

Spontaneous abortions (miscarriages): Analysis of cases at a tertiary center in North Central Nigeria

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Abstract

Background: Spontaneous abortion (miscarriage) is a source of pregnancy loss globally. Its management, especially in low resource countries remains hampered by inadequate facilities for evaluation.

Objectives: To assess the clinical presentation, diagnosis, and treatment of cases of spontaneous abortion at a tertiary hospital in Ilorin, Nigeria.

Materials and Methods: A descriptive study of all spontaneous abortions (miscarriages) managed at the University of Ilorin Teaching Hospital, Ilorin, Nigeria between January 1, 2007 and December 31, 2011. The records were retrieved from the medical records department and necessary information retrieved.

Results: There were 603 miscarriages with a prevalence of 4.2%; incomplete miscarriage was the most common 254 (42.1%); 356 (59.0%) had no identifiable risk factor; 434 (72%) of the women were <35 years; 361 (59.9%) had first trimester miscarriages. 272 (45.1%) were of low parity (Para 0-1) and 223 (37%) were having a repeat miscarriage. Of the 141 managed for threatened miscarriage, pregnancy was salvaged in 90 (63.8%), 244 (40.5%) had surgical evacuation with 100% success rate while 218 (36.2%) had medical management with 90.8% success rate. The mean duration of admission was shortest with surgical management (2.03 ± 1.1 days) and post-abortion infection rate was 11 (2.6%). Histology confirmed product of conception in 98% and molar gestation in 2% of the samples; no mortality was recorded in this study.

Conclusion: More than half of women with miscarriages had no identifiable risk factors mainly due to limitation in facilities for evaluation; there is a need to improve facilities for investigating women with spontaneous abortions in developing countries to identify the causes of the losses.

Key words: Miscarriage, outcome, spontaneous abortion

Introduction

Abortion is the termination of pregnancy before fetal viability;^[1] it may be spontaneous or induced. In Nigeria, abortion is the termination of pregnancy before 28 weeks from the last menstrual period.^[1] Following the psychological association of the term "abortions" to mean induced abortions, they are now referred to as miscarriages in clinical practice.^[2,3] About 10-20% of all pregnancies end as miscarriages.^[1,4]

The diagnosis of miscarriage has traditionally been followed by surgical curettage on the assumption that this decreases the risk of possible infections,^[4] but in the last decade, effective nonsurgical alternatives have been advocated to reduce unnecessary curettage while still maintaining lower rates of morbidity and mortality.^[2,4] This has led to the emergence of expectant and medical management options. However, surgical evacuation remained the treatment of choice if bleeding is excessive, vital signs are unstable, infected tissue is present in the uterine cavity or if endometrial thickness is >50 mm.²

About 50% of first trimester miscarriages are due to chromosomal abnormality in the fetus^[4] and the miscarriage is nature's way of getting rid of it.^[5] However, identifiable risk factors include febrile illnesses such as malaria, urinary tract or lower genital tract infections, smoking, alcohol ingestion, chronic medical disorders,

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advanced maternal age, increasing parity, increasing paternal age, previous miscarriage, or anatomical problems such as uterine or cervical abnormalities.^[1] Maternal mortality is uncommon from miscarriages, but morbidities like psychological stress, hemorrhage, sepsis, secondary infertility and recurrent miscarriages can occur.^[2] In view of the large population of the womenfolk affected by this pregnancy complication and the possible attendant morbidities, it is imperative to have a periodic evaluation of management so as to offer better services.

Materials and Methods

This was a retrospective descriptive study carried out at the Obstetrics and Gynecology Department of the University of Ilorin Teaching Hospital, Ilorin Nigeria. The case files of all patients with miscarriages managed between January 1, 2007 and December 31, 2011 were retrieved from the medical records and data on age, parity, gestational age, predisposing factor, presenting complaints, history of previous miscarriages, diagnosis, management option and outcome, duration of hospital stay, complications and histology reports were evaluated.

The inclusion criteria used were all pregnant women with a diagnosis of miscarriage managed at the hospital during the study period.

