

ORIGINAL RESEARCH

Obstetrics

Clinical characteristics and management outcomes of patients with hydatidiform mole in a national referral hospital in Kenya: A retrospective study

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Received: 13 March 2023; Revised: 9 August 2023; Accepted: 16 August 2023; Available online: September 2023

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Abstract

Background: Hydatidiform mole is a benign form of gestational trophoblastic disease with potential for malignant transformation. It is characterized by abnormal trophoblastic proliferation with placental villi vascular welling with or without embryo formation.

Objective: To determine patient clinical characteristics and management outcomes of hydatidiform mole diagnosed at Kenyatta National Hospital, Nairobi, Kenya.

Methods: A descriptive retrospective study design was employed. The medical records of patients admitted with a clinical diagnosis of hydatidiform mole at the Kenyatta National Hospital between January 2013 and December 2017 were retrieved. Data were collected using an abstraction tool, entered, and analyzed using the Statistical Package for Social Sciences (SPSS) version 22 (IBM, Armonk, NY, USA). Categorical data were summarized into frequencies and proportions and continuous data into means, standard deviations, medians, and interquartile

ranges.

Results: During the study period, 137 records of patients admitted and managed for hydatidiform mole were retrieved. Most, 110 (80%) and 97 (71%) patients were 20-34 years old and multiparous, respectively. The mean gestational age at presentation was 17 weeks (SD 7.4), and bleeding was the most common symptom in 105 (77%) patients. Only 46 (34%) patients had documented histological confirmation of the hydatidiform mole. None of the patients completed six months of follow-up; hence, there was no documentation of treatment outcomes.

Conclusion: In this study, the clinical presentation of the hydatidiform mole was relatively uniform, but the approach to definitive diagnosis, management, and follow-up was suboptimal and inadequately documented. Hence, management outcomes cannot be objectively determined.

Keywords: complete mole, hydatidiform mole, molar pregnancy, partial mole, trophoblast

Introduction

Gestational trophoblastic diseases (GTDs) are tumors that originate from the placenta (1-2). The incidence of GTD is higher in developing countries, in women aged below 20 and above 40 years, nulliparous, and those of low economic status (3-4). Gestational trophoblastic diseases are classified as hydatidiform mole and gestational trophoblastic neoplasia. Hydatidiform mole, also known as molar pregnancy, is a benign form of GTD with potential for malignant

transformation. The two types are partial and complete molar pregnancy. Patients with hydatidiform mole usually present with clinical features consistent with abortion, with bleeding being the most common symptom. Other symptoms may include the passing of grape-like vesicles, uterine enlargement, hyperemesis, early-onset preeclampsia, hyperthyroidism, and theca lutein cysts (5-9).

Ultrasonography is the first-line imaging method for the diagnosis of molar pregnancy, with a sensitivity of

44% and a positive predictive value of 48-53% (9-14). Ultrasound features include an enlarged uterus, intrauterine mass with cystic spaces (snowstorm or bunch of grapes appearance), absent fetal parts (for complete molar pregnancy), bilateral thecal cysts, and a high velocity with low impedance flow on color Doppler (6-7,11-12). Beta human chorionic gonadotropin (hCG) surveillance is critical for managing GTDs. Weekly monitoring of hCG levels is recommended until undetectable for 3 weeks, and then monthly for six months (1). Other laboratory investigations include coagulation assay, blood grouping, cross-matching, complete blood count, and thyroid and liver function tests (5). A definitive diagnosis of molar pregnancy is made by tissue histology. Suction evacuation is the preferred method of uterine evacuation for molar pregnancy, preferably performed under ultrasound guidance (12). Additional interventions may include the use of uterotonics during or after evacuation, sharp curettage performed 2 weeks after molar evacuation (13-14), combined oral contraceptive pills for contraception during follow-up hCG surveillance, and anti-D administration if the patient is Rhesus-negative (15). This study sought to determine the clinical characteristics and management outcomes of patients with hydatidiform mole admitted to a national referral hospital in Nairobi, Kenya.

Methods

Study design and setting

A descriptive retrospective study design was employed at Kenyatta National Hospital (KNH). KNH is Kenya's largest referral, teaching, and research hospital, with an 1800-bed capacity, and handles an estimated 12000-18000 deliveries annually.

