Five-year review of cases of miscarriage in a tertiary hospital in Abakaliki, South East, Nigeria

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ABSTRACT

Background: Abortion complication is a major contributor to maternal morbidity and mortality.

Objective: To review the profile of cases of abortion in Federal Teaching Hospital, Abakaliki (FETHA).

Materials and Methods: This was a retrospective review of all cases of abortion managed in the Department of Obstetrics and Gynecology of FETHA between January 1st, 2013 and 31st December 2017.

Results: During the period, 3528 gynecological emergencies were recorded. Abortion represented 45.5% (1604) of all gynecological admission. The mean age of the women was 28.4 ± 6.4 years. All the pregnancies were unbooked and majority of abortion occurred between the gestational age of 8–12 weeks. More than half (58.8%) of the women had secondary education. Unsafe induced abortions were 547 (34.1%). Bleeding per vaginam (741, 46.2%) was the commonest symptom at presentation; majority had incomplete abortion. Interventions offered include manual vacuum aspiration (1319, 82.2%) and dilatation and curettage (157, 9.8%). Less than ten percent had laparotomy for pelvic abscess. Infectious morbidities were seen in 145 patients. Abortion complication constituted 11.5% of all maternal death during this period.

Conclusion: The study shows that abortion is one of the common gynecological emergencies recorded in the hospital. Provision and use of contraceptives by sexually active women will help to reduce the rate of unsafe abortions seen in our study. The morbidity and mortality associated with abortion can also be reduced by early presentation of the patients to the hospital with accurate diagnosis and prompt management.

Key words: Maternal mortality; sepsis; unsafe abortion.

Introduction

Globally maternal death remains an affront on womanhood. Every day, around 830 women die worldwide from complications related to pregnancy or childbirth. In 2015, it was estimated that more than 300 000 women die during the course of pregnancy and childbirth and it hoped by the world body that by 2030, as part of the Sustainable Development Goals, maternal mortality ratio should be less than 70 per 100 000 live births. Abortion and its complication constitute a frequent contributor to the cause of maternal morbidity and mortality, particularly in less developed countries of the world. Globally, approximately 7.9% (193 000), 4.7–13.2 of maternal deaths are due to complications of abortion and many of these deaths occur in sub-Saharan African countries.

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like Nigeria where abortion is legally restricted.\textsuperscript{[4]} Morbidity and mortality associated with abortion processes could result from spontaneous abortions but in majority of cases the mortality results from unsafe abortion.\textsuperscript{[3]} An estimated 1.25 million induced abortions occurred in Nigeria in 2012, equivalent to a rate of 33 abortions per 1000 women aged 15–49 with more than 200 000 women being managed for unsafe abortion with a high percentage developing complications.\textsuperscript{[4]} High unmet need for contraception\textsuperscript{[7]} and restricted abortion law in Nigeria\textsuperscript{[4]} might be a contributing factor.

Although the true incidence of spontaneous abortions is unknown, about 10% to 15% of clinically recognized pregnancies end in spontaneous abortion and the total pregnancy loss is estimated to be 30% to 50% of all conceptions.\textsuperscript{[8]} Such spontaneous abortions could be complete, incomplete, or complicated by infection. The cause of abortion varies but abnormal karyotype is present in approximately 50 to 70% of spontaneous abortions occurring during the first trimester.\textsuperscript{[8,9]} The incidence decreases to 20–30% in second-trimester losses. The first trimester losses are typically due to autosomal Trisomies or Monosomy X, whereas later losses reflect chromosomal abnormalities seen in neonates.\textsuperscript{[8,9]} Other possible causes include infection, anatomic defects, endocrine factors, immunologic factors, maternal systemic disease, poison, and trauma.

Post-abortion care is an important approach for reducing deaths and injuries from incomplete and unsafe abortions\textsuperscript{[10]} and their related complications, which have been reported to be very high in Nigeria.\textsuperscript{[6]} It is an integral component of comprehensive abortion care,\textsuperscript{[11]} which involves treatment of incomplete/unsafe abortion and its complications, provision of counseling services and responding to women’s emotional and physical health needs, and also prevention of future unwanted pregnancies and abortions via use of effective contraceptive. The approach also offers the woman access to reproductive health services and encourages community and service-provider partnerships in prevention of unwanted pregnancies and unsafe abortions. The developments of manual vacuum aspiration to empty the uterus and the use of misoprostol have improved the care of women. The aim of the study is to review the pattern and outcome of cases of abortion managed at Federal Teaching Hospital Abakaliki.

**Materials and Methods**

**Study area**

The study was carried out in Federal Teaching Hospital, Abakaliki. The hospital is a referral tertiary center and the only teaching hospital in the state. It receives referrals from the various primary and secondary health facilities in the states and neighboring states. Its Gynecological clinic is run daily by consultants and resident doctors with the help of trained nurses.

**Study design and population**

This was a retrospective descriptive study carried out at the Obstetrics and Gynecology Department of the Federal Teaching Hospital Abakaliki, Ebonyi State, Nigeria. The case files of all patients with miscarriages that were managed between January 1, 2013 and December 31, 2017 were retrieved from the medical records. Some of the data obtained from the case file were obstetrics and biodata of the patient, symptoms at presentation, clinical findings, type of abortion, management option and outcome, duration of hospital stay, and complications. The inclusion criteria used were all pregnant women with a diagnosis of miscarriage managed at the hospital during the study period. Ethical approval for the study was obtained from the Research and Ethics committee of the hospital.

**Patient evaluation and management**

Management of patients with miscarriages in our center involves admission into the gynecological emergency room, history taking, and physical examination to assess the clinical condition of the patient. Pelvic examination is also done to assess whether the cervical Os is open or not that will help in classifying the type of abortion. Threatened miscarriage is diagnosed as bleeding per vaginam, closed cervical Os, and ultrasound finding of a viable gestation. Diagnosis of incomplete miscarriage is made when there is history of passage of fleshy materials per vaginam with an open cervical Os in addition to a nonviable gestation on ultrasound scan. In missed miscarriage, there will be history of regression of pregnancy symptoms, closed cervical Os, and nonviable gestation on ultrasound scan. Diagnosis of complete abortion is made when there is history of bleeding per vaginam associated with passage of fleshy material in addition to a closed cervical Os, supported by ultrasound finding of empty uterus.

Abdominal ultrasound is done when clinically indicated and other routine investigations done include packed cell volume, urinalysis, blood group, and rhesus typing. Retroviral screening is also done after obtaining verbal consent following counseling. This will help in initiation of early referral to HIV/AIDS unit for early care for women who screened positive. Rhesus negative women are offered 1500 IU of anti-D to prevent sensitization. Medical management involved the use of vaginal misoprostol or oxytocin infusion, while surgical management involved manual vacuum aspiration and sometimes dilatation and curettage. Broad spectrum
antibiotics are given following evacuation and adequate analgesics. Blood transfusion is given based on the clinical status of the patient. Counseling on the importance of use of effective contraceptive is initiated and the women are referred to the Family Planning Unit for further counseling and offer of contraceptive. Specimen is usually sent to the Pathology Department of the hospital for histopathology examination.

Data analysis
The data obtained was analyzed using IBM SPSS Statistics version 20 (IBM Corp., Armonk, NY, USA). The results were presented in frequency tables, charts, and simple percentages.

Results
As shown in Table 1, the age range of the patients was 15 to 48 years. Those between ages of 20 and 29 years were 852 constituting 53.1% of all cases and those below 19 years were 114 (7.1%). Married women were 74.7% of all cases. Nulliparous women constituted 41.2% (661) of all cases. Only 34 (2.1%) women had no formal education. More than 60% of the women who had induced abortion are between the ages of 20 and 29. More than eighty percent of the women (1318, 82.2%) were aware and never used any method of contraception in the past. Only 157 (9.8%) women have used any modern method of contraception in the past while 128 (8.0%) women had no knowledge of contraception at all.

During the five-year study period, three thousand five hundred and twenty eight (3,528) gynecological cases were admitted and of these one thousand six hundred and four (1604) were abortion cases. Therefore, abortion consists 41.4% of all gynecological admissions. Missed abortions were 218 (13.6%), spontaneous abortions were 1057 (65.9%), and unsafe induced abortion complications were 547 (34.1%) as shown in Table 2. All the women who had unsafe induced abortion were single, not desirous of the pregnancy. Majority used misoprostol (62%) while others used high-dose quinine and insertion of foreign object via the cervix to achieve pregnancy termination. The services of patent medicine dealer were sort for these terminations.

Figure 1 shows cases of abortion managed in the hospital. The figure shows a decreasing number of cases of abortion seen in the facility with lowest rate of 0.08% (130) in 2015 before it started to increase to the highest rate of 28% (448) in 2017.

From Table 3, the commonest intervention offered the patients was Manual Vacuum Aspiration (MVA) and this was used to treat 1319 (82.2%) patients, while sharp dilatation and curettage (D and C) was used on 157 (9.8%) women. All the patients received antibiotics according to the Departmental protocol. One hundred twenty four women (124, 7.7%) had blood transfusion, while 128 (8.0%) women had laparotomy because of pelvic abscess. Eight hundred and eighty-nine patients (55.4%) were in-patients, while 715 (44.6%) were

