe abortions are 4.7% to 13.2%.after performing safe or unsafe complications may occur in which some are serious like heavy bleeding, endometritis and injuries to organs. Emergency clinicians should be equipped to identify these complications from booth safe and unsafe abortions. The research investigates sonographic indicators that related to retained placental tissue in women experiencing

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secondary postpartum hemorrhage. The study analyze 79 participants and they divided into 2 groups: one that required surgical treatment (Group 1) and other that received conservative care (Group 2).

In group 1 those patients are included which have well-defined echogenic mass in the uterine cavity. In group 2 the patients showed a mixed echo pattern in the cavity representing the combination of fluid and echogenic substances. The study emphasizes these importance of ultrasound in detecting the presence of echogenic mass and retained placental tissue. The use of ultrasound in diagnosing and managing secondary postpartum hemorrhage given the link between retained placental tissue and echogenic mass. The study does acknowledge certain limitations including lack of histopathological validation and also focusing more on complications and the use of imaging to detect and manage the conditions.

Ultrasound imaging plays a vital role in obstetrics particularly in the post- abortion and post- partum patients. This non-invasive and cost- effective tool provides critical insights into pelvic anatomy, identifying complications. The ability of ultrasound to offer immediate diagnostic capabilities make it indispensable in maternal case. This document also underscores the importance of using Trans abdominal and Transvaginal ultrasound to evaluate the conditions comprehensively.

## Conclusion

This study highlights the importance of ultrasound in assessing complications following abortion and childbirth. It reviews the anatomy of the female reproductive system, common complications such as retained products of conception (RPOC), endometritis, and uterine abnormalities, and emphasizes ultrasound's role as a non-invasive diagnostic tool for identifying these issues. Key findings include: RPOC occurred in 50% of cases, often linked to vaginal bleeding (47.1%), Postpartum hemorrhage (PPH) and cervical trauma were less common, at 14.3% and 15.7%, respectively, Endometritis was often associated with anechoic fluid or RPOC. Most complications were reported in women aged 22–35, while those over 40 had higher rates of endometrial masses and cervical trauma. The study underscores ultrasound's critical role in detecting complications and improving maternal health outcomes, particularly through targeted diagnosis and management based on patient age and clinical features.

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