Patient Evaluation and Management

In general, the pattern of management of patients with miscarriages in this center starts with a history taking followed by physical examination including a pelvic examination to assess the cervix and determine if the cervical Os was open or not. Pelvic ultrasound was routinely done for all the women to evaluate fetal viability and rule out cervical incompetence in addition to pelvic examination. Threatened miscarriage was diagnosed as bleeding per vaginam, ultrasound finding of a viable gestation with the cervical Os closed on pelvic examination. Incomplete miscarriage involved history of passage of fleshy materials and open cervical Os in addition to a nonviable gestation on ultrasound scan. In missed miscarriage, there were history of regression of pregnancy symptoms, closed cervical Os, and nonviable gestation on ultrasound scan.

Routine investigations done include packed cell volume, urinalysis, blood group and rhesus typing and any other test indicated by the peculiarity of the case. Rhesus negative women were offered 250 IU of anti-D (rhesus immunoglobulin) to prevent sensitization. Other investigations such as chlamydia screening and Group B *Streptococcus* culture were not routinely done in this center due to the lack of facilities for such investigations.

Expectant management involved bed rest and analgesia; medical management involved the use of vaginal

or rectal misoprostol or oxytocin infusion, while surgical management involved manual vacuum aspiration.

All women with miscarriages in this center except those with threatened miscarriage routinely have antibiotics (ciprofloxacin, erythromycin or amoxicillin with metronidazole) and counseling on contraception.

Specimen is usually sent to the Pathology Department of the hospital for histopathology examination, but there were no facility for karyotyping in this region.

Results of data were expressed as tables for comparison.

This study or a substantial part of it has not been published elsewhere before or is being considered for same. There was no conflict of interest in the conduct of the study.

Results

During the study period (January 1, 2007-December 31, 2011), there were 14,522 deliveries and 603 cases of miscarriages, giving prevalence of 4.2% (1 in 24 deliveries).

Table 1 shows that 434 (72%) of these women were aged <35 years while 169 (28%) were aged ≥35 years of age; 272 (45.1%) were (para 0-1) while 65 (10.8%) were para ≥5. Majority of the women had multiple presenting complaints but the most common was bleeding per vaginam in 528 (87.6%), followed by abdominal pain 367 (60.9%);

The most common type of miscarriage was incomplete miscarriage 254 (42.1%), followed by threatened

Table 1: Age, parity, symptoms and types of miscarriages

Parameter	Frequency	Percentage
Age (years)		
<35	434	72.0
≥35	169	28.0
Parity		
Para 0-1	272	45.1
Para 2-4	266	44.1
Para ≥5	65	10.8
Presenting complaints		
Bleeding per vaginam	528	87.6
Lower abdominal pain	367	60.9
Low back pain	288	47.8
Passage of products of conception	122	20.2
Reduced uterine size	52	8.6
Types of miscarriage		
Incomplete	254	42.1
Threatened	141	23.4
Inevitable	96	15.9
Missed	93	15.4
Complete	19	3.2

Some women had multiple presenting complaints

141 (14.1%), inevitable 96 (15.9%), missed 93 (15.4%), and complete miscarriage 19 (3.2).

Table 2 shows that there was no identifiable risk factor for miscarriage in 356 (59.0%) of the women. Among those identified, the commonest risk factor was febrile illness 101 (16.8%); others were drainage of liquor 96 (15.9%), co-existing uterine leiomyoma 16 (2.7%), anemia 8 (1.3%), hypertension 8 (1.3%), recent sexual intercourse 6 (1.0%), trauma to the abdomen 6 (1.0%), diabetes mellitus 4 (0.7%) and recent long journey. There were history of previous miscarriages in 223 (37.0%) of women while 380 (63%) had no such history giving a recurrence of 37%; also, 361 (59.9%) were first trimester miscarriages while 242 (40.1%) occurred in the second trimester.

In this study, 52 (8.6%) women had bed rest only, 494 (81.9%) had evacuation of product of conception, 542 (89.9%) had analgesics administered while 533 (88.4%) had antibiotics administered as specific treatments.

As could be inferred from Table 3, 244 (40.5%) women had surgical management with success rate 100%; 218 (36.2%) had medical management with 90.8% success rate, while 9.2% had surgical evacuation due to failure of medical management on account of retained product of conception. Of the 141 (23.4%) women with threatened miscarriage managed conservatively, 90 (63.8%) eventually had salvage and continuation of pregnancy, while

Table 2: Associated features of spontaneous abortions (miscarriages)

Associated features	Frequency	Percentage
Predisposing factor		
Febrile illness	101	16.8
Drainage of liquor	96	15.9
Uterine fibroid	16	2.7
Anemia	8	1.3
Hypertension	8	1.3
Sexual intercourse	6	1.0
Abdominal trauma	6	1.0
Diabetes mellitus	4	0.7
Long journey	2	0.3
History of previous miscarriage		
Yes	223	37.0
No	380	63.0
Time of pregnancy loss		
1 st trimester	361	59.9
2 nd trimester	242	40.1
No predisposing factor	356	59.0

Table 3: Definitive managements and outcome

Method	Frequency (%)	Success (%)	Failure (%)
Expectant	141 (23.4)	90 (63.8)	51 (36.2)
Medical	218 (36.2)	198 (90.8)	20 (9.2)
Surgical	244 (40.5)	244 (100)	0

51 (36.2%) progressed to incomplete miscarriage and subsequently lost the pregnancy.

Table 4 shows that the longest hospital stay was found in patients managed by expectant followed by surgical management with a mean of 6.0 ± 2.1 days, while the shortest was in those who had surgical management (2.03 ± 1.1 days).

In addition, 560 (92.9%) of cases had traceable histology reports of which 98% showed product of conception, while the remaining 2% were gestational trophoblastic disease.

As could be inferred from Table 5, the complications were anemia 74 (12.3%), post abortion sepsis 11 (2.6%), and anemia with hypovolemic shock 2 (0.3%). However, 511 patients (84.7%) had no complication and there was no maternal mortality from miscarriages.

Discussion

The prevalence of spontaneous abortion in this study was 4.2% this was low compared to estimate by most authors of 10-20%.^{11,14} This may be because this study was tertiary hospital based and a sizable proportion might have been managed at secondary, comprehensive and private hospitals which abound in this environment. In addition, most were <35 years and of low parity (0-2); this does not agree with reports that miscarriages are more common with advanced maternal age and high parity.¹⁵ The difference might be because this study encompasses both first and second trimester miscarriages; thus it included both those due to chromosomal abnormalities which are commoner in those >35 years and occurs commonly in the first trimester as well as those from other causes.

In this study, 1 in 3 women with a previous miscarriage are likely to have a repeat experience. This correlates

Table 4: Duration of hospital stay

Treatment	Mean hospital stay (days)
Surgical	
Medical	2.03 ± 1.1
Medical+surgical	2.84 ± 1.4
Expectant	3.18 ± 1.8
Expectant+surgical	4.73 ± 1.5
	6.0 ± 2.1

Table 5: Complications following spontaneous miscarriages (abortions)

Complications	Frequency	Percentage
No complication	511	84.7
Anemia	74	12.4
Post abortion sepsis	16	2.6
Anemia+hypovolemic shock	2	0.3

with findings of Buss *et al.*^[5] who reported that previous spontaneous abortion was a strong determinant in repeat spontaneous abortion. Stress was the identified predisposing factor in 0.2% of the women; this corroborates report of Griebel *et al.*^[13] that there is no clear association between miscarriage and stress. Recent sexual intercourse was recorded in 1.0% of women in this study; this implied that sexual intercourse does not elevate risk of pregnancy loss in women with uncomplicated pregnancies and was similar to reports from the USA by Griebel *et al.*^[13]

The various management options used were expectant, medical and surgical methods. The most common method used was surgical, this was because majority of our patients presented with significant vaginal bleeding. This agrees with recommendation that surgical management remain the treatment of choice in severe bleeding or unstable patients.^[5] Medical management with misoprostol in this study recorded a success rate of 90.8%, this was higher than the 53% success rate reported by Graziosi *et al.*^[6] in The Netherlands. Nevertheless it highlighted the usefulness of misoprostol in the management of miscarriages and its role in avoiding surgical evacuation. Weeks^[7] in his Reproductive Health Library commentary stated that vaginal misoprostol is an effective treatment for the termination of nonviable pregnancies before 24 weeks and that this is more likely to be beneficial in under-resourced settings because miscarriages due to maternal infection are likely to respond better to medical treatment than those resulting from genetic fetal abnormalities.

Success rate of managing threatened miscarriage by expectant management in this study was 63.8%; they were managed on bed rest, while those with identifiable risk factors had specific treatment for these factors. This brings to the fore the diversity in management of threatened miscarriage. Its management has remained empirical; though bed rest remained the most commonly used and sometimes progesterone have been used, there is little evidence to support their effectiveness.^[8] Giobbe *et al.*^[9] in evaluating the current use of bed rest in threatened miscarriage recorded that 16.5% eventually miscarried while Ben-Haroush *et al.*^[10] recorded pregnancy loss of 9.9% in a study in Israel. In addition, there is insufficient evidence in the literature to support use of muscle relaxants^[11] or progesterone,^[12] thus, there remained no consensus on its management. Sotiriadis *et al.*^[8] concluded that although there is no evidence that bed rest can affect the course of pregnancy in threatened miscarriage, abstinence from active environment for a couple of days may help women feel safer thus producing emotional relief. The high rate of losses in this study might be due to the fact that we have limited resources in client evaluation to manage treatable causes related to other non-routinely screened infections.

The duration of hospital stay depended on the management used. The longest hospital stay was in those initially on expectant management who subsequently had surgical evacuation due to failure of expectant management while the shortest hospital stay was in those who had surgical management. This was similar to the findings of Trinder *et al.*^[14] who recorded higher hospital stay in expectant and medical group as compared to surgical. This was corroborated by Weeks^[7] who reported that the longer time in expectant management might be frustrating as 11% of women on expectant management in his study eventually changed their mind and opted for surgical management.

The risk of infection following management for miscarriage has been an issue of concern; some centers use prophylactic antibiotics while others do not.^[8] In this study, infection rate was 2.6% was recorded; however, we gave routine therapeutic antibiotic except in cases of threatened miscarriages because tubal blockage from post abortion sepsis is a major reproductive health problem in developing countries. This value was similar to findings by Weeks^[14] who reported infection rate of 1.3% and Trinder *et al.*^[14] who reported infection rate of 2.3%. In addition, studies comparing medical with surgical management in areas where unsafe abortion is common like ours do not suggest a difference in infection risk although presumptive antibiotic is often given.^[14]

Histology reports confirmed product of conception in 98% of cases while 2% were diagnosed as molar gestation. This is the standard practice to confirm diagnosis and it helps in excluding ectopic pregnancy in which only decidua will be seen as well as unsuspected gestational trophoblastic disease.^[12] However, genetic studies were not performed because of nonavailability of the facility in this environment.

Conclusion

This study emphasizes the need for all stake holders to help health care practitioners in developing countries like ours with readily available facilities for better evaluation of women with miscarriages. These include karyotyping and infection screening for Chlamydia, Mycoplasma hominis, Toxoplasmosis and Group B Streptococcus; Lupus anticoagulant, antiphospholipid antibodies, and anticardiolipin antibodies.

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Introduction

The embryonic development of the fetus begins at fertilization and continues through the first trimester of pregnancy. The first trimester is the most critical period for the development of the fetus, and any disruption of the normal process can lead to miscarriage. Miscarriage is a common complication of pregnancy, affecting approximately 10-20% of pregnancies. The most common cause of miscarriage is chromosomal abnormalities, which can occur spontaneously or be inherited. Other causes include hormonal imbalances, uterine abnormalities, and infections. The management of miscarriage depends on the gestational age, the health of the woman, and her preferences. In this study, we aimed to analyze the outcomes of different management strategies for miscarriage.