| Variable                  | Frequency | Percentage |
|---------------------------|-----------|------------|
| Age (years)               |           |            |
| 19 and below              | 114       | 7.1        |
| 20-29                     | 852       | 53.1       |
| 30-39                     | 574       | 35.8       |
| 40 and above              | 64        | 4.0        |
| Total                     | 1604      | 100        |
| Marital status            |           |            |
| Married                   | 1198      | 74.7       |
| Single                    | 406       | 25.3       |
| Total                     | 1604      | 100        |
| Education                 |           |            |
| Nil                       | 34        | 2.1        |
| Primary                   | 301       | 18.8       |
| Secondary                 | 943       | 58.8       |
| Tertiary                  | 326       | 20.3       |
| Total                     | 1604      | 100        |
| Residence                 |           |            |
| Urban                     | 1503      | 93.7       |
| Rural                     | 101       | 6.3        |
| Total                     | 1604      | 100        |
| Religion                  |           |            |
| Christianity              | 1540      | 96.0       |
| Others                    | 64        | 4.0        |
| Total                     | 1604      | 100        |
| Parity                    |           |            |
| 0                         | 661       | 41.2       |
| 1-4                       | 685       | 42.7       |
| ≥5                        | 258       | 16.1       |
| Total                     | 1604      | 100        |
| Gestational age           |           |            |
| <8 weeks                  | 138       | 8.6        |
| 8-12 weeks                | 950       | 59.2       |
| ≥12 weeks                 | 516       | 32.2       |
| Total                     | 1604      | 100        |

| Types of Abortion          | Frequency | Percentage |
|----------------------------|-----------|------------|
| Incomplete Abortion        | 1134      | 70.7       |
| Missed abortion            | 218       | 13.6       |
| Threatened abortion        | 124       | 7.7        |
| Inevitable abortion        | 91        | 5.7        |
| Complete Abortion          | 37        | 2.3        |
| Total                      | 1604      | 100        |
| Distribution               |           |            |
| Spontaneous Abortion       | 1057      | 65.9       |
| Unsafe Induced Abortion    | 547       | 34.1       |
| Total                      | 1604      | 100        |
treated in the MVA room and discharged within 24 hrs. The duration of hospital stay by the patients ranged from 2–9 days; the total number of days spent by all the in-patients was 2,247 days.

The total number of maternal death related to complications of abortion was 10 and this represented 1.1% of all cases of abortion complications in the hospital during this period. Abortion complication constituted 11.5% of all maternal death during his period. The commonest complication of abortion observed was retained products of conception (incomplete abortion); this was seen in 500 women (55.0%). Hemorrhage was seen in 200 women (22.0%). These are represented in Table 4.

**Discussion**

Abortion whether spontaneous or induced is a reproductive health issue that could be associated with maternal morbidity and mortality. In our study, we retrospectively reviewed the pattern and outcome of cases of abortion in Federal Teaching Hospital, Abakaliki. During the period of review, 6294 deliveries occurred with one thousand three hundred and forty four gynecological cases being managed, out of which 522 were abortion cases. This consists 38.8% of gynecological admission and a prevalence rate of 1 in 12 deliveries. Induced abortion accounted for 34.1% of cases of abortion managed during the period under review. The above finding does not agree with the work of Adeniran et al.\[12\] in Ilorin where the prevalence of abortion was 1 in 24 deliveries. The difference in the rate between the studies might be attributed to study area and study population. The teaching hospital where the study was carried out is the major hospital in Abakaliki receiving the bulk of patients and could also be explained by the fact that the women might shy away from the Mission hospitals of hospital, especially those with induced abortion because of stigmatization.

From the study, the commonest type of abortion recorded was incomplete abortion (70.7%) followed by missed abortion and with complete abortion having the least frequency. As might be expected, bleeding per vaginam was the most clinical symptom as the majority of the women had incomplete abortion, which might explain the weakness that the patient had which accounted for the second commonest symptom. More than 10% of the clinical presentation was milky nipple discharge and decreasing uterine size which occurs following fetal demise as can occur in missed abortion. This occurred in 13.6% of diagnosis of abortion. The pyrexia that was recorded in our study was seen in those who had septic abortion. The modal frequency of some of abortion types in our study did not agree with the work of the Adeniran et al.\[12\] In their study, incomplete abortion accounted for the majority of clinical finding in 42.1% of cases unlike in our study, which is 70.7% but the incidence of threatened abortion is higher than 7.7% as seen in the current review. However, missed abortion was seen in 15.4% of the women which is comparable to our finding. Our finding concurred with earlier report that majority of abortion occurred at gestational age less than 12 weeks.\[12\]

Prompt management of abortion is crucial in preventing the possible complication that could arise. It has been estimated

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**Table 3: Clinical symptoms and treatment**

| Variable            | Frequency | Percentage |
|---------------------|-----------|------------|
| Symptoms            |           |            |
| Bleeding per vaginam| 741       | 46.2       |
| Weakness            | 258       | 16.1       |
| Nipple discharge    | 176       | 11.0       |
| Reduction in uterine size | 176      | 11.0       |
| Dizziness           | 147       | 9.2        |
| Fever               | 104       | 6.5        |
| Total               | 1604      | 100        |
| Treatment           |           |            |
| MVA                 | 1319      | 82.2       |
| Dilation and Curettage | 157    | 9.8        |
| Laparotomy          | 128       | 8.0        |
| Total               | 1604      | 100        |