Source of data

This study included the medical records of patients who were admitted for molar evacuation with a hydatidiform mole at KNH between January 1, 2013, and December 31, 2017.

Sample size determination and sampling procedure

Fisher's formula was used to calculate the sample size of 137. A consecutive sampling method was used until the desired sample size was achieved.

Data collection and analysis

Data were extracted from patient files. Data variables included age, parity, clinical features, treatment, follow-up, and management outcomes. Data were entered, cleaned, and analyzed using the Statistical Package for Social Sciences (SPSS) version 22 (IBM, Armonk, NY, USA). Categorical data were summar-

ized and presented as frequencies, proportions, and continuous data as means and standard deviations, medians, and interquartile ranges where applicable.

Ethical consideration

Ethical approval for this study was obtained from the Kenyatta National Hospital and the University of Nairobi Ethics Research Committee (registration number P742/12/2017). Administrative permission to access patient records was obtained from the KNH.

Results

During the study period, 285 electronic and manual files of patients admitted with a diagnosis of hydatidiform mole were retrieved. A total of 148 files were incorrectly coded for and therefore excluded from the study. 137 files were included in this study (Figure 1).

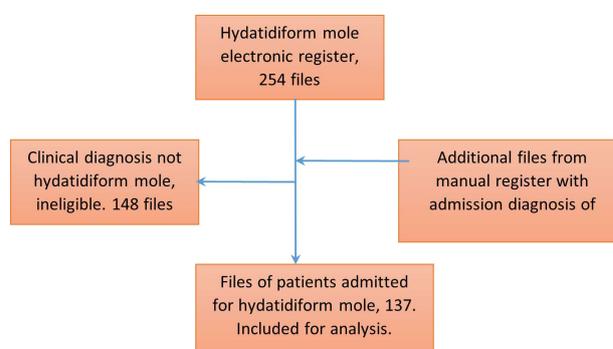


Figure 1: Study flow diagram of patients admitted and managed for hydatidiform mole at Kenyatta National Hospital

Sociodemographic and medical characteristics

Most, 110 (80%) and 97 (71%) patients were 20-34 years old and nulliparous, respectively. Of the cumulative previous pregnancies of all cases (n=262), only 3 (1.15%) had hydatidiform moles, whereas 189 (72%) were term pregnancies and 58 (20%) were abortions of unknown histology. The median gestational age at the time of presentation was 17 weeks (standard deviation (SD) 7.4, interquartile range (IQR) 7). The most common presentation symptom was vaginal bleeding in 105 (77%) patients, followed by 16 (11.7%), 8 (6%), 6 (4%), and 3 (2.2%) patients with hyperemesis, anemia, passed vesicles, and theca lutein cysts on pelvic ultrasound, respectively. The mean duration of symptoms was 14.8 days (SD 22.8) for bleeding and 13.9 days (SD13.1) for hyperemesis (Table 1).

Patients were admitted to the gynecology unit for a median duration of 4 (IQR 3) days. The mean duration from admission to definitive management was 3 (IQR 3) days. Most, 115 (84%) and 131 (96%) patients had preevacuation hCG test and pelvic ultrasound performed before admission, respectively. Other tests

included full hemogram, abdominal ultrasonography, chest X-ray, and thyroid function in 117 (85%), 4 (3%), 3 (2%), and 4 (3%) of all cases, respectively. The preevacuation hCG levels ranged between 15.51 and 333561mIU/ml, with a median level of 10,000-mIU/ml (IQR 7755). Suction evacuation, manual vacuum aspiration (MVA), and medical evacuation were performed in 125 (93.3%), 8 (6%), and 1 (1%) patients, respectively. During and after suction evacuation and MVA, additional management included administration of prostaglandin analogs, oxytocin, and blood transfusion in 28 (20%), 92 (67%), and 24 (18%) patients, respectively (Table 2).

