

SPECTRUM OF INTRA-UTERINE SONOGRAPHIC FINDINGS IN COMPLICATED ILLEGAL ABORTION AMONG ADOLESCENT GIRLS IN LAGOS, SOUTH WEST NIGERIA

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Abstract

Background: In complicated abortion clinical evaluation alone may misdiagnose the true state of the endometrium and precipitate wrong or ineffective management.

Objective: The objectives of this study are to document the various sonographic features of the uterine cavity following complicated illegal abortions in adolescent girls and to show how these complications are distributed according to mechanism of abortion and the abortionists.

Methods: In a prospective cross sectional survey conducted on 300 adolescent girls who were recruited through convenience sampling, endovaginal ultrasound was used to assess the uterine cavity. The evaluation was directed at identifying and describing the appearance of any intrauterine findings on sagittal, coronal and transverse images. The dimensions of any intrauterine content were measured.

Results: The highest number of complicated abortions, 110(36.7%) and 86(28.7%), occurred at ages 18 and 17 respectively, while the preponderance of complications (238, 80%) occurred at gestational ages 4 to 8 weeks. Most adolescents in this study have had multiple rounds of induced abortions, some having as many as 7 episodes. At least 66% of the patients procured abortion in places other than a hospital. The most frequent ultrasound findings in these patients were incomplete abortion 120(40%) and missed abortion 100(33.3%). Majority of patients who presented with combinations of vaginal bleeding and lower abdominal/pelvic pain were either diagnosed with incomplete abortion 100(33%) or missed abortion 73(24%) respectively. Use of abortifacients and D&C, were most frequently adopted (57.3% and 33%, respectively) but abortifacients recorded the highest number of complications. Physicians recorded worse complications (n= 97) while Nursing personnel and Pharmacists followed closely (n= 89 and 75 in that order).

Conclusion: Our results suggest that incomplete and missed abortions constitute majority of complications in illicit adolescent abortions and use of abortifacients presents most risks.

Keywords: complicated illegal abortion, adolescent girls, sonographic findings, Nigeria.

Introduction

Teenage pregnancy is a source of worry to every parent and girls who fall victim and try to hide it often get into bigger trouble by attempting abortion illegally[1]. Report has it that an estimated 610,000 induced abortions occur in Nigeria annually, accounting for

approximately 40% of maternal deaths.[1] Many studies on abortion morbidity and mortality have reported that teenagers constitute majority of the victims of illegal or unsafe abortion [2-4]. Unsafe abortion as defined by the World Health Organization (WHO) is any procedure to terminate an

unintended pregnancy done either by people lacking the necessary skills or in an environment that does not conform to minimum medical standards or both[5]. Unsafe abortion remains one of the most neglected sexual and reproductive health problems in developing countries today despite its significant contribution to maternal mortality and morbidity [6]. Studies have suggested that teen pregnancies are known to compromise women's educational prospects and economic opportunities [7-9]. In no other society is this truer than third world countries like Nigeria where women's education is not a priority of poor uneducated families. It is generally agreed that teen pregnancies are linked to poor social and economic conditions and prospects[10]. The risk of death associated with pregnancy is said to be higher among 15- to 19-year olds than among 20- to 24-year olds[11].

According to Ogiamen, illegal induced abortion constitutes a crime and may be committed any time before the natural birth of the child [12]. Nigeria has highly restrictive abortion laws as both the criminal code (applicable mainly in the South) and penal code (applicable in the North) prescribe various forms of punishment ranging from fine to different terms of imprisonment for procurement of abortion [13,14]. In spite of these stringent measures, an estimated 1.25 million induced abortions were said to be committed in Nigeria in 2012, most of which were unsafe[13].

Here is a society that frowns at premarital sex and childbearing outside wedlock and stigmatizes deviants. The stigma associated with pregnancy outside wedlock could explain the higher rate of induced abortion among single women [15]. Shobhitha et al[16] affirm that even in the face of legalization, stigma still contributes to life threatening complications of abortion in teenage girls. In order to avoid the stigma often associated with abortion, abortion

seekers crave for secrecy and hence patronize quacks, thereby endangering their health. Only those with resultant complications invariably present at the hospitals [17].

It has been reported that unsafe abortion is most often associated with attendant complications of sepsis, hemorrhage requiring blood transfusion, uterine and bowel perforation, pelvic abscess, endotoxic shock, renal failure and death [18]. These complications tend to develop due to incomplete evacuation of the uterus and uterine atony leading to haemorrhage, instrumentation injury, and infection with mixed pathogens derived from normal vaginal flora causing septic abortion [19]. A previous study has reported that complicated induced abortions contribute to burdens of maternal morbidity and mortality [20].

Clinical evaluation alone may misdiagnose the true state of the endometrium and hence precipitate wrong or ineffective management. Transvaginal ultrasound holds the potential for empirical evidence of the true state of the endometrial cavity, uterine outline and the adnexae. Sonography is considered the preferred modality to diagnose retained products of conception [21]. This study aims to reveal the various sonographic features of the uterine cavity in the event of complicated induced abortion as well as the distribution of risks of complication according to abortion mechanism and abortifacients. Accurate knowledge of the dynamics of this social malady may help policy makers and relevant agencies to properly address the issues.

Materials and Methods

This was a prospective cross sectional study conducted on adolescent girls referred for pelvic ultrasound for complicated abortions from March 2014 to February 2015. Convenience sampling method was used to select 300 subjects who met the inclusion criteria. Patients were included in the study if they were adolescent girls in the age range of

13 to 19 years and referred to ultrasound for complicated induced abortion. The study excluded patients who did not fall within the above age group or those who were referred for retained products of conception following spontaneous abortion or miscarriage. Ethical approval for the study was issued by the Ethics Committee of the study centre in accordance with the ethical standards laid down in the Declaration of Helsinki (as revised in Brazil 2013). The procedure was explained to each patient and their parents and the examination proceeded only after the patient or parent had signed the consent form. All procedures were done by two experienced sonographers in the presence of a female nurse as chaperon. Each sonographer wore sterile hand gloves and covered the transvaginal probe with condom tipped with ultrasonic gel.

The equipment used is GE LOGIQ-P6 Digital Ultrasound system manufactured in 2012 in USA and equipped with a 4 - 11 MHz variable frequency endovaginal probe (E8C). The evaluation was directed at identifying and describing the appearance of any intrauterine and pelvic findings on sagittal, coronal and transverse images. The dimensions of any intrauterine content were measured at the thickest point of the longitudinal image from the anterior to the posterior mucosal border. The uterine borders were also assessed for continuity to rule out perforation while the adnexae and pouch of Douglas were evaluated for fluid collection. Data collected from ultrasound procedures, referral forms and direct interview of subjects were analysed using percentages on SPSS software version 20.

Results

The age of the girls ranged from 13 to 19 years with a mean of 16 years. The highest number of complicated induced abortions, 110(36.7%) and 86(28.7%), occurred at ages 18 and 17 years respectively (table 1). The

preponderance of complications 238(80%) occurred at gestational ages 4 to 8 weeks. Most of the adolescents have had multiple induced abortions, with some having as many as 7 episodes.

Facilities used for procurement of abortion were private hospitals, Nursing Homes, Pharmacy, and Herbal Homes (table 2). Majority of the abortions occurred in private hospitals (102, 34%), Nursing Homes (89, 27.7%) and Pharmacies (75, 25%). Table 2 also shows that a sizeable number of the patients (230, 43.5%) presented with lower abdominal/pelvic pain, followed by vaginal bleeding, (220, 41.6%). On mechanism of abortion, use of abortifacient and D&C, were most frequently adopted (57.3% and 33%, respectively), table 2.

With respect to ultrasound findings majority of the patients (120, 40%) had incomplete abortion and missed abortion (100, 33.4%) - table 3. Anembryonic sacs were seen in 30(10%) patients, failed abortion in 22(7.3%) patients and Asherman's syndrome in 1(0.3%) patient.

The definitive diagnosis made by ultrasound and its correlation with the presenting clinical signs and symptoms are highlighted in table 4. Majority of patients who presented with combinations of vaginal bleeding and lower abdominal/pelvic pain were either diagnosed with incomplete abortion (98) or missed abortion (73) respectively. Medical mechanism of abortion (use of abortifacients), recorded the highest number of complications, namely, incomplete and missed abortions (n= 69, and 67 respectively), table 5. This was followed by surgical mechanism which yielded frequency of 42 and 28 for incomplete and missed abortions respectively. Distribution of complications according to abortionist personnel (table 6) shows that Physicians recorded worse complications (n= 97) while Nursing personnel and Pharmacists followed closely (n= 89 and 75 in that order).

Table 1: Maternal and Gestational Age distribution of cases at Time of abortion

Maternal Age (years)	Number of Patients	Proportion (%)
13	5	1.6
14	10	3.3
15	10	3.3
16	32	10.7
17	86	28.7
18	110	36.7
19	47	15.7
Total	300	100
Gestational Age (weeks)		
≤4	90	30
5-6	78	26
7-8	70	23.3
9-10	35	11.7
11-12	21	7
≥13	6	2
Total	300	100
Frequency of Abortions		
1	78	26
2	70	23.3
3	50	16.7
4	45	15
5	38	12.7
6	16	5.3
7	3	1
Total	300	100

Table 2: Circumstances of the Complicated Illicit Abortions.

Facility offering Abortion/Abortionist	Number of Patients	Proportion (%)
Private Hospital/Doctor*	102	34
Nursing Home/Nurse	89	28.7
Pharmacy/Pharmacist	75	25
Herbal Home/Herbalist	24	8
Unspecified/Self	10	3.3
Presenting signs/symptoms		
Lower Abdominal/Pelvic Pain	230	43.5
Bleeding Per Vagina	220	41.6
Fever/Septicemia	36	6.8
Post abortion Amenorrhoea	43	8.1
Mechanism of Abortion		
Abortifacient/Medical	172	57.3
Surgical (D&C)	93	33
Herbal Use	35	11.3

*Claim not authenticated.

Table 3: Intrauterine Sonographic Findings in Patients Referred for Complicated Abortion

Sonographic Findings	Frequency	Proportion (%)
Incomplete Abortion	120	40
Missed Abortion	100	33.4
Anembryonic Sac/blighted Ovum	30	10
Failed Abortion	22	7.3
Endometritis/Pyometra	18	6
Normal Endometrium	9	3
Asherman's Syndrome	1	0.3
Total	300	100

Table 4: Correlating Clinical Signs/Symptoms with Ultrasound Findings

Presenting Signs/ Symptoms	Intrauterine Ultrasound Findings (n)					
	Incomplete Abortion	Missed Abortion	Anembryonic Sac	Failed Abort	Endometritis / Pyometra	Asherman's Syndrome
Vaginal bleeding	98	73	22	19	Nil	Nil
Abd/pelvic Pain	98	71	22	19	1	Nil
Fever/Septicaemia	13	16	5	2	Nil	Nil
Amenorrhoea	9	11	3	1	18	1

Abd: abdominal, Abort: abortion.

Table 5: Relationship between Mechanism of Abortion and observed Complications

Mechanism	Observed Complications					
	Incomplete abortion	Missed abortion	Blighted ovum	Failed abortion	Endometritis/pyometria	Asherman's syndrome
Medical	69(57.5%)	67(67%)	22(73.3%)	10(45.5%)	3(16.7%)	0(0.0%)
Surgical	42(35%)	28(28%)	8(26.7%)	3(13.6%)	11(61.1%)	1(100%)
Herbal	9(7.5%)	5(5%)	0(0.0%)	9(40.9%)	4(22.2%)	0(0.0%)
Total	120(100%)	100(100%)	30(100%)	22(100%)	18(100%)	1(100%)

Table 6: Distribution of Observed Complications According to Abortionist

Complications	Abortionist			
	Physician	Nurse	Pharmacist	Herbalist/Self
Incomplete Abortion	43(35.45%)	39(32.5%)	27(22.5%)	11(9.7%)
Missed Abortion	34(34%)	30(30%)	31(31%)	5(5%)
Blighted Ovum	10(33.3%)	11(36.7%)	9(30%)	0(0.0%)
Failed Abortion	2(9.1%)	6(27.3%)	5(22.7%)	9(40.9%)
Endometritis/Pyometria	8(44.4%)	2(11.1%)	3(22.7%)	5(27.8%)
Asherman's Syndrome	0(0.0%)	1(10%)	0(0.0%)	4(40%)
Total	97	89	75	30

Discussion

We found the highest number of complicated induced abortions, 110(36.7%) and 86(28.7%), among girls aged 18 and 17 years respectively. This may not be unconnected with the feeling of self-consciousness, desire to assert oneself and craving for “freedom” which obsesses the minds of young adults of this age group. Most of the complications, 238(80%), occurred within the gestational age range of 4 to 8 weeks probably due to the fact that majority of induced abortions are procured in the first trimester of pregnancy, as observed by a previous report [22]. Only 78(26%) of these teenagers were first timers to induced abortion, while as many as 222(74%) of them had had a range of 1-7 previous termination of pregnancies. The implication of this illegal practice to future reproductive health of these teenagers cannot be immediately known. Studies have shown that in spite the increased prevalence of premarital sex among adolescents, they rarely use contraceptives because of deep-seated cultural values, perceived risks of side-effects, and provider bias [23,24]. A previous survey reported that only 5% of adolescents with knowledge of contraception were users, whereas 85% of sexually active respondents were not bothered about contraception [25]. Another study reported that adolescents seem to have low perception of risks associated with abortion compared with contraception, hence their propensity to prefer abortion to contraception for fertility control [26]. For many girls, the risks associated with abortions are outweighed by the fears generated from an unplanned pregnancy. An earlier report [27] describes these as fears of parental disapproval, abandonment by a boyfriend or husband, financial and emotional responsibilities of childbearing, expulsion from school or inability to secure husbands if they have a child outside wedlock. We suggest that if abstinence fails a combination of moral

instructions and sex education on one hand and intensive advocacy at reduction of rate of unplanned pregnancy through contraception on the other may suffice. These are roles that parents, religious bodies and non-governmental organisations can play. Some researchers have canvassed for special services for adolescents in view of their peculiar circumstances and needs [1,18].

While many of the abortions were performed in private hospitals presumably by Physicians, a larger proportion (n= 198, 66%) was by non-physicians operating at Nursing Homes, Pharmacies/Chemists and Herbal Homes. Studies have shown that abortion service providers in Nigeria are either Medical Doctors in private hospitals or outright quacks [15,28]. Some of the abortions performed by the presumed medically qualified persons may have occurred in private homes, or places where aseptic rules may not have been followed [29,30].

In this study a good number of the subjects presented with lower abdominal/pelvic pain, or vaginal bleeding. This is not different from the findings of previous studies [6,22]. We found that the use of abortifacient was the most frequently adopted abortion method. This is not surprising since a larger proportion (66%) of the abortions were carried out in the first trimester and mostly by non-medically qualified persons. Hardly were any procedures done by manual vacuum aspiration which is associated with a leading safety profile [20].

A significant number of the subjects had retained products of conception, RPOC, (endometrial thickness was more than 15 mm or the presence of focal heterogenous contents detected by endovaginal ultrasonography.[31] Endometrial thickness is a commonly used parameter for detection of RPOC [32] which is marked by the presence of an irregular mass in the uterine cavity with or without a gestational sac or

recognisable foetal parts [33]. The nature of the various ultrasound findings in this study is not unconnected with the preponderance of unskilled abortionist personnel and their choice of abortion methods. A previous study has observed that in some cases women and adolescents may try to terminate their pregnancy by themselves or with the assistance of untrained personnel [34].

This study shows that Physicians, as a single category of abortionist personnel, recorded the highest number of complications (n= 97), followed by Nurses and Pharmacists (n= 89 and 75, respectively). This may not be a verdict for level of competence, but rather underpinned by level of patronage in which Physicians ordinarily attract most clients as observed herein. So the risks here may be proportionate to the number of clients handled by each personnel. Transvaginal assessment of the endometrium after abortion is important because clinical assessment alone is not capable of making an accurate assessment of the uterine status in most cases [35]. We observed that certain clinical signs and symptoms were common to multiple kinds of complications. Only transvaginal ultrasound could distinguish these and offer empirical evidence to guide and inform the management options [35]. A previous study has suggested that the incidence of incomplete abortion after curettage may be reduced through transvaginal sonography following uterine drainage during the first trimester of pregnancy.[36] Another study recommended transvaginal ultrasonography following surgical evacuation of abortion especially when done by junior staff, if gestational age exceeds 10 weeks, and if post-abortive bleeding results.[31] However we agree with a report that combining clinical and ultrasound evaluation protocols offer a higher sensitivity for the accurate diagnosis of RPOC.[37] Transvaginal ultrasound is useful for both initial evaluation of the post-abortive uterus and for follow-up of

treatment. The limitations of the present study include the inability to verify some of the claims of the subjects with respect to professional inclination and the fact that only one study centre was used.

Conclusions

Our study revealed that various conditions of the post-abortive uterus may present similar symptoms which only transvaginal ultrasound can help distinguish. Our most frequent ultrasonic findings in these patients were incomplete abortion and missed abortion, while use of abortifacients proved most risky.

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Conflict of interest.

We (authors) hereby declare that there was no any conflict of interest in the entire manuscript.