MVA: Manual Vacuum Aspiration

**Table 4: Complications of abortion**

| Complication         | Frequency | Percentage |
|----------------------|-----------|------------|
| RPOC                 | 500       | 55.0       |
| Hemorrhage           | 200       | 22.0       |
| Infection            | 145       | 15.9       |
| Pelvic abscess       | 27        | 2.9        |
| Uterine perforation  | 15        | 1.7        |
| Gut perforation      | 8         | 0.8        |
| Renal failure        | 4         | 0.4        |
| Mortality            | 10        | 1.1        |
| Total                | 909       | 100        |

RPOC: Retained product of conception
that areas with limited access to abortion services like in
sub-Saharan Africa at least 9% of abortion-related admissions
are candidate of near-miss with a sizable portion ending in
maternal mortality.[13] The contribution of type-2 and type-3
delays to this dismal outcome is enormous in third world
countries[14] and should be prevented. The women who were
managed in our facility had emergency treatment including MVA
within an average of 1 to 2 hrs from the time of presentation,
while those with pelvic abscess had laparotomy after 12–24
hrs after stabilization. MVA is the major mode of emptying
the uterus. This does not agree with the work of Mellerup et al. in
Uganda where the commonest mode of treatment of women
admitted for abortion-related complication was dilatation
and curettage.[15] In our study D and C accounted for 9.8% of
evacuation of retained product of conception. The difference
in study population and hospital policy might be responsible
for the observed treatment given to the patients. We advocate
the use of MVA for the evacuation of retained product of
conception at gestational age of 12 weeks and below and
combination of MVA and use of ovum forceps (ovum forceps
for emptying the uterus before completing with MVA) in those
who presented at advanced gestational age. This is because of
perceived advantages of MVA over D and C.[16]

Complications from unsafe abortion remain endemic in
developing countries.[10,13] As defined by the World Health
Organization, unsafe abortion is a procedure for terminating
unwanted pregnancy either by persons lacking the necessary
skills or in an environment lacking the minimal medical
standards or borne.[17] It has been estimated that between
2010 and 2014, an average of 56 million induced abortions
occurred worldwide with the burden of unsafe abortion
being born by the developing countries like Nigeria where
induced abortion is illegal.[17] The finding from this study
shows that 178 women were managed as a case of unsafe
induced abortion giving a prevalence rate of 34.1%. The high
unmet need of contraception and use of less effective method
of contraceptives seen in our review are in tandem with
earlier report[18] and might predispose the study population
to increase number of unwanted pregnancies and therefore
resorting to criminal termination since abortion law in Nigeria
is restrictive.[4] This might explain the rate of induced abortion
seen among our study population, which is comparable to
the rate of 56.3% reported by da Ramos et al. in Brazil[19] but
markedly higher than other studies in Nigeria.[20] The plausible
reason for the difference with the work of Emechebe et al.
in Calabar[20] might be attributed to the study population as
only complicated cases of induced abortions were probably
referred to the hospital for expert care. The majority of the
women who had induced abortion in our study were single,
nuliparous and are below the age of 29 years, which agrees
with similar studies.[20,21]

Some of the complications of abortion seen in our study
include hemorrhage (22%), infection with pelvic abscess (19%),
uterine perforation (1.7%), and maternal mortality rate of
19.2 per 1000 abortion. These findings from our study
corroborate the findings from other studies that reported the
increased maternal morbidity and mortality associated with
abortion in developing economies.[13,20] Each year between
4.7% and 13.2% of maternal deaths can be attributed to
unsafe abortion.[17] Solving this problem requires several
complementary approaches which among others include
reduction of the high unmet need of the use of effective
contraceptive in our region present in our study, needed in
preventing unwanted pregnancies, liberation of abortion laws
although its contribution is questioned,[22] and provision of
post abortal care to women in need of it.[23]

Conclusion
In conclusion, this study has shown the great burden of
abortion-related complications in our environment and its
contribution to maternal death. Our study has also
highlighted the poor use of modern method of contraception
among the women despite good knowledge of contraception.
It is paramount then to improve awareness of its importance
in prevention of unwanted pregnancies and child spacing.
When women and their partners have access to a wide range
of contraceptive methods, they are better able to plan and
space their births. This leads to positive health, social, and
economic outcomes for women, families, and society. We
advocate the provision of emergency obstetric care services
to the reach of our obstetric population that will assist in
prompt management of pregnancies complicated by abortion.

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Conflicts of interest
There are no conflicts of interest.

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