Hydatidiform molar pregnancy in Malaysian women: a histopathological study from the University Hospital, Kuala Lumpur

Phaik-Leng CHEAH MBBS, MRCPath, Lai-Meng LOOI FRCPA, FRCPath, and Vallipuram SIVANESARATNAM" MBBS. FRCOG

Departments of Pathology and Obstetrics and Gynaecology, Faculty of Medicine, University of Malaya, Kuala Lumpur*

Abstract

A review of gestational trophoblastic disease diagnosed at the Department of Pathology, University Hospital, Kuala Lumpur from January 1989 to December 1990 using established histological criteria showed 25 complete hydatidiform moles (CHM), 11 partial hydatidiform moles (PHM), 1 invasive mole and 2 choriocarcinoma. The ages of the patients with CHM ranged from 21 to 43 years (mean = 28.5 years) and PHM 20 to 33 years (mean = 27.5 years). The invasive mole occurred in a 42-year-old Malay woman. The two patients with choriocarcinoma were both Chinese and 41 and 46-years old respectively. During the same period, 1,062 non-molar abortions and 13,115 births, inclusive of livebirths and stillbirths were recorded at the University Hospital. The incidence rate of hydatidiform moles was thus estimated to be 1:384 pregnancies. PHM constituted 30% of all molar pregnancies. Hydatidiform moles occurred among the Malays, Chinese and Indians at the rate of 2.43, 2.66 and 3.29 per 1,000 pregnancies respectively. It appears that hydatidiform molar pregnancy has the highest prevalence among the lndians, a finding similar to an earlier Singapore study.

Key words: Complete mole, partial mole, hydatidiform mole, trophoblastic disease

INTRODUCTION

An earlier study from this Centre showed that 1 hydatidiform molar pregnancy was encountered in every 330 hospital deliveries in the 5-year period between March 1968 to March 1973,' emphasising the importance of this condition in our female population during their reproductive years. The majority of hydatidiform moles encountered are complete hydatidiform moles (CHM). Partial hydatidiform moles (PHM) are less well-recognised and were probably categorised with CHM in previous studies. Nevertheless, it is important to distinguish it from CHM because of its lower risk of persistent and metastatic trophoblastic disease. Although studies from the West report that PHM make up 25-43% of all molar pregnancies,[2-4] its prevalence in the Malaysian population has not been documented. Lee *et al.*, however, noted that PHM occurred less frequently among Singaporeans than Western populations and constituted only 7.4% of hydatidiform moles studied.[5]

A retrospective analysis of all cases of gestational trophoblastic disease diagnosed histologically at the Department of Pathology, University Hospital, Kuala Lumpur over a 2-year period was conducted to establish the incidence of the various types, in particular CHM and PHM.

MATERIALS AND METHODS

All cases of gestational trophoblastic disease and non-molar aborted conceptuses on record in the Department of Pathology of the University Hospital, Kuala Lumpur, for the 2-year period between January 1989 and December 1990 were retrieved. Sections of all the cases of gestational trophoblastic disease were reviewed histologically and classified in accordance with the World Health Organisation Scientific Group on Gestational Trophoblastic Disease Classification system[6] into the following categories:

1. Hydatidiform mole
   a. Complete (classic)
   b. Partial
2. Invasive mole
3. Choriocarcinoma
4. Placental site trophoblastic tumour

The primary determining feature used to distinguish a hydatidiform mole from a hydropic abortus was the presence of trophoblastic proliferation. The morphological criteria used to distinguish between CHM and PHM are listed in

Addresslorcorrespondenceandreprintrequests: Dr. P.L. Cheah, Departmentof Pathology, Faculty of Medicine, University of Malaya, 59100 Kuala Lumpur. Malaysia.

TABLE **1:** Histological criteria used in differentiating complete and partial moles

Histological features	Complete mole	Partial mole
Foetal membranes, foetal parts, foetal blood vessels		
Outline of villus	rounded	scalloped
Trophoblast		
proliferation	+++	++ (focal)
vacuolation	+/–	++
invagination	+/–	++
Villous core		
hydropic change	generalised	focal
central cistern formation	+++	+
fibrosis		+

Note: + = present, - = absent

Table 1. Invasive mole, choriocarcinoma and placental site trophoblastic tumour were diagnosed on established histological criteria. Records of all live and stillbirths in the hospital over the same period were obtained from the Registry of Births and Deaths of the University Hospital, Kuala Lumpur.

RESULTS

From the files, 41 cases of gestational trophoblastic disease were histologically diagnosed over the 2-year period. Of these, 38 were hydatidiform moles. 33 were classified as CHM and 5 PHM. 1 invasive complete mole and 2 choriocarcinoma were also diagnosed.

Histological review revealed 2 cases of hydropic abortions among the cases initially diagnosed as CHM. In addition to the 5 reconfirmed PHM, another 6 cases initially diagnosed as CHM were re-categorised as PHM after histological review. The histological diagnoses of the invasive complete mole and 2 choriocarcinomas were re-confirmed. Finally, there were 25 CHM, 11 PHM, 1 invasive mole and 2 choriocarcinoma. No placental site trophoblastic tumour was encountered. During this same period, 1,062 non-molar abortions (including the hydropic abortions originally classified as CHM) and 13,115 births, inclusive of live and stillbirths, were recorded at the University Hospital. Hydatidiform moles (inclusive of CHM, PHM and invasive mole) therefore occurred at a rate of 1 in 384 pregnancies and I in 354 deliveries. PHM constituted 30% of molar pregnancies.

The ages of women with CHM ranged from 21 to 43 years (mean = 28.5 years), PHM 20 to 33 years (mean = 27.5 years) and non-molar abortions 16 to 57 years. Table 2 details the ethnic distribution of cases of gestational trophoblastic disease, non-molar abortions,

TABLE **2:** Ethnic distribution of women with gestational trophoblastic disease, non-molar abortions, livebirths and stillbirths at the University Hospital, Kuala Lumpur (January **1989-** December **1990)**

	Malay	Indian	Chinese	Others	Total
Gestational trophoblastic disease					
Partial mole	7	3	1	0	11
Complete mole	15	6	4	0	25
Invasive mole	1	0	0	0	1
Choriocarcinoma	0	0	2	0	2
Non-molar abortions	689	208	158	7	1062
Births (live and stillbirths)	8754	2520	1716	125	13115
Total	9466	2737	1881	132	14216

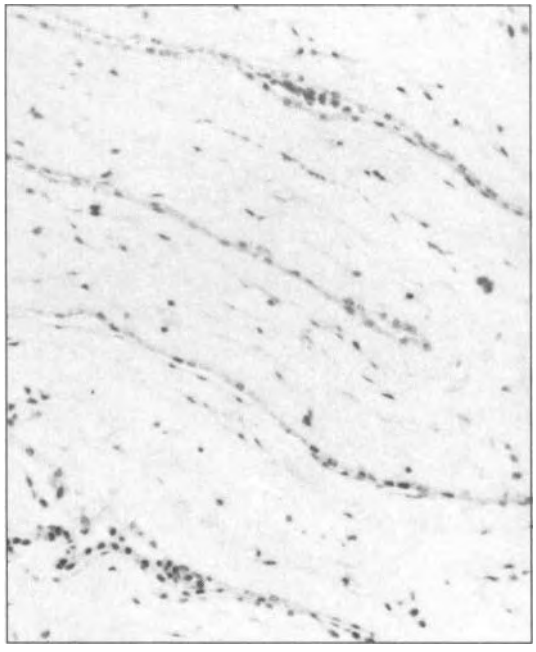

FIG. 1: Foetal membranes in a case of partial hydatidiform mole (H&E X300).

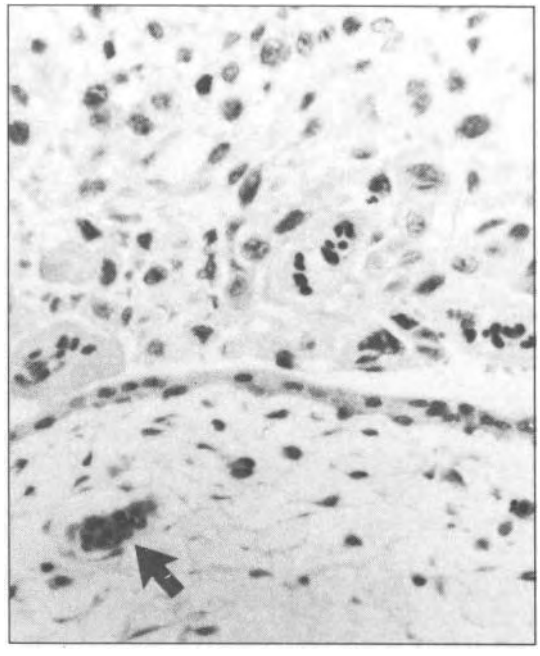

FIG. 2: Nucleated red blood cells within a foetal blood vessel (arrow) in the chorionic villus of a partial mole. Note the trophoplastic proliferation in the upper half of the field. (H&E X600)

livebirths and stillbirths. The ethnic ratio (Malay:Indian:Chinese) of CHM was 3.8: 1.5: 1.0, PHM 7.0:3.0:1.0, and all pregnancies (including CHM, PHM, invasive mole, non-molar abortions, live and stillbirths) 5.0: 1.5: 1.0.

DISCUSSION

The incidence rate of hydatidiform molar pregnancy derived from an earlier study of cases occurring over a period of 5 years (March 1968-March 1973) from this Centre, of 1 per 330 deliveries' does not differ significantly from the rate (1 in 354) of the present study. It appears that the incidence rate of hydatidiform molar pregnancy has remained fairly constant over the past two decades and has not been affected by the country's improved socio-economic conditions.

The incidence rate of hydatidiform moles of 1 in 384 pregnancies observed in this study supports the general belief that molar pregnancy occurs more frequently in Asian women than Westerners. This is in comparison with studies from Europe and the United States of America where hydatidiform molar pregnancy has been estimated to occur at a rate of 1 per 1,000 to 1 per 2,000 pregnancies.[7-11] However, it is important to note that this and the previous study from this Centre' are based on an in-patient population. Although a decreasing practice, there is still a tendency for uncomplicated pregnancies in Malaysia to be managed by private practitioners, or delivered at home and not in a hospital. Hence, a study of gestational trophoblastic disease based on an in-patient population may give an over-representation of the entity. This suspicion is augmented by the findings from a study conducted in Singapore,'' which shares a similar ethnic composition. Teoh ***et al.*** noted that hydatidiform moles occurred at a rate of 1 per 823 pregnancies among Singaporeans. This lower incidence rate is probably explained by the infrastructure of the health system in Singapore during the period of study which channelled most patients with trophoblastic disease to a single hospital in the island republic.[12] Cases of hydatidiform moles encountered in that hospital could then be compared directly against the total registered births in the country for the same period in the calculation of the incidence rate. This obviously allowed for a more accurate incidence rate.

Partial hydatidiform moles constituted 30% of our molar pregnancies. This proportion is closer to that of Western series[2-4] than that observed by Lee ***et al.*** in Singapore."

In this study 6 out of 11 cases of PHM were wrongly classified as CHM during the original histopathological examination. This implies that histological diagnosis of PHM can be easily missed if clues are not actively sought. The

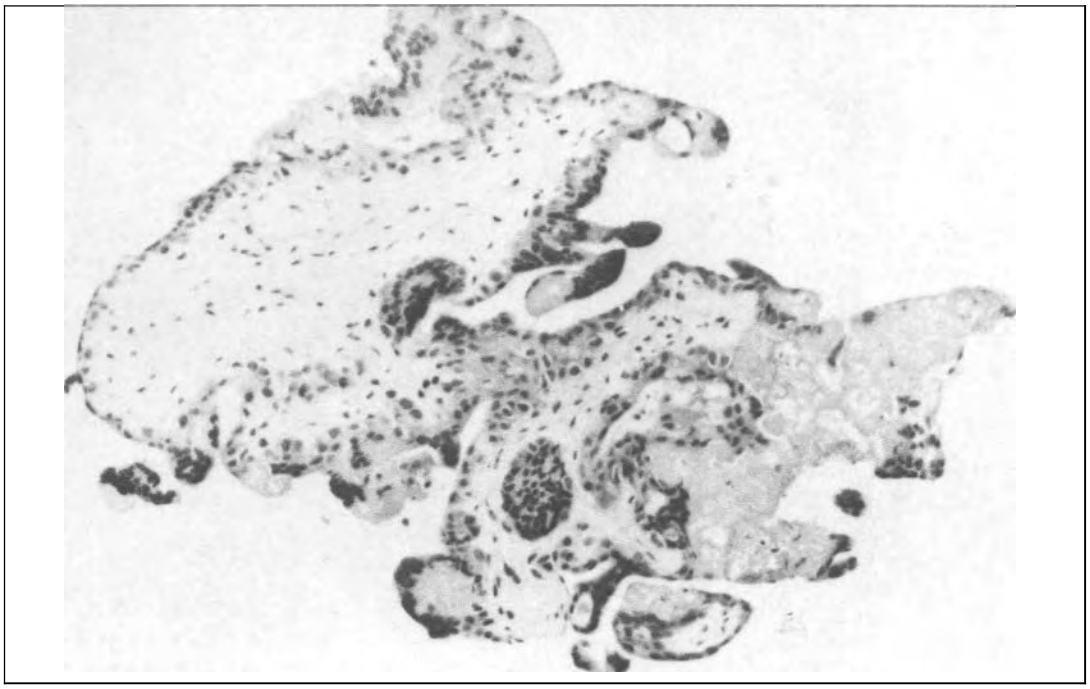

FIG. 3: Scalloped outline of a chorionic villus of a partial nole. Trophoblastic invaginations frequently seen in partial moles is also shown. (H&E X300).

advent of cytogenetic analysis has improved the accuracy of differentiating PHM from CHM, based on findings that the majority of CHM are androgenic in origin and of 46 XX constitution[13-17] while PHM are triploid (69 XXX or 69 XXY karyotype).[15,16,18] However, even though cytogenetic analysis, whenever it can be performed, is a useful adjunct in distinguishing CHM from PHM, many laboratories are unable to offer ploidy studies on molar tissue on a routine basis. Diagnosis is still largely based on histology in combination with clinical and serological assessments. Therefore, it is important for the pathologist to be aware of PHM as an entity and

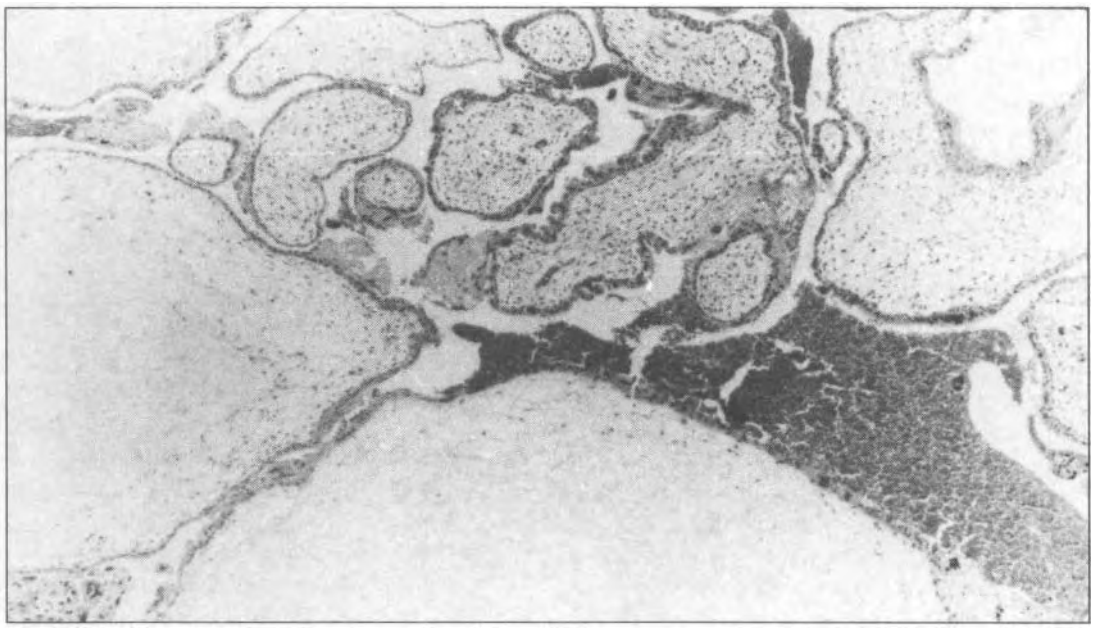

FIG. 4: Partial hydatidiform mole showing a "mosaic" pattern of hydropic chorionic villi admixed with normal sized ones. (H&E X100).

to be familiar with the histological criteria for diagnosing this condition if over-treatment of such cases is to be prevented. Presence of foetal membranes (Fig. 1), foetal red cells (Fig. 2), scalloped villous outline, and trophoblastic invaginations (Fig. 3) are useful histological features of PHM. In addition, the low-power "mosaic" appearance of PHM (Fig. 4), which results from the admixture of focal hydropic villi with trophoblastic proliferation and normal villi is an important pointer to the correct diagnosis. An interesting observation in this study was that all the cases classified correctly as PHM at the time of original diagnosis were in their second trimester. In comparison, 3 of the 6 PHM mistaken for CHM were in their first trimester. Two were in the second trimester while the gestation of one case could not be ascertained. It appears that first trimester PHM are harder to distinguish from CHM than second trimester ones on histological grounds and a careful examination is warranted if erroneous overdiagnoses are to be avoided.

The mean ages of patients with CHM (28.5 years) and PHM (27.5 years) do not differ and the age ranges fall within the peak childbearing years. Teoh *et al.* showed that hydatidiform molar pregnancy occurred most frequently among the Indians in Singapore.'? In our study, hydatidiform moles occurred among the Malays, Chinese and Indians at the rate of 2.43, 2.66 and 3.29 per 1,000 pregnancies respectively. This finding supports the Singapore study that hydatidiform molar pregnancy shows a predilection for the ethnic Indian.

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