Table 1: Sociodemographic and clinical characteristics of patients managed for hydatidiform moles at Kenyatta National Hospital

Variable	n (%)
Age (years)	
<20	6 (4)
20-24	35 (26)
25-29	42 (30)
30-34	33 (24)
35-39	12 (9)
>40	9 (7)
Parity	40 (29)
Nulliparous	42 (31)
Para 1	52 (38)
Para 2-5	3 (2)
Para >5	
Symptoms and signs at presentation	
Amenorrhea	13 (10)
Asymptomatic	14 (10)
Per vaginal bleeding	105 (77)
Passage of vesicles	6 (4)
Excessive vomiting	16 (12)
Theca lutein cysts	3 (2)
Uterine snowstorm appearance	2 (2)
Anemia	1 (1)
Mean duration of symptoms	
Vaginal bleeding (Mean (SD))	14.8 (22.8)
Excessive vomiting (Mean (SD))	13.9 (13.1)
Gestational age at presentation	
Median (IQR)	17 (7)
Mean (SD)	17.3 (7.4)
Outcomes of all previous pregnancies (n=262)	
Term birth	189
Hydatidiform mole	3
Miscarriage/Abortion	58

Following the evacuation, tissue histology, full hemogram, hCG evaluation, chest X-ray, and pelvic ultrasound were performed in 90(66%), 80(58%), 9(7%), 2(2%), and 4(3%) of all cases, respectively. Histological evaluation of the hydatidiform form was performed in most cases, 86 (63%), of whom 46 patients (34%) had a histological confirmation of molar pregnancy. A minority, 43 (32%) patients were complete molar pregnancies and 3 (2%) were incomplete molar pregnancies. A minority, 40(29%), tested negative for GTD while 51 (37%) files had no histological report. All patients were discharged and advised on follow-up

at the Gynecological Outpatient Clinic with a mean of 13.7 (SD4.8) days since the initial review. Postmolar evacuation sharp curettage was performed in 4 cases (3%), 59 (43%) were started on a combined oral contraceptive pill, and 85 (62%) of the patients had at least one subsequent hCG level performed. The median number of times that subsequent hCG levels were performed postevacuation was 1 (IQR 3) with a range of 0-11 times (Table 3).

Table 2: Management of patients with hydatidiform moles at Kenyatta National Hospital

Variable	n (%)
Duration of admission (Median (IQR))	4 (3)
Duration from admission to evacuation (Median (IQR))	3 (3)
Preevacuation hCG levels	115 (84)
Pelvic ultrasound	131 (96)
Other tests	
Full hemogram	117 (85)
Thyroid function	4 (3)
Abdominal ultrasound	4 (3)
Chest X-ray	3 (2)
Preevacuation hCG levels	
Median (IQR)	10000 (7755)
Range	15.51 - 333561
Uterine evacuation	
Suction curettage	125 (93)
MVA	8 (6)
Medical evacuation	1 (1)
Supportive management	
Blood transfusion	24 (18)
Oxytocin administration	
Oxytocin administered	92 (67)
Only during evacuation	54 (59)
During and after evacuation	2 (2)
Only after evacuation	36 (39)
Prostaglandin analogs administration	
Prostaglandin analogs used	28 (20)
Only during evacuation	1 (4)
During and after evacuation	7 (25)
After evacuation	20 (71)

hCG – human chorion gonadotrophin hormone; *MVA*: manual vacuum aspiration.

None of the patients with histological confirmation of hydatidiform mole had subsequent hCG levels monitored at KNH for the minimum recommended 6 months after the negative test; thus, treatment success and outcomes could not be determined from the available medical records (Figure 2).

Discussion

In this study, most of the patients were between 20 and 34 years, multiparous, presented with per vaginal bleeding at approximately 17 weeks of gestation, and were managed by suction evacuation. Approximately one-third of the patients had histological confirmation of the hydatidiform mole. The outcome of management was indeterminate for most patients, and the subsequent hCG evaluation for those who had confirmed hydatidiform mole was inadequate. This is comparable to a study in Southeast Nigeria, which re

Table 3: Postmolar evacuation management of patients with hydatidiform moles at Kenyatta National Hospital

Variable	n (%)
Postmolar evacuation tests	
Tissue histology	90 (66)
Beta hCG levels	80 (58)
Full hemogram	9 (7)
Chest X-ray	2 (2)
Pelvic ultrasound	4 (3)
Histological reports	
Negative for GTD	40 (29)
Complete hydatidiform mole	43 (32)
Partial hydatidiform mole	3 (2)
No histology report	51 (37)
GOPC follow-up at KNH recommended	
Interval duration of follow-up GOPC review	13.7 (4.8)
Mean (SD)	14 (6)
Median (IQR)	
Sharp curettage postmolar evacuation	
Done	4 (3)
Not done	133 (97)
Postmolar evacuation hCG monitoring for patients with histological confirmation of hydatidiform mole (n=46)	
Median number of times hCG was performed (IQR)	1 (3)
Mean number of times hCG was performed (SD)	1.8 (2.49)
Minimum recorded hCG tests per patient	0
Highest recorded hCG tests per patient	11
Patients monitored up to 6 months postmolar evacuation	0
Contraceptives recommended	
Natural methods	1 (1)
Combined oral contraceptives	59 (43)
Progestin-based contraceptives	1(1)

hCG: human chorion gonadotrophin hormone; GOPC: gynecological outpatient clinic; GTD: gestational trophoblastic disease.

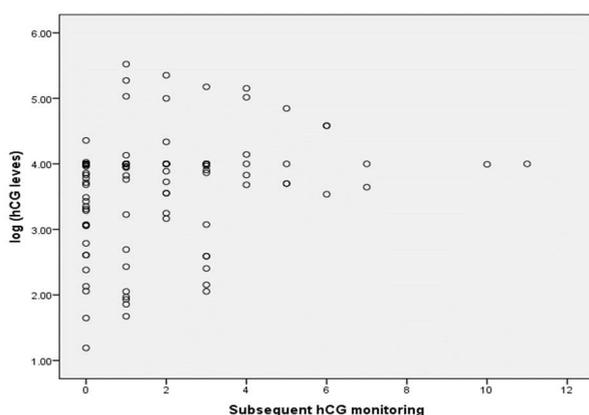


Figure 2: Weekly hCG regression logs for postmolar evacuation serial hCG levels in patients with histological confirmation of hydatidiform moles at Kenyatta National Hospital

ported about one-third of the patients being nulliparous with a mean gestational age at presentation of 14.7 weeks (16). However, a Brazilian study reported a low median gestational age at evacuation of 9 weeks (17), with early diagnosis and intervention attribut-

able to early pelvic ultrasound. Low literacy levels and limited access to ultrasound may be attributed to delayed diagnosis in low- and middle-income countries (18). Similar to this study, bleeding was the most common symptom reported in other studies (16-17). One in two women with an abnormal scan would have a disease confirmed by histology (6). In this study, only one-third of the patients with a radiological diagnosis of molar pregnancy had available records confirming the histological diagnosis of hydatidiform mole.

Most patients in this study were managed with suction evacuation according to the recommended national guidelines for cancer management (13). To monitor treatment success, postmolar evacuation hCG levels should be performed weekly until three negatives are recorded, then monthly for six months. However, this study found that the recommended schedule for follow-up was not adhered to, and therefore, treatment success could not be determined. Six (4.4%) patients who had subsequent hCG levels monitored were found to have a plateau or rise in subsequent hCG levels and were treated for gestational trophoblastic neoplasia.

The study is strengthened by the fact that it is the index descriptive study on molar pregnancy in Kenya and that it highlights the existing management gaps of patients; hence, it is likely to positively impact future patients and data management. However, this study was not without limitations. Poor record-keeping and missing data significantly limited this study. To counter this, missing data from each variable was assumed to have occurred through missing completely at random (MCAR) mechanisms, and therefore complete case analysis was applicable.

Conclusion

In this study, the clinical presentation of the hydatidiform mole was relatively uniform, but the approach to definitive diagnosis, management, and follow-up was suboptimal and inadequately documented. Hence, management outcomes cannot be objectively determined.

Recommendations

Improvement in documentation and record-keeping, and the development of follow-up tools are critical to objectively assess the management outcomes of patients with hydatidiform mole. Patient education and increasing access to ultrasound services are also key for the early diagnosis and management of molar pregnancies.

Availability of data

The source document is available online at the University of Nairobi repository

(<http://erepository.uonbi.ac.ke/handle/11295/109198>).

Acknowledgments

Not applicable.

Declarations

Conflict of interests

The authors declare no conflicts of interest.

Funding

This study was self-funded.

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