Acta Medica Okayama

Volume 15, *Issue* 1 1961 *Article* 6

FEBRUARY 1961

Clinical and histological observations of chorioepithelioma and hydatidiform mole

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Clinical and histological observations of chorioepithelioma and hydatidiform mole*

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Abstract

1. Clinical and histological evaluation of so-called chorioepithelioma malignum and hydatidiform mole has been made on the cases treated at the Department of Obstetrics and Gynecology, Okayama University Hospital during the 20year period friom 1939 to 1958. 2. CC has been confirmed to be a poor risk in the treatment than CA and SE. 3. The two-year cure rate and the five-year cure rate yield an approximate value in each of CC, CA and SE, so that the two-year survival would be an ideal index for determination of the prognosis. 4. It may be pointed out that CC would indicate a tendency of a higher gonadotropin content suggestive of the poor prognosis, provided the disease contain a greater number of La-cells comparing to Sy-cells. 5. Metastasis of CA is not so infrequent as has been formerly believed, and there were two cases, which proved to be a typical SE and had metastasis to the vaginal wall. 6. Concerning the last labor preceding the chorioepithelioma, it has been clarified that the disease occurs more frequently following spontaneous abortion rather than after artificial abortion. 7. It is noted that the mole showing a marked proliferation of the trophoblasts entailed CC. However, in order to evaluate a correlation of the histological findings of the mole with chance occurrence of the subsquent CC, further study on the cases is required.

Acta Med. Okayama 15, 77—90 (1960)

CLINICAL AND HISTOLOGICAL OBSERVATIONS OF CHORIO-EPITHELIOMA AND HYDATIDIFORM MOLE

(Study of 140 cases from our Department during the past 20 years)

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Received for publication, Oct. 27, 1960

Chorioepithelioma is a specific tumor that originated from chorionic epithelial cells in the foetal ectodermal tissue. The tumor may be considered to be a parasitic existence to the host and it presents some interesting clinical and pathohistological features as well as many puzzling probelms. Really, this disease is relatively rare in Europe and America but found frequently in the Orient, as in Japan, India, China and Philippines[1]. In view of this, it appears tc be an irony that the histological classification of this disease proposed by the American school has recently come to call a wide attention. In Japan, generally the histological classification of this disease was not considered so important but applied to this disease as a whole the term, chorioepithelioma malignum proposed by MARCHAND (1898). On the basis of a histological finding of mere presence of Langhans cells (La-cells) and syncytial cells (Sy-cells) scattered in the foci of hemmorrhage, edema, and coagulation-necrosis, it has been diagnosed as malignant chorioepithelioma. But referring to the early history and clinical symptoms, this has been divided into a typical one and an atypical one, the prognosis of the latter has been considered to be good. In other words, even the tumor of benignancy has been included under the term, malignancy. Consequently, if we examine the so-called chorioepithelioma malignum in Japan on the basis of American classification, we would naturally find all sorts of the classes.

The American classification was first proposed by EWING[2] in 1910. The recent one by NOVAK[3,4] (1954) is considered to be a standard classification based upon the histological confirmation on 74 cases, which were sent for the diagnosis from all parts of America as well as from various countries to the Mathieu Memorial Chorionepithelioma Registry. This classification seems to be quite reasonable from the standpoint of prognosis, and in Japan, many obstetricians and gynecologists are adopting it. ISHIZUKA[6], HASHIMOTO[7], MITANI[9], JIMI[9] and MORI et al.[10] emphasized the usefulness of the classification in their reports.

The purpose of the present paper is to review 140 cases of malignant

chorioepithelioma and 50 cases of hydatidiform mole which were treated in our department during the 20-year period from 1958. The reason why a relatively small number of the mole patients has been treated in the University Hospital may be due to the fact that most of the patients were treated by local practitioners and some of them appeared to the University Hospital only when the disease developed into chorioepithelioma.

STANDARD FOR HISTOLOGICAL DIAGNOSIS AND CLASSIFICATION

The histological diagnosis and classification of tumors have been made by the American classification standard dividing into 3 categories as follows:

a. *Syncytial Endometritis-Deciduitis-Syncytioma* (SE) (Fig. 1).

In SE, trophoblasts mainly the Sy-cells infiltrate not only into the decidua but also deeply into muscle layer at the site of implantation. These cells infiltrate discretely and singly and never form a large aggregation. It is accompanied by a strong inflammatory reaction, and the infiltration of Sy-cells can be observed along the muscle band without destroying any uterine muscle tissue. The prognosis of SE is invariably good.

b. *Chorioadenoma destruens-Destructive Mole* (CA) (Fