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FREQUENCY OF HYDATIDIFORM MOLE IN CURETTAGE MATERIAL BETWEEN 2014 AND 2016 IN A UNIVERSITY HOSPITAL

ABSTRACT

Gestational trophoblastic diseases show a spectrum from benign and easily treatable conditions to malignancy. The disease that remains in the most benign part of this distribution is the hydatiform mole known as "grape gestation" among the population. There are two types of mole hydatiform: partial and complete, and they are confronted at different rates around the world. In our study, we aimed to determine the incidence of hydatidiform mole at our hospital. 277 cases were included in our study that came to our department of pathology which consists of abortion and pregnancy termination materials between 2014-2016. Histopathologic examination revealed mole hydatidiform in 19 of 277 cases (6.9%). Despite the need for genetic analysis for definitive typing, 5.8% of cases were found to be partial mole and 1.1% complete according to histopathological findings. The etiologic factors of molar pregnancies have not been fully elucidated. We think that frequency studies can shed light on the future studies to determine these etiological factors.

Keywords: Mol Hydatiform, Partial, Complete, Gestational Trophoblastic Disease, Pregnancy

1. INTRODUCTION

Gestational trophoblastic diseases (GTD) are a group of diseases resulting from abnormal proliferation of trophoblasts that can be benign and easily treatable or malignant. The most common gestational trophoblastic diseases are reported as hydatidiform mole (HM), invasive hydatidiform mole (IHM), choriocarcinoma and placental site tumor according to World Health Organization (WHO) and International Federation of Gynecology and Obstetrics (FIGO) [1 and 3]. The most benign part of this disease group is the HM, also known as "grape gestation" among the population. According to pathogenesis, HM is divided into two as partial and complete. Complete hydatidiform mole (CHM) occurs when a sperm with 23X chromosome enters to an empty ovum and dublicates or when two sperms with 23X or 23Y chromosome enters into an empty ovum (Figure 1). The form showing the duplication is called homozygous complete mole and the second defined form is called

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heterozygous complete mole. Embryo formation is not seen in either form. The partial hydatidiform mole (PHM) is formed with fertilation of an 23X ovum by two sperms with 23X or 23Y, and the number of total chromosomes is 69, so the triploid partial molar terminology is also used (Figure 1). Although histopathologic findings are used for discriminating these two diseases which show some differences clinically, definitive diagnosis is made with molecular methods. When either of these types invade myometrial muscle tissue, blood vessels or extend to extrauterine sites, it is called invasive mole. Various factors are suggested in the formation of HM which confronts different ratios around the world. Socioeconomic status, blood group, age of menarche, maternal age, parity, molar pregnancy story, genetic factors, malnutrition, parasites and infections have been reported as risk factors in GTH disorders [5]. In our study, we aimed to determine the frequency of HM in our university hospital in the border city in the east of Turkey.

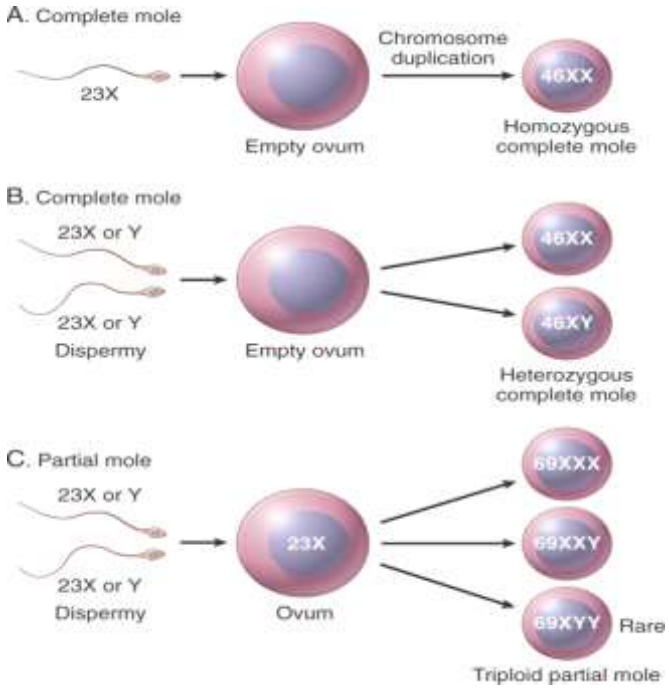


Figure 1. HM formation [4]

2. RESEARCH SIGNIFICANCE

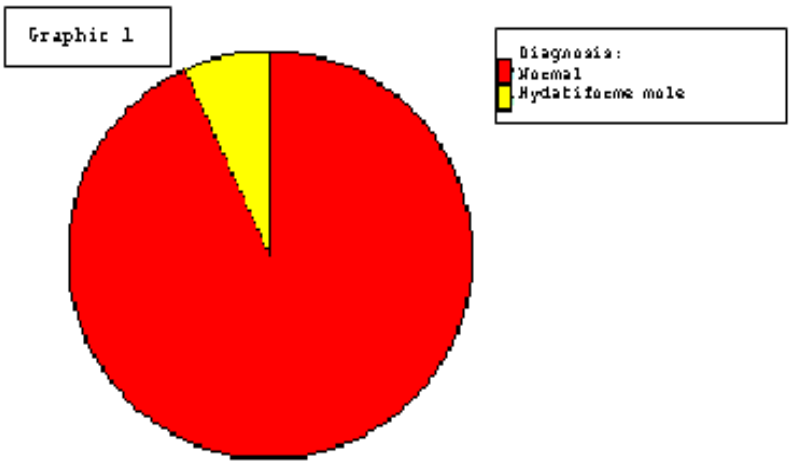
In HM, for which the risk factors are not widely determined, we think that it is important to find out the disease frequency and comparing it with domestic and international studies in terms of establishing data for future researches that can be done to define etiological factors.

3. MATERIALS AND METHODS

Between 2014 and 2016, 277 cases that reached our pathology department involving abortion and pregnancy termination materials from our center's gynecology and obstetrics clinic were included in the study. The age, material type and histopathological diagnosis of the cases were noted. Histopathological findings were used for HM typing while molecular test confirmation was not done due to uneffordable expances. Frequency analyzes of the results were made with SPSS packet program 20.0.

4. RESULTS AND DISCUSSION

The age range of 277 cases included in the study is between 17 and 53 years (median 31). Mean age is 31.93±7.158.258 (93.1%) of the cases were normal pregnancy products while HM was detected in 19 (6.9%) cases (Graphic 1). The mean age of 19 HM cases was determined as 33.05±7.322 (median 33). The incidence of HM typing results according to histopathological findings in all cases in the study population is given in Table 1. The frequencies of HM types among themselves are given in Table 2.



Graphic 1. HM incidence among study population

Table 1. Frequency of occurrence of HM cases by type in the study population

HM type	Frequency (N)	Percent (%)
Normal pregnancy product	258	93.1
PHM	15	5.4
CHM	3	1.1
IHM	1	0.4
Total	277	100

When the age distributions of HM cases were evaluated, mean age was 34.0±10.583 (median 38) for CHM, and mean age was 32.60±7.169 for PHM (median 33). The only case with IHM was 37 years old. Vaginal bleeding, elevated beta-human chorionic gonadotropin (beta-HCG) levels and uterus which is larger than gestational week, are the most frequent clinical findings in GTD cases [6 and 7]. Although the pathogenesis is not very clear, the main pathological changes that lead to GTD are abnormal gametogenesis, fertilization and malign transformation of trophoblastic tissue [8 and 9].

Table 2. Incidence of HM cases by type among HM cases

HM type	Frequency (N)	Percent (%)
PHM	15	78.9
CHM	3	15.8
IHM	1	5.3
Total	19	100

GTD is monitored in different areas across the world at different rates. In Asian countries HM is reported about 2-3 times higher than Europe and North America [10]. For example, in Indonesia, there are 115 GTD in 10.000 gestations and 28 GTD in Thailand, while

less than 10 GTD is seen in the United States [11 and 12]. In South America, the frequency of HM was found to be 1/215 in a reference center between January 1980 and December 1989 [13]. In another study conducted in the same country published in 2012, the rate was reported as 2% [14]. In a study that is made in Tunisia, the frequency of GTD was found to be 1/918 births, while the frequency of CHM was reported as 1/1347 births and the frequency of PHM was reported as 1/3004 [15]. There is no significant difference between the rates reported in population-based studies in the United States in domestic frequency assessments [16 and 18]. Different rates have been determined in studies conducted in our country. The GTD rate was determined as 69/11522 between January 1996 and December 2010 in Istanbul Taksim Training and Research Hospital Gynecology and Obstetrics Clinic [19]. In the 5 years period between 1987-1991, the incidence of GTD in Zeynep Kamil Hospital was determined as 1/676 pregnancy [20]. According to a study conducted in Sivas, the incidence of HM was 6.6 per 1000 births [21]. In a study conducted in Manisa, between 2003 and 2013, the cases with a diagnosis of GTD was reported as 4/1000 [22]. We found HM frequency 6.9% in abortus and curettage materials in our study. However, comparison with other studies in our country is not optimal due to the rate determination which is made by either the number of pregnancies or live births.

Considering GTD types, 54.43% PHM, 42.63% CHM, 1.47% IHM, 1.47% choriocarcinoma were detected in the study conducted in Istanbul Taksim Training and Research Hospital Obstetrics and Gynecology Clinic [19]. According to a study between 2012 and 2014, among 87 cases, 52 (59.8%) cases reported as PHM and 35 (40.2%) as CHM [23]. In another study, approximately 30% of GTD cases were identified as PMH and 65% as CHM [21]. Kars et al. found out 25% of their cases compatible with PMH and 68% CHM [24]. In a study evaluating the cases between 2003 and 2013, 12 (44.4%) of the 27 HM cases were PHM, and 15 (45.6%) were CHM [22]. In our study based on our histopathological findings, we found PHM in 15 cases (78.9%), CHM in 3 cases (15.8%) and IHM in 1 case (5.3%). We think that the difference between PHM and CHM rates in our city can be caused by the fact that we are a border city and ethnically uniformy is not high, while not a very significant difference is observed between other cities. As a result, the multi-centered studies that carried out with standard evaluation criteia will be useful for determining the frequency of HM first and then for exposing national and regional etiologic factors.

5. CONCLUSIONS AND RECOMMENDATIONS

- The frequency of HM varies between countries and regions within the country.
- We found a ratio of 6.9% for HM in abortus and curettage materials in our study.
- According to the classification made with histopathological findings, we observed PHM in 15 cases (78.9%), CHM in 3 cases (15.8%) and IHM in 1 case (5.3%).
- Multi-centered studies involving standardized assessment for HM will be useful.

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