

A REVIEW OF COMPLETE HYDATIDIFORM MOLES IN GHANA

*A. B. AKOSA, F. O. AMPADU, R. K. GYASI

Department of Pathology, University of Ghana Medical School, P. O. Box 4236, Accra

SUMMARY

All cases of complete hydatidiform moles received over a period of 29 years from a cross section of hospitals in Ghana were retrieved and studied at the Pathology Department of the Korle Bu Teaching Hospital (KBTH), Accra to establish the crude prevalence rate for the disease. A total of 244 cases of complete hydatidiform moles were obtained with an age range of 15-52 years. The mean age was 31 years and peak age was in the 25-29 age group. Age demographics were obtained from the histopathology laboratory request forms. Patients at the extremes of reproductive age (<20 and >40) formed 21.9% of cases. The crude prevalence rate assessed in the KBTH was 0.70/1000 deliveries. The low number of reported cases was largely the result of gross under-reporting. Most specimens obtained from evacuation of uterus for incomplete abortions were not sent for histological examination. However, the crude prevalence rate for KBTH was still higher than that for advanced countries and comparable to that of Enugu/Nigeria (0.87/1000 deliveries) and Kampala/Uganda (1.03/1000 deliveries), which have similar high rates of fertility, pregnancies at extremes of age and level of maternal care delivery systems as Ghana.

The prevalence of hydatidiform moles remains a useful index of maternal health delivery system, and a national register of hydatidiform moles may improve the rate of reporting cases and be a useful tool in a prospective study to define other epidemiological features of the disease in Ghana.

Keywords: Complete hydatidiform moles, hospitals, deliveries, crude prevalence

INTRODUCTION

With more than 40,000 deliveries a year, the Kangdang Kerbau Hospital in Singapore once ranked as the largest maternity service in the world.

In the 1960s it also saw the largest number of hydatidiform moles approximately 80 to 90 new cases

per year. There are now no teenage births in Singapore and few women above 43 years would consider having another child. Early prenatal attendance and specialist obstetric and gynaecological care have become the norm and early ultrasound examination is frequently undertaken. Molar pregnancy is scarcely seen in Singapore today and the National Register of trophoblastic Disease had difficulty in finding cases in 1987¹.

Trophoblastic disease is prevalent in underdeveloped and developing countries with still increased pregnancies at both ends of the reproductive cycle, multiple pregnancies and poor obstetric care. There appears to be a wide variation in incidence from 1 in 2000 pregnancies in Europe and North America to 1 in 200 pregnancies in parts of South East Asia and Mexico with most other countries in between these two extremes.

Very few reports on the disease have come out of Africa²⁻⁷ but none out of Ghana.

We reviewed all the cases sent to the Department of Pathology, KBTH, Accra, Ghana in order to establish the parameters of the disease in Ghana and with the number of deliveries in KBTH establish a crude prevalence.

MATERIALS AND METHODS

A total of 244 complete hydatidiform moles were retrieved from the Pathology files of the Korle Bu Teaching Hospital, University of Ghana Medical School over a period of 29 years (1970-1998).

The specimens were all presented in 10% formalin solution and routinely processed to produce haematoxylin and eosin stained slides.

All slides were retrieved and where necessary fresh slides were prepared and stained for examination by the authors.

* Author for correspondence

Clinical information was obtained from the pathology request forms and age, source of specimen and clinical diagnosis were recorded.

The diagnosis of a complete hydatidiform mole was based on the presence of grape like vesicles macroscopically and on light microscopy, hydropic degeneration of all chorionic villi, with or without fetal vessels, diffuse trophoblastic hyperplasia and the absence of fetal parts or fetal red blood cells (figure 1 and 2). Complete hydatidiform mole must be distinguished from partial hydatidiform mole, which shows variable hydropic degeneration of chorionic villi, focal trophoblastic hyperplasia and the presence of fetal parts or fetal red blood cells.

RESULTS

Two hundred and forty four cases of complete hydatidiform moles were obtained over the 29 years from 1970-1998. Figure 1 and 2 shows typical appearance of a complete hydatidiform mole.



Figure 1 Hydropic degeneration of chorionic with villi. X 100

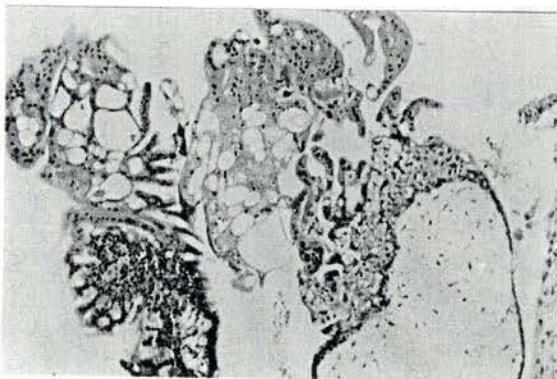


Figure 2 Marked trophoblastic hyperplasia of both cytotrophoblast and syncytiotrophoblast. X 400

Figure 3 shows a yearly distribution of cases. The period 1983-1987 was a low yield period in the Department because of shortage of staff.

The age distribution is shown in figure 4. The ages ranged from 15-52 years with a mean of 31 years. The modal age group was 25-29 with 11.70% of cases aged less than 20 years and 10.2% aged 40 years or more.

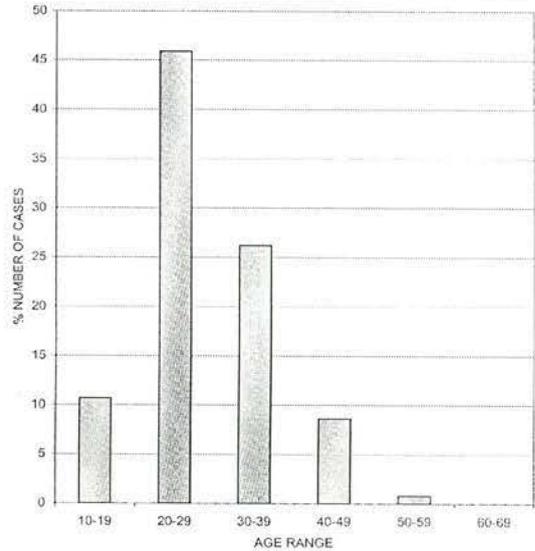


Figure 3 Yearly distribution of cases of complete hydatidiform mole

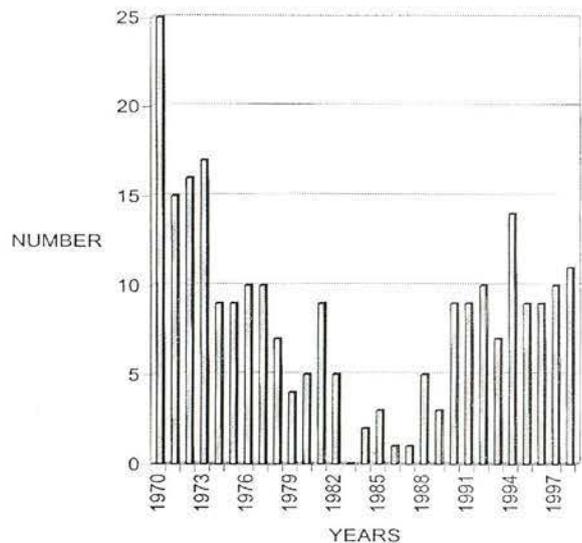


Figure 4 Age distribution of complete hydatidiform moles

Korle Bu Teaching Hospital provided 67.6% of cases (figure 5) and other hospitals in the Greater

Accra region, 14.8% of cases. Hospitals in other regions of the country contributed 17.5% of cases.

Government Hospitals made up 87% of cases and the Mission and Private Hospitals provided 9% and 4% respectively.

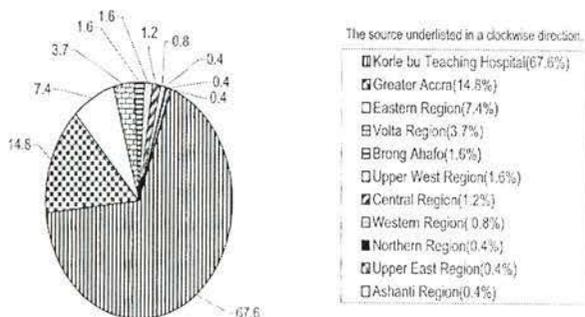


Figure 5 Source of cases (total 244)

Table 1 shows clinical presentation/diagnosis. A clinical diagnosis of molar pregnancy/hydatidiform mole was made in most of cases followed by incomplete abortions and amenorrhoea. Many cases presented with more than one clinical diagnosis.

Table 1 Summary of clinical diagnoses

| | |
|-------------------------|------------|
| Hydatidiform mole | 182 |
| Incomplete abortion | 39 |
| Amenorrhoea | 15 |
| Choriocarcinoma | 9 |
| Metrorrhagia | 6 |
| Pregnant | 3 |
| Ectopic pregnancy | 1 |
| Antepartum haemorrhage | 1 |
| Metropathia | 1 |
| Pre-eclamptic toxemia | 1 |
| Endometrial hyperplasia | 1 |
| Chorioadenosis | 1 |
| Infertility | 1 |
| Lower abdominal pain | 1 |
| Not stated | 22 |
| Total | 284 |

NB* some cases had more than one clinical diagnosis

The number of cases of complete hydatidiform moles and total numbers of deliveries in KBTH for

the period 1988-1997 are shown in table 2. There were 65 cases from the KBTH for the 93,061 deliveries. The average number of cases per 1000 deliveries, provides a crude prevalence rate of complete hydatidiform moles in KBTH as 0.70/1000 deliveries.

Table 2 Crude Prevalence of complete hydatidiform mole in Korle Bu Teaching Hospital (1988-1997)

| Year | Total number of deliveries | Total number of complete moles | Rate per 1000 deliveries |
|------|----------------------------|--------------------------------|--------------------------|
| 1988 | 4,742 | 4 | 0.84 |
| 1989 | 6,639 | 2 | 0.30 |
| 1990 | 8,801 | 7 | 0.80 |
| 1991 | 10,200 | 7 | 0.69 |
| 1992 | 9,709 | 8 | 0.83 |
| 1993 | 11,750 | 4 | 0.26 |
| 1994 | 5,738 | 9 | 1.57 |
| 1995 | 11,758 | 8 | 0.68 |
| 1996 | 11,355 | 6 | 0.52 |
| 1997 | 12,369 | 10 | 0.81 |

Average Crude prevalence is 0.70/1000 deliveries

Table 3 Incidence of molar pregnancy in developing countries and a few developed countries

| Author/year publication | Country | Incidence rate/1000 deliveries | |
|-------------------------------|------------------|--------------------------------|---------------------|
| Leighton 1973 | Uganda | 1.03 | |
| Ogunbode 1978 | Ibadan/Nigeria | 4.88 | |
| Ayangade 1979 | Nigeria | 1.67 | |
| Egwuatu/Ozumba 1989 | Enugu/Nigeria | 0.87 | |
| *Ghali 1969 | Baghdad/Iraq | 3.62 | |
| *Reddy, Rao 1969 | India | 2.17 | |
| *Matalon, Modan 1972 | Israel | 0.77/1000 live births | |
| *Javey H, Sajadi H 1978 | Iran | 3.15/1000 pregnancies | |
| *Sill et al 1987 | Papua New Guinea | 1.04 | |
| *Takenchi 1987 | Japan | 2.8 - 3.12 | |
| *Bassaw, Roopnarinesingh 1990 | Trinidad | 0.67/1000 pregnancies | |
| Yen, MacMahon 1968 | USA | 0.7 | |
| | 1984 | USA | 1/1000 pregnancies |
| | 1984 | Indonesia | 10/1000 pregnancies |
| Akosa, Ampadu, Gyasi 2000 | Ghana | 0.70 | |

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DISCUSSION

Hydatidiform mole is a disease common in countries with increased fertility rates throughout the reproductive age span in particular at both ends of the cycle, multiple pregnancies and poor obstetric care and also a high rate of spontaneous and induced abortions. Ghana answers to all above specifications.

This study is institutional based and although the Department received 33% of cases from outside the KBTH the number of cases represent a gross under-reporting. In Ghana, the greater proportion of specimens from evacuation of the uterus in incomplete abortions and termination of pregnancies are discarded and not subjected to histopathological examination. Not even in KBTH are all evacuated specimens sent for examination.

The crude prevalence of complete moles over the past decade in KBTH of 0.70/1000 deliveries is comparable to the 0.87 and 1.03/1000 deliveries in Enugu, Nigeria⁷ and Kampala, Uganda² but not the 1.67 and 4.88/1000 deliveries^{4,6} reported in Western Nigeria.

The striking discordance in prevalence of hydatidiform moles in the populations of Eastern and Western Nigeria has been attributed to a possible role of Haemoglobin C which as stated by Egwuata and Ozumba⁷ is limited to Western Nigeria. The two populations however share similar climatic and socio-economic conditions and comparable obstetric characteristics.

In Ghana however, Haemoglobin C is distributed widely in the country and could not therefore have played any role in the causation/distribution of complete hydatidiform moles.

A prospective study on complete moles to include an analysis of the tribes of patients may be necessary to find out whether there are any significant differences as there appears to be between the Yorubas and the Ibos of Nigeria.

The incidence of complete mole has been noted to vary in multiracial populations. McCorrison⁸ noted a disproportionately large number of moles in Japanese, Chinese and Filipinos compared to Caucasian or ethnic Hawaiians.

In the United States of America, racial differences have been noted. The Rocky Mountain region, which has the largest population of native Indians had the highest incidence of hydatidiform mole. There was two-fold increase among whites compared to blacks⁹ but Yen and MacMahon¹⁰ noted an increase in Negroes and Jewish women. The role of previous abortions in the induction of complete hydatidiform moles has also been discussed¹⁰.

Acacia *et al*¹¹ found the risk of complete mole after two consecutive spontaneous abortions increased by a factor of 32.

The prevalence in Africa lies between the very high prevalence in parts of the Middle East and South East Asia and the low prevalence in Western Europe and United States of America (Table 6).

Cytogenic studies have demonstrated that most complete (90%) have a 46XX karyotype and the chromosomes are entirely of paternal origin¹². It appears to arise from an ovum, which loses the maternal haploid component and becomes fertilized by a haploid (23X) sperm, which then duplicates its own chromosomes¹³. About 10% of complete moles have a 46XY chromosome pattern also entirely of paternal origin and probable result from an empty ovum fertilized by two sperms¹⁴. Complete moles are therefore totally androgenetic and therefore constitute an allograft in the maternal organism instead of being hemi-allografts, as in normal pregnancy.

The diagnosis of complete mole is important because of the long-term risk of malignant transformation. Pregnancy with complete mole is 1000 fold more likely to progress to choriocarcinoma than a normal term pregnancy. The increased risk of development of persistent trophoblastic tumours after complete molar pregnancy has been reported in 18-29% of cases from the United States of America¹⁵.

After molar evacuation, human chorionic gonadotrophin (HCG) levels should be monitored weekly until they have been undetectable for 3 consecutive weeks followed by monthly monitoring until they have been undetectable for six consecutive months.

The average time to the first undetectable HCG level after evacuation of a complete mole is 9-11 weeks¹⁵.

In Ghana presently the estimations of HCG is out of the reach of most patients and therefore do not get done. Most of the patients become lost to follow up making the estimation of malignant transformation difficult.

As is Singapore, a significant improvement in the health delivery system and health education and a comparable improvement in maternal health with fewer pregnancies, no teenage pregnancies and none beyond 40 years, and proper antenatal care services can reduce the incidence of hydatidiform moles drastically.

The incidence/prevalence can therefore be an index of the maternal health delivery system as in maternal mortality.

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