

Clinicohistological Correlation and Cost-effectiveness of routinely performed Histological Examination of Pregnancy Tissues obtained at Uterine Evacuation Procedure: Five-year Experience at a Secondary Care Hospital of Karachi, Pakistan

¹Zaibunnisa Memon, ²Naureen Anjum, ³Sana Sadiq Sheikh

ABSTRACT

Aim: To assess clinicohistological correlation and cost-effectiveness of routinely performed histological examination of pregnancy tissue samples collected at surgical uterine evacuation

Materials and methods: In this retrospective study, medical record of patients admitted for incomplete miscarriage, missed miscarriage, and anembryonic miscarriage in the first trimester from January 2010 to August 2014 were reviewed. Histopathologic diagnosis of the tissue samples obtained via surgical uterine evacuation in these patients was compared with the preevacuation diagnosis.

Results: Specimens of 711 patients were sent after uterine evacuation. Histopathologic examination revealed normal product of conception in 681 patients (95.7%), while partial hydatidiform mole was diagnosed in 14 patients (1.9%). Complete hydatidiform mole was detected in only three cases (0.42%). Decidual tissue without chorionic villi was reported in 13 patients (1.8%). The diagnosis of complete mole was suspected in all three cases and in six cases of partial mole before procedure.

Conclusion: Findings of study did not show any diagnostic and financial benefit from routine histological examination of tissue removed at termination of pregnancy or emergency uterine evacuation. We recommend that histopathological examination be performed in cases where the diagnosis is uncertain, fewer tissues obtained during evacuation, when molar pregnancy is suspected, or when patients are considered at high risk for trophoblastic disease.

Keywords: Gestational trophoblastic disease, Miscarriage, Molar pregnancy.

How to cite this article: Memon Z, Anjum N, Sheikh SS. Clinicohistological Correlation and Cost-effectiveness of routinely performed Histological Examination of Pregnancy Tissues obtained at Uterine Evacuation Procedure: Five-year Experience at a Secondary Care Hospital of Karachi, Pakistan. *J South Asian Feder Obst Gynaec* 2017;9(1):1-4.

Source of support: Nil

Conflict of interest: None

Date of received: 17 August 2016

Date of acceptance: 09 November 2016

Date of publication: January 2017

INTRODUCTION

Miscarriage is one of the most common first trimester conditions seen by obstetricians and gynecologists. Approximately 10 to 20% of clinical pregnancies end up in first trimester miscarriage.¹

In majority of health centers, it is a routine practice to send tissues obtained by uterine evacuation for histopathological examination for confirmation of pregnancy tissue and to rule out trophoblastic pregnancy. The rationale behind this practice is to detect an ectopic pregnancy, which requires further follow-up management, or exclude molar pregnancy, which necessitates special follow-up. The other approach is to examine the products and when there is uncertainty about the diagnosis, either before or during procedure, only then the tissues are sent for histopathological examination.^{2,3}

There is a legal aspect related to this practice as well.⁴ Inappropriate follow-up of trophoblastic disease, missed ectopic pregnancies, and heterotrophic pregnancies have potential risk of complications and can lead to claims of negligence.

There is little or no agreement about the value of submitting tissue for histological examination. International guidelines are available as to address its significance and cost-effectiveness. The National Institute for Health and Care Excellence guideline recommends only a home pregnancy test after 3 weeks.

Most recently, published data are still not recommending routine histopathological examination of products.⁵

In a country like Pakistan where cost is a major concern for the patients, its value is even more debatable. At our institution, the retained products of conception passed spontaneously or removed during surgical or

¹⁻³Senior Instructor

¹⁻³Department of Obstetrics and Gynecology, Aga Khan University Hospital, Karachi, Sindh, Pakistan

Corresponding Author: Zaibunnisa Memon, Senior Instructor Department of Obstetrics and Gynecology, Aga Khan University Hospital, Karachi, Sindh, Pakistan, Phone: +02136323465 e-mail: zaib.nadeem@aku.edu

medical evacuation are routinely sent to histopathological examination. As there is no agreement, we aimed to study this practice of routine histopathological examination of tissues obtained for its clinical significance in our institute.

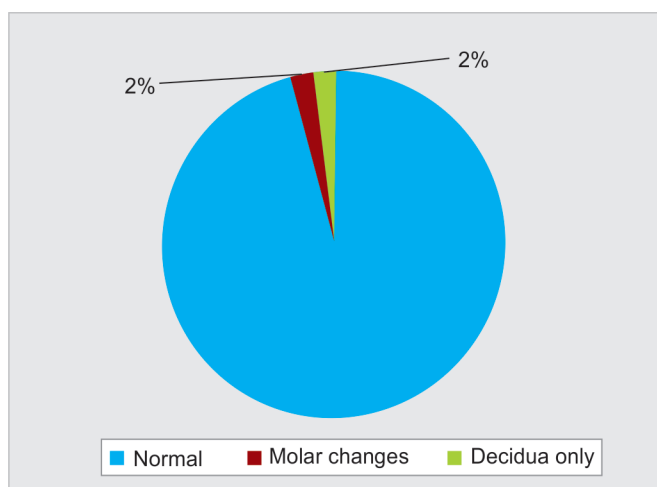
MATERIALS AND METHODS

A retrospective record review of 818 cases was conducted at Aga Khan University Hospital, Karimabad Campus, Karachi, Pakistan. Medical records of all dilatation and evacuation procedures that occurred from January 2010 to August 2014 were reviewed. In this study, histopathologic diagnosis of the tissue samples obtained via surgical uterine evacuation in patients who were admitted with the diagnosis of incomplete miscarriage, missed miscarriage, and anembryonic miscarriage in the first trimester was recorded. In cases where molar pregnancy or no chorionic tissues were reported histologically its clinical correlation will be compared with the preevacuation diagnosis. Frequency analysis was carried out using Statistical Package for the Social Sciences version 22. Ethical approval to review these cases has been taken from the ethical review committee of Aga Khan University Hospital.

RESULTS

A total of 818 women underwent Dilation and evacuation procedure from January 2010 to August 2014. Specimens sent for histopathology were 711 (86.9%) while in 107 (13%) patients specimen was not sent because of physician’s choice or patient’s refusal. Histopathology results in 680 (95.6%) patients were showing normal products of conception, molar tissue was seen in 17 (2.3%) patients, and 14 (1.9%) patients were reported to have decidual tissues only (Graph 1).

Clinical notes of molar and decidual only patients were reviewed to see correlation of preprocedure diagnosis.



Graph 1: Histopathology result of dilation and evacuation procedure

The mean age was 27.7 ± 4.5 years in women with molar disease. Among the women with molar changes, majority (70.6%) of them were multigravida. Recurrence of molar was seen in only one patient (5.9%). The most common presenting symptom was bleeding which was seen in 52% of patients, and 48% patients were asymptomatic at the time presentation to hospital. All of them presented in the first trimester, majority of them (84.4%) were between 6 to 12 weeks of gestation. Missed miscarriage was diagnosed in 82.4% of women. Preevacuation diagnosis of molar was suspected on ultrasound in half of the patients (52.9%). Preevacuation beta human chorionic gonadotropin (hCG) was performed in only 35% of patients. Major blood loss (>1000 mL) was seen in 11.8% of patients. The diagnosis of complete mole was seen in 3 (17.6%) patients out of 17 molar pregnancies and 0.4% of all procedures (Table 1).

All patients had their first follow-up in the clinic after the evacuation; however, only 64.7% of patients have completed their follow-up after evacuation till beta hCG was negative. The total time duration after the procedure and beta hCG decline to negative was 3 months (Table 2).

Medical records of 13 patients with decidua only were reviewed. Of these, 5 (38.4%) patients completely aborted before they underwent evacuation probably because misoprostol 400 microgram was given for cervical ripening, or they had bleeding before procedure. Remaining 8 (61.5%) patients had small gestational sac without yolk sac on ultrasound. Scanty tissues were obtained in all

Table 1: General characteristics of women with molar pregnancy

Variables	Parameters	Frequency (%) Mean \pm SD n = 17
Age		27.7 \pm 4.5
Gravida	Primigravida	5 (29.4)
	Multigravida	12 (70.6)
Recurrent mole	Yes	1 (5.9)
	No	16 (94.1)
Bleeding	Yes	9 (52.9)
	No	8 (47.1)
Gestational age at miscarriage	6–9 weeks	8 (47.1)
	10–12 Weeks	6 (35.3)
	13–14 Weeks	3 (17.6)
Type of miscarriage	Missed	14 (82.4)
	Incomplete	3 (17.6)
Ultrasound scan findings	Missed miscarriage	8 (47.1)
	Molar pregnancy	9 (52.9)
Preevacuation diagnosis of molar	Yes	9 (52.9)
	No	8 (47.1)
Blood loss at evacuation	Minimal	7 (41.2)
	100–500 mL	8 (47.1)
	>1000 mL	2 (11.8)
Histopathology report	Partial mole	14 (82.4)
	Complete mole	3 (17.6)

Table 2: Postevacuation follow-up

Variables	Follow-up	Frequency (%) n = 17
First follow-up visit	1 week	11 (64.7)
	1–2 weeks	5 (29.4)
	After 2 weeks	1 (5.9)
Postevacuation hCG level	1 week	12 (70.6)
	2 weeks	5 (29.4)
Complete follow-up	Yes	11 (64.7)
	No	6 (35.2)
Time to become beta hCG negative after evacuation	1 month	5 (45)
	2 months	5 (45)
	3 months	1 (10)

these patients at the time of procedure and were sent for histopathology.

All of these patients had follow-up postprocedure either with beta hCG or clinically, and were found asymptomatic.

DISCUSSION

Miscarriage is a common condition, and evacuation of products of conception is the most frequently performed procedure in its management.⁶ It is important that the correct diagnosis of this condition should be made and the conditions like ectopic pregnancy and gestational trophoblastic diseases should not be missed, as proper follow-up is required for such patients.^{2,7} For diagnosis and differential diagnosis of these conditions, ultrasound quantitative serum beta hCG and histopathological examination of products of conception are the diagnostic tools. The practice of routine histological examination of tissues obtained at evacuation has been the subject of debate in the literature for past many years. There are no evidence-based international guidelines on this clinical issue.^{1,8} The most important indication to send histopathology test is to exclude gestational trophoblastic disease, ectopic pregnancy, and some authorities recommended it for medicolegal reasons. The commonest indication of this examination is hydatidiform mole.^{8,9}

The molar pregnancy is first suspected on ultrasound examination followed by confirmation on histopathological examination. The diagnosis of complete mole can be made with accuracy by ultrasound, but partial mole can be missed. The overall sensitivity of ultrasound for predicting complete hydatidiform was 44 to 95% and for partial hydatidiform was only 20%.¹⁰ In our study, 9 (52.9%) patients were suspected to have molar pregnancy before evacuation. The diagnosis of complete mole was suspected in all 3 (17%) cases before evacuation procedure, while only 6 (35.2%) cases of partial mole were suspected before procedure. Hence, the diagnostic accuracy

of ultrasound and beta hCG test for complete mole was 100% in our study. The accurate diagnosis of complete mole has some significance for follow-up and future pregnancy planning while the significance of partial mole is disputed as it has very rare risk of progression to malignant gestational trophoblastic disease. The risk of gestational trophoblastic disease is higher for complete mole (15–20%) than partial mole (1–5%).¹¹

In our study, molar pregnancy is low and majority of cases were partial mole. Decidua only was the second commonest diagnosis where no pathology was seen on follow-up. In view of these two diagnoses of unclear clinical significance in patient management and follow-up, it is unreasonable to perform histopathological examination on all patients.

The cost of a histopathological examination at institution where study was conducted is 3000 Pakistani rupees. Despite having a public health system in Pakistan, at many times people have to pay out of pocket for health care. This review was carried out at a secondary care setup where a majority of patients belong to middle or lower middle class. With only 0.4% cases of complete mole, it is not cost-effective to send routine histopathology of retained products of conception.

CONCLUSION

Based on study findings, it is not recommended that routine histopathological examination should be performed on each patient. It should only be performed when the diagnosis is uncertain preoperatively, scanty tissues obtained, ultrasound suggests a molar pregnancy, patients are considered high risk for trophoblastic disease, or gross examination of tissues suggests unexpected pathology.

ACKNOWLEDGMENT

The authors wish to express their sincere gratitude to Dr. Sarah Rafiq, research officer of the Department of Obstetrics and Gynecology, for helping in data retrieval.

REFERENCES

1. Hinshaw K, Fayyad A, Munjuluri P. The management of early pregnancy loss. RCOG Revised Guideline 2006.
2. Fram KM. Histological analysis of the products of conception following first trimester abortion at Jordan University Hospital. *Eur J Obstet Gynecol Reprod Bio* 2002 Nov;105(2): 147-149.
3. Heath V, Chadwick V, Cooke I, Manek S, MacKenzie IZ. Should tissue from pregnancy termination and uterine evacuation routinely be examined histologically? *BJOG* 2000 Jun;107(6):727-730.
4. Bagshawe KD, Lawler S, Dent J, Brown P, Boxer GM, Paradinas FJ. Gestational trophoblastic tumours following initial diagnosis of partial hydatidiform mole. *Lancet* 1990 May;335(8697):1074-1076.

5. Alsibiani SA. Value of histopathologic examination of uterine products after first-trimester miscarriage. *Biomed Res Int* 2014;2014:863482.
6. Schorge, JS; Halvorson, LM; Hoffman, BL; Bradshaw, KD; Cunningham, FG. First trimester abortion. *Williams Gynecology*. 1st ed. New York: McGraw-Hill; 2008.
7. Berkowitz RS, Goldstein DP. Clinical practice. Molar pregnancy. *N Engl J Med* 2009 Apr;360(16):1639-1645.
8. Fulcheri E, di Capua E, Ragni N. Histologic examination of products of conception at the time of pregnancy termination. *Int J Gynaecol Obstet* 2003 Mar;80(3):315-316.
9. Tasci Y, Dilbaz S, Secilmis O, Dilbaz B, Ozfuttu A, Haberal A. Routine histopathologic analysis of product of conception following first trimester spontaneous miscarriages. *J Obstet Gynaecol Res* 2005 Dec;31(6):579-582.
10. Kirk E, Papageorghiou AT, Condous G, Bottomley C, Bourne T. The accuracy of first trimester ultrasound in the diagnosis of hydatidiform mole. *Ultrasound Obstet Gynecol* 2007 Jan;29(1):70-75.
11. Berkowitz RS, Goldstein DP. Current advances in the management of gestational trophoblastic disease. *Gynecol Oncol* 2013 Jan;128(1):3-5.