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ORIGINAL ARTICLE

Audit of Partial and Complete Hydatidiform Moles in Tertiary Care Hospital JPMC, Karachi

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ABSTRACT

Objective: This study aims to investigate the clinical presentation, frequency and histopathology of hydatidiform mole, as well as to determine the clinical significance of such histopathological examination.

Material and method: This was a retrospective study undertaken at the Department of Pathology Bmsi Jpmc Karachi from January 1st, 2016 to November 31st, 2021.All molar pregnancy cases were thoroughly examined, taking into account their age, gestational age, signs and symptoms, clinical diagnosis where available and histopathology.

Results: Total 73 cases of hydatidiform moles were obtained during study period. There were 64.3% partial hydatidiform moles and 35.6 % complete moles. The majority of the patients were between the ages of 21 and 35 years. Bleeding per vaginum was the most prevalent presenting symptom. The period of gestation in majority of patients (54.7%) was 2–5 months.

Conclusion: We came to the conclusion that partial mole was more common than complete mole .Histopathlogical findings of PHM differ from CHM.The diagnosis of molar pregnancy is helped by histopathological study of products of conception (POC), that can be missed on clinical and ultrasound assessment. As a result, products of conception should be subjected to histological investigation on a regular basis to avoid missing the diagnosis of molar pregnancy.

Keywords: Molar pregnancy,Trophoblastic hyperplasia, Hydatidiform mole,

INTRODUCTION

Hydatidiform Mole (HM) is one of the group of disease known as Gestational Trophoblastic Disease (GTD). The GTD includes complete and partial hydatidiform moles, invasive mole, choriocarcinoma, and placental-site trophoblastic cancers. These tumours are uncommon, accounting for fewer than 1% of all gynaecological cancers. Originating in the placenta, and with varied proclivities for local invasion and distant metastasis. [(1)] Hydatidiform Mole is a uterine placental abnormality. The expansion and swelling of chorionic villi in the placenta, is what Hydatidiform Mole is all about. The incidence of this disease is higher in women in age category less than twenty and over forty. Furthermore, it is more common in women who are nulliparous, have minimal financial security, and eat foods that are low in protein, folic acid, and carotene. [(2,3)]

HM is categories into two groups: Partial Hydatidiform Mole (PHM) and Complete Hydatidiform Mole (CHM). They both occur during pregnancy. [(4,5)]

Hydatidiform Moles can be found in varied numbers and frequencies all over the world. The Hydatidiform Mole is found in 1 in 1000 pregnancies in the United States and 1 in 2000 pregnancies in Europe. Molar pregnancy occurs in around two out of every 1000 pregnancies in Japan, which is nearly three times greater than in Europe or North America. In India, one in every 400 pregnancies is affected.[(5)] There is no credible data or reliable report on the prevalence and presence of molar pregnancy in Pakistan; nonetheless, a study states that the rate is 28 per 1000 pregnancies, which is three times greater than the rate of Asia.[(6)]

Hydatidiform Moles is chiefly diagnosed through clinicopathologic correlation, which includes aberrant uterine haemorrhage, fetal components' their presence or absence, unequal gestational age, higher fundal height, and increased beta-hCG levels.[(7)] In Hydatidiform Mole, the likelihood of chronic gestational trophoblast illness, including choriocarcinoma, is extremely high. As a result, a thorough and accurate diagnosis is required, which can be accomplished via histopathology. Histopathological examination, including trophoblastic hyperplasia, villous outline, hydropic swelling, presence of discrete cisterns, and nucleated red blood cell in fetal arteries. [(5)] The risk percentage of Choriocarcinoma in CHM is 10% –30% and in PHM is 0.5% – 5%.[(8)]

However, the histopathological characteristics of CHM and PHM are very similar, resulting in a lot of inter-observer variability in the diagnosis.[(9)]This study aims at determining the incidence of occurrence of this condition while considering clinical and laboratory results, and also investigates the clinical presentation and histopathology of hydatidiform mole, as well as the clinical utility of such an examination.

MATERIAL AND METHOD

From January 1st, 2016 to November 31st, 2021, a more thoroughly prepared case review was undertaken at the Department of Pathology Bmsi JPMC Karachi. All molar pregnancy cases were thoroughly examined, taking into account their age, gestational age, signs and symptoms, and histolopathology. Medical records were used to collect the relevant data, figures, and facts for the investigation. All cases of H and E stained glass slides with histological diagnosis of HM were retrieved. These slides were then reviewed using a histolopathological prism. Goldblum [(10)] criteria for diagnosing CHM and PHM were based on the following features:

Trophoblastic hyperplasia and vesicular swelling, Pseudoinclusion, Cistern formation, Fetal vessels in villus stroma. Cases with equivocal diagnoses and histological diagnosis of hydropic abortion, on the other hand, were omitted from the research. Data was calculated in simple percentages.

RESULTS

The Department of Pathology received a total of 631 placental samples, with 73 of them being HM. There were 64.3% partial hydatidiform moles and 35.6 % complete moles among them. The research took place from January 1, 2016, through December 31, 2021.

Table 1: Hydatidiform Moles' Types

Types	Number of patients (%)
Complete Hydatidiform Mole (CHM)	26(35.6%)
Partial Hydatidiform Mole (PHM)	47(64.3%)
Total	73(100%)

Table 2: Hydatidiform mole patient's age of presentation

Age of presentation (years)	No of Patients(%)
≤20	13(17.8%)
21-35	40(54.7%)
>35	20(27.3%)
Total	73(100%)

Table 3: Gestational age of presentation (n=73)

Gestational age	No of patients(%)
1-2 months	28(38.3%)
2-5 months	40(54.7%)
>5 months	5(6.8%)

Table 4: Clinical symptoms of HM patients(n=73)

Clinical finding	No of patients(%)
Bleeding/vagina	59(80.8%)
Heavy bleeding	4(5.4%)
Lower abdominal pain	9(12.3%)

Table 5: Clinical diagnosis on admission(n=73)

Clinical diagnosis	No of patients(%)
Incomlete abortion	6(8.2%)
Complete abortion	2(2.7%)
Molar pregnancy	51(69.8%)
Missed abortion	7(9.5%)

Table 6: Histopathological findings in Hydatidiform moles

Type of mole	Villous enlargement Marked Moderate	Pseudo inclusion Present Absent	Cisterns Present Absent	Trophoblastic Proliferation Marked Moderate	Fetal vessel in villous stroma Present Absent
CHM	18 8	17 9	23 3	21 5	0 26
PHM	12 35	30 17	39 8	2 45	38 9

The majority of the patients were between the ages of 21 and 35 years. This condition appeared in 13(17.8%) patients while they were less than 20 years old, and in 20(27.3%) patients when they were older than 35 years (Table 2). Bleeding per vaginum was the most prevalent presenting symptom, and pain in the lower abdomen following it. In 28(38.3%) patients, the period of gestation was 1–2 months, in 40(54.7%) patients it was 2–5 months, and only 5(6.8%) patients showed after 5 months (Table 3). The morphological features of all patients and their diagnoses are listed in Table 6. Diffuse trophoblastic hyperplasia was more marked in cases of CHM.

DISCUSSION

According to Moodley et al. (2003), gestational trophoblastic disease (GTD) accounts for 1% of all gynaecological tumours, with hydatidiform mole being the most frequent. Low socioeconomic levels or poor diet play a negative role in the growth of GTD. The high incidence in Asia is mostly related to poverty Dayal et al. (2014). According to Aziz et al. (2012), the statistics are likely to be higher because these instances are underreported, there is no central registry or database, and spontaneous abortions are not routinely submitted for histopathology.[1,5,6]

In present study,631 placental samples were received in the histopathology department over a six-year period, with 73 (11.5%) being hydatidiform mole. 64.3% of HM had partial moles, whereas 35.6% had complete moles. These findings are consistent with those of Obahiagbon & Ugiagbe. (2017), Kulsoom et al. (2015), and Ocheke et al (2011).who observed a large percentage of partial moles. Awosusi et al.(2020),Dayal et al.(2014) and Jaffar et al.(2011), on the other hand, reported a high percentage of complete moles.[5,7,9,11,12,17] As a result, the ratio of complete to partial mole is described in a variety of ways in the literature.

Though literature revealed molar pregnancy is common before 20 and after 35 years age groups , the majority of HM in present study were found in the age range of 21-35 years, accounting for 54.7%. These findings are close to those of Ohayi & Onyishi.(2020) and Awosusi et al. (2020), who reported the majority of cases in the 21-30 and 20-39 year age ranges, respectively[.4,7] In every location and ethnic group, maternal age of reproduction is the most obvious reason for HM. Jaffar et al. (2011) studied that the high frequency of occurrence of this disease in Asia is primarily due to malnutrition and poverty,related issues.[9] In present study, only 13(17.8%) cases happened in women of below twenty years age, while 20(27.3%) cases occurred in women above the age of 35. Family planning, increasing awareness and better education are the reasons of a fewer occurrence rate of the disease in above 35 age group.

The majority of HM in present study was detected in the first trimester of pregnancy, with vaginal bleeding being the most common clinical sign, followed by lower abdomen pain. This is due to the separation of molar tissue from deciduas at an early stage. This symptom happened in 50% of patients, and the uterus may become enlarged as a result of a big volume of blood leaking into the vaginal canal Jaffar and colleagues. (2011)[9]. Although products of conception (POC) had been diagnosed by clinicians through clinical examination and sonographic assessment but in some instances they can be missed by these diagnostic methods.In this study, we discovered that 69.8% of the cases had a clinical diagnosis of molar pregnancy, whereas 20.5% of cases were seen without clinical indications of molar pregnancy. These findings are in favour of Rashid.(2017) and Alsibiani's (2014).[15-16] No history was mentioned for 9.5 % of the cases . The requirement of diagnosing GTD supports routine histopathological examination of POC. This is due to the fact that GTD has a high occurrence in some areas, can persist and hence cause uterine bleeding and other difficulties, and some of them can progress to the malignant variation, choriocarcinoma. Ohayi & Onyishi.(2020).[4]

