Original Article

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Hydatidiform Mole: Histological Types and Age Distribution in Basrah

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ABSTRACT

Background Hydatidiform mole (HM) is a placental pathology, which is a form of gestational trophoblastic disease (GTD). HM is classified into complete hydatidiform mole (CHM) and partial hydatidiform mole (PHM). The incidence of molar pregnancy varies according to the geographical area. It is found to be higher in developing countries. Age is a risk factor for developing HM. In this study, we aim to determine the frequency of hydatidiform mole among cases of early trimester evacuation specimens and its relation to patient's age at Basrah maternity and paediatric hospital and Al- Mosawi private hospital.

Method This was a descriptive retrospective study for a four-year period; all cases of early trimester evacuation specimens were from January 1, 2017, to December 31, 2020. All specimens were fixed in 10% formalin and dehydrated in graduated alcohol, (5) micron thickness sections were obtained, stained with hematoxylin and eosin and examined, and cases of CHM, PHM and RPOG were analyzed.

Result A total of 216 evacuation specimens were examined, and the patients age ranged from 14–50 years. Among these, 78.2% of patients were between 20 and 30 years. The percentage of RPOC was 54.2%, while that of CHM was 19.4% and that of PHM was 26.4%. The maximum cases of complete and partial mole were in the 20–30 years age group.

Conclusion The frequency of HM was high compared to many other studies.

Keywords: Hydatidiform Mole, miscarriage, abortion, histopathology

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INTRODUCTION

Hydatidiform mole (HM) is a placental pathology, which is a form of gestational trophoblastic disease (GTD) that involves villous formation that is histologically characterized by hydropic changes and trophoblastic proliferation, which affects the chorionic villi either completely or partially. HM is classified into complete hydatidiform mole (CHM) and partial hydatidiform mole (PHM) according to clinical, histopathological and genetic differences.[1]

HM is considered the premalignant type of GTD, and it is important both clinically and epidemiologically because of its impact on women's health.[2]

CHM is considered more important clinically than PHM because it has higher propensity for persistence or progression for choriocarcinoma – about 15–20% – while the same is only <5% for PHM.[3]

The incidence of molar pregnancy varies according to the geographical area. It is found to be higher in developing countries. Age is a risk factor for developing HM. People aged under 20 and over 40 contribute to a higher incidence. Nutritional factors and socioeconomic factors also contribute to a higher incidence; it was found to be higher in areas with folate, protein and vitamin A deficiency.[4]

HM can be detected in early pregnancy using ultrasound and serial monitoring of BHCG. However, HM and retained products of conception (RPOC) cannot be distinguished sonographically despite some specific sonographic characteristics, so to reach an accurate diagnosis of HM, RPOC and GTD, every evacuation specimen should be submitted for routine histopathological assessment, which can be difficult and needs an expert pathologist.[5-8]

MATERIALS AND METHOD

This is a cross sectional study, which included cases of early trimester miscarriage. The study was carried out during the period from January 1, 2017 to December 31, 2020. Specimens of first trimester curetted materials were received and processed in the department of histopathology in Basra maternity and pediatric hospital as well as Al-Moosawi private hospital.

The specimens were fixed in 10% formalin, dehydrated in graduated alcohol, embedded in paraffin wax and (5) micron thickness sections were obtained.

The sections were stained with hematoxylin and eosin and were examined by 2 histopathologists for the diagnosis of CHM, PHM and RPOC.

The results were analyzed for age distribution and histological type of HM (complete or partial).

All obtained data were analyzed using Excel 16 and IBM SPSS (version 22).

RESULTS

A total of 216 cases were included in this study, with patients' age ranging from 14–50 years. Among these, 49% of patients were between 20 and 30 years (105 cases), and 30% of cases were between 31 and 40 years (Table 1).

Table 1: Age distribution of patients.

Age group	Number	Percentage
14-19	30	13.8
20-30	105	48.61
31-40	64	29.62
41-50	17	7.87
Total	216	100

From the total of 216 histopathogical specimens examined in this study, 117 cases (54.2%) were diagnosed as RPOC, 57 cases (26.4%) were PHM, and 42 cases (19.4%) were CHM (Table 2).

Table 2: Histopathological diagnosis of evacuation specimens.

Case	No.	Percentage
RPOC	117	54.2
PHM	57	26.4
CHM	42	19.4
Total	216	100

It was seen that 96 cases (82%) with RPOC and 44 cases (77.2%) CHM were in the age group between 21 and 40 years.

Additionally, 9.42% (11/117) of cases with RPOC, 17.54% (10/57) of cases with PHM, and 21.42% (9/42) of cases with CHD were teenagers (Table 3).

Table 3: Age distribution for each condition.

Age	RPOG		PHM		CHM	
	No.	%	No.	%	No.	%
13-19	11	9.42	10	17.54	9	21.42
21-30	60	51.28	30	52.64	15	35.72
31-40	36	30.76	14	24.56	14	33.33
41-50	10	8.54	3	5.26	4	9.53
	117	100	57	100	42	100

DISCUSSION

There is an obvious variation in the reported frequencies of hydatidiform mole all over the world. In Jordan, the percentage of RPOC was 66% compared to 17% partial mole and only 1% of hydatidiform mole.[9] The percentage of RPOC in Saudi Arabia was 96.2% and that of molar pregnancy was 0.4%.[10] In Nepal, the percentage of RPOC was 75% and that of molar pregnancy was 11.25%.[11]

Similar variations were found in different districts in Iraq. In Erbil maternity hospital, the percentage of RPOC is 86.6% and those with PHM was 4%, while that with CHM is 0.2%.[12] Another study performed in Duhok found that the percentage of molar pregnancy was 0.095%.[13]

In our study, the percentage of RPOC was 54.2%, while that of CHM was 19.4%, and that of PHM was 26.4%, which is relatively high compared to other studies, some of this variabilities can be explained by differences in methodology (single hospital against population-based studies).

The true incidence may be lower than this hospital-based study, probably because of a selection of cases depending on ultrasound and other diagnostic procedures. Additionally, not all curetted material were sent for histopathological evaluation, because there are many methods used to diagnose the type of miscarriage, such as ultrasound, beta human chorionic gonadotrophic hormone (BHCG) level, and histopathological examination of evacuation products.

There is a disagreement about histopathological examination of curetted material in early trimester miscarriage. Some authors recommend submission of all specimens to confirm pregnancy and to diagnose gestational trophoblastic disease, while others recommend against the routine histopathological examination of these specimens and suggest to restrict it only for uncertain pre-evacuation diagnosis, although it is a reliable method to diagnose Hydatidiform mole.[14-17]

Many early trimester abortions were not recorded and not confirmed even by the patients and mistaken as delayed period. This also could explain the increase in the frequency of HM compared to RPOC, so the true incidence could not be evaluated unless the total number of pregnancies is calculated, which is not accessible for the period of the study, and all abortion specimens are histopathologically examined.

Regarding the age percentage, 78.2% of the patients included in this study were in the age group 20-40yrs.

The maximum cases of complete and partial mole were in the same age group, which is considered the period of maximum fertility. However, 21.4% of cases with CHM and 17.5% of cases with PHM were below 20 years of age, compared to 9.4% of cases of RPOC, which can be explained by early marriage in our society. This finding is supported by other studies that indicate that the risk of HM is higher below the age of twenty.[18-20]

CONCLUSION

The frequency of HM was high compared to many other studies, due to preoperative selection of specimens for histopathological examination or methodology differences.

RECOMMENDATIONS

A population-based study to determine the true incidence of molar pregnancy is recommended. Additionally, it is recommended that all abortion specimens be sent for evaluation to prevent the misdiagnosis of gestational trophoblastic disease and to ensure proper treatment and follow up to prevent complications.

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