

INCIDENCE OF TROPHOBLASTIC GROWTHS IN VISAKHAPATNAM

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The greatly increased incidence of trophoblastic tumours in the countries of Asia and Africa is now so well documented in the literature that it cannot be doubted. In Europe and North America, the incidence of these tumours is 1:2000 to 4000 pregnancies, while in the arc of the countries stretching from Japan in the North through South East Asia and into South India the incidence is seven to ten times higher (Jones, 1965). The incidence in Visakhapatnam also is fairly high, comparable to Japan where the tumour incidence is 1:232 pregnancies, which is very high, where every one is well fed, clean and the per capita income is fairly high, whereas the incidence is so low in Brazil, i.e., 1:1071, where indigency and malnutrition are rampant, thus doubting the aetiology to be based on malnutrition, anaemia and unhygienic living conditions.

Material and Methods

The material for review in the Department of Pathology, Andhra

Medical College, Visakhapatnam, consisted of endometrial scrapings, hysterectomy specimens, tissue from metastatic deposits, museum specimens, and necropsy material received from the Gynaecology & Obstetrics Department of King George Hospital, Visakhapatnam. Biopsy records of the Department of Pathology, Andhra Medical College were reviewed from January 1956 to June 1966, a period of 10½ years, and autopsy records from January 1940 to June 1966 and the statistical analysis of these tumours was done with regard to the general incidence, its age, site histological grading, pregnancy tests, etc.

Clinical information concerning the age, parity, abortions, previous mole, duration of molar pregnancy, size of the uterus, presence of toxæmias and radiological study of the chest, were obtained from the review of the individual case sheets. In addition, different age groups, parity of all cases of normal delivery, abnormal deliveries and abortion cases admitted in this hospital from January 1956 to June 1966 were recorded separately from the parturition file of the labour room for comparative study of the incidence of trophoblastic growths among cases of normal delivery.

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As it has been pointed out before, in the present series of 10½ years period, 12,067 normal deliveries, 11,062 abnormal deliveries associated with various types of complications related to pregnancy and 2,402 cases of abortions were recorded in the maternity unit of K. G. Hospital. In addition, 134 cases of hydatidiform mole, 8 cases of chorioadenoma destruens and 27 cases of choriocarcinoma were recorded from the same department. From peripheral hospitals, 11 specimens of hydatidiform mole were received in the Department of Pathology for reporting during the above mentioned period.

phoblastic tumour of the uterus, giving a percentage incidence of 10.3% for benign and 0.6% for malignant trophoblastic tumours (Table I).

In the present series, benign and malignant tumours of the female genital tract were 804 and 3,600 respectively, and benign trophoblastic tumours gave an incidence of 18.0% (145 cases) and malignant trophoblastic tumours an incidence of 0.97% (35 cases; 27 choriocarcinoma and 8 invasive mole) among the total number of tumours of the female genital tract. Tumours of the uterus alone comprised 423 benign and 96 malignant tumours,

TABLE I

Particulars	Benign	Malignant
Total no. of tumours	1,396	5,854
Total no. of trophoblastic tumours of the uterus	145	27 Choriocarcinoma
Incidence of trophoblastic tumours among total tumours in women	10.3%	8 Invasive Mole 0.60%

The average number of hydatidiform moles and malignant trophoblastic tumours, including invasive moles, admitted per year was about 13 and 3 per year respectively. Hydatidiform mole gives an incidence of 0.53% out of 25,665 total pregnancies in 10½ years. Similarly, the percentage of choriocarcinomas, including invasive moles, is 0.22% of 16,205 gynaecological cases.

In the present study, analysis of the data from the biopsy material in 10½ years showed 1,396 and 5,854 total benign and malignant tumours respectively in women, including 145 benign and 35 malignant tro-

and among these tumours the incidence of benign and malignant trophoblastic tumours was 34% and 36.4% respectively, roughly one-third. (Table II)

Distribution of all kinds of pregnancies that were seen in the period January 1956 to June 1966 in the Obstetrics & Gynaecology Dept. of K. G. Hospital, Visakhapatnam is shown in Table III.

Thus, the incidence of 134 cases of molar pregnancy was 0.53%, or 1 mole in 191 pregnancies. Our figures illustrate a relatively high incidence in comparison with the incidence in Europe and America where many authors reported molar pregnancy in

TABLE II

Particulars	Benign		Malignant	
	No.	Percentage	No.	Percentage
Total no. of tumours	1396	..	5854	..
Total no. of tumours of female genital tract	804	100	3600	100
Total no. of tumours of uterus	423	..	96	..
Trophoblastic tumours of the uterus	145	18.0	27 (C.C.) 8 (I.M.)	0.75 0.22
Percentage of trophoblastic tumours of uterus among total tumours of uterus	..	34.0	..	36.4

C.C. : Choriocarcinoma. I.M. : Invasive mole.

TABLE III

Particulars	Cases	Percentage
1. Labour, natural	12,067	47.00
2. Labour, abnormal	11,062	43.11
3. Abortions	2,402	9.36
4. Hydatidiform mole	134	0.53
Total	25,665	100.00

by Chun *et al*, 1964, Wei Ping Yen *et al*, 1963) have indicated a high incidence of trophoblastic tumours in certain Asian countries. Thus, the incidence of hydatidiform mole shows a wide geographical variation in different parts of the world as compared to our series, as is shown in table IV.

Chorioadenoma destruens (Invasive mole or malignant mole):

Like other trophoblastic growths, chorioadenoma destruens is more

between 1:2000 to 1:2500 pregnancies (Shaw 1952; Novak 1950; Hertig and Sheldon, 1947). In the past few years many authors (Acosta-Sison, 1959; Hasegawa 1957 quoted

TABLE IV

Author	Country	Incidence	Percentage
Novak, 1947	USA	1 : 2500	0.04
Hertig & Sheldon, 1947	Do.	1 : 2062	0.05
Muller & Lapp, 1949	Do.	1 : 1349	0.07
De Snoo, 1946	Holland	1 : 1200	0.08
Fernandes, 1957	Brazil	1 : 1071	0.09
Cabrera	Chile	1 : 829	0.12
Arambura	Guatemala	1 : 670	0.14
Mathieu, 1937	Oregon	1 : 60	0.16
King, 1956	China	1 : 530	0.18
Brindean <i>et al</i>	France	1 : 500	0.2
Karzarina	Russia	1 : 333	0.3
Hasegawa, 1957	Japan	1 : 232	0.43
Acosta Sison, 1959	Philippines	1 : 200	0.5
Morquez-Monter <i>et al</i> , 1963	Mexico	1 : 200	0.5
Dechan <i>et al</i> , 1964	Hongkong	1 : 242	0.41
Wei Ping Yen <i>et al</i> , 1963	Taiwan	1 : 125	0.8
Coppleson, 1958	Australia	1 : 820	0.22
P. M. Naidu, 1960	Hyderabad	1 : 624	0.16
Chandra Das, 1938	Calcutta	1 : 502	0.19
P. C. Das, 1956	Do.	1 : 447	0.25
K. Bhaskar, 1961	Madras	1 : 361	0.28
Mudaliar	Do.	1 : 583	0.17
Daftary <i>et al</i> 1963	Bombay	1 : 505	0.19
Reddy, D. J. <i>et al</i> . 1963	Guntur	1 : 295	0.5
Present series, 1966	Visakhapatnam	1 : 191	0.53

common in many oriental countries viz., Taiwan (Ping Yen Wei, 1963); Phillipines (Acosta Sison, 1960); Indonesia (Prawiro Hardjo *et al* 1957 quoted by Acosta Sison, 1960). Green (1959) recorded the maximum number of cases from Taiwan and Indonesia, whereas from South India he recorded only 3 cases. Table V shows the comparative analysis of the incidence of chorioadenoma destruens in relation to normal deliveries in this series with the incidence in Taiwan.

TABLE V
Incidence of chorioadenoma destruens

	No. of deliveries	Duration	No. of cases	Incidence in relation to deliveries
Present series, 1966 (Visakhapatnam)	25,665	10½ yrs.	8	1 : 2891
Ping Yen Wei, 1963 (Taiwan)	12,903	10	23	1 : 561

The above table shows a lower incidence of chorioadenoma destruens in our place as compared with many South East Asian countries.

Choriocarcinoma

During the 10½ years, there were 16,205 gynaecological cases and 25,665 pregnancies. During the same period 27 cases of choriocarcinoma were treated. The incidence of choriocarcinoma in relation to total number of gynaecological admissions and in relation to pregnancy is 1 in 600 and 1 in 950 respectively. This shows a relatively high incidence as compared to that in Europe and America where the maximum incidence recorded is 1 in 13,000 (Douglas and Otto, 1949) and the minimum recorded is 1 in 70,000 deliveries (Jones, 1954). In the past few years a high incidence of choriocar-

cinoma has been reported from certain Asian countries. Llewellyn-Jones, 1965 from Malaya, has reported that trophoblastic tumours including choriocarcinoma occur at the rate of 1:600 pregnancies, which is seven to ten times higher than the incidence in Europe and North America. However, in Hongkong, Phillipines, Japan, Taiwan and India the incidence is very high, between 1:200 to 1:1331, with the highest incidence in Phillipines. Thus, there is a wide variation in incidence in diffe-

rent countries. The frequency with which choriocarcinoma has been reported in relation to pregnancies in different countries is illustrated in Table VI.

TABLE VI
Incidence of choriocarcinoma and its comparative analysis

Authors	Incidence among deliveries	Percentage
Kimborough (1934)	2 in 8335 (1 in 4167)	0.025
Douglas & Otto (1949)	1 in 13000	0.0007
Hooper (1954)	1 in 14000	0.0007
Jones (1954)	1 in 70,000	0.0001
P. C. Chen (1962)	1 in 1,331	0.07
Ping Yen Wei <i>et al</i> (1953)	1 in 493	0.2
Reddy, D. J. (1963) Guntur	1 in 748.3	0.13
King (Hong Kong) 1956	1 in 3,708	0.027
Present series (1966)	1 in 950	0.1

Thus, this unequal distribution of trophoblastic disease in various parts of the world continues to be an

enigma. It is generally said that trophoblastic disease occurs most often among the indigent in association with parity, race, malnutrition, social status, anaemia and unhygienic living conditions. But if this be true why should the frequency be so high as 1:232 pregnancies in an advanced country like Japan and so low as 1:1071 in Brazil where indigence and malnutrition are so rampant? There is little evidence that this can be explained by considerations of the above factors. Jones (1965) was of the opinion that a disturbed immunological reaction may be responsible for these differential geographical variations.

Summary

1. The incidence of trophoblastic growths in Visakhapatnam is very high and is compared with other incidences the world over.

2. The geographical variation in its incidence is brought out in this review.

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