Molar pregnancy is diagnosed through histological examination. This include scalloping and villous contours, the degree of trophoblastic hyperplasia, presence of distinct cisterns, trophoblastic inclusions, and the presence or absence of nucleated RBCs in fetal vessels Hoffner et al (2008). Molar pregnancy is often evacuated early in the gestation period, perhaps even prior to the establishment of classically well-established morphological features. As a consequence, diagnosis becomes difficult. Varying biological factors and unavailability of tissues, however, create great hurdle in differential diagnosis Jaffar et al (2011)[.9,13] Degree of hyperplasia was more marked in all the cases of CHM than in PHM. It represented a circumferential structure. Villous oedema is found in both conditions. However, cistern formation was found mainly in CHM.

However, enlarged hydropic villi in molar pregnancy is circular shaped. It is also with trophoblast attenuation and hypocellular villous cores. Sebire et al (2003). The determination of hydatiform mole as complete or partial is based on the presence of deoxyribonucleic acid (DNA) flow cytometry for karyotyping. However, this is a relatively expensive technique. It is also time consuming and needs a lot of resources unavailable in routine histopathological settings Jaffar et al.(2011).[9,14]

The P57kip2 protein is a cyclin – dependent kinase – inhibitor (CDKN1C) and tumour suppressor gene, located on chromosome $11p^{15.5}$. Deficiency of p57kip2 results in a loss of cell cycle control, thereby contributing to trophoblastic hyperplasia. Thus, p57kip2 is a valuable diagnostic tool that could be used to differentiate complete and partial hydatidiform mole. Awosusi et al.(2020).[7]

CONCLUSION

We came to the conclusion that partial mole was more common than complete mole. The condition was most common in patients between the ages of 21 and 35. The diagnosis of molar pregnancy is aided by histopathological study of products of conception (POC), and that can be missed on clinical and ultrasound

assessment. As a result, POC should be subjected to histological investigation on a regular basis to avoid missing the diagnosis of molar pregnancy, which can be stressful for a patient. P57kip2 is a valuable diagnostic tool that could be used to differentiate complete and partial hydatidiform mole.

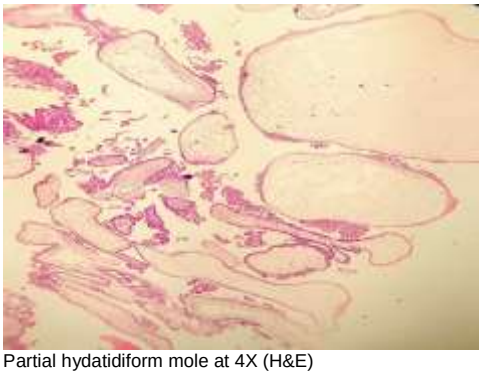

Figure 1: Partial hydatidiform mole at 4X (H&E)

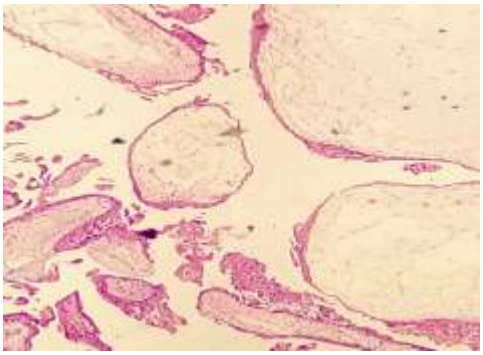

Figure 2: Partial hydatidiform mole at 10X (H&E)

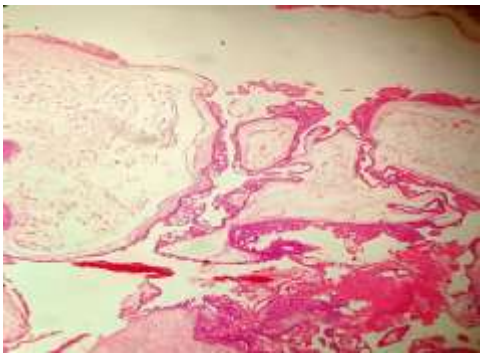

Figure 3: complete hydatidiform mole at 4X (H&E)

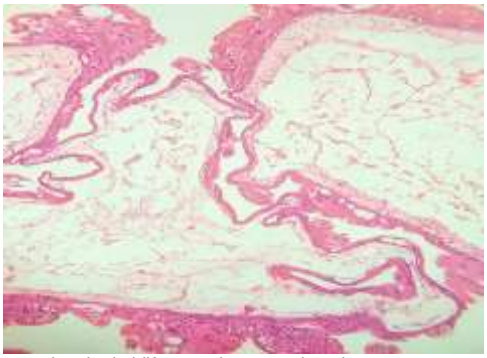

Figure 4: complete hydatidiform mole at 10X (H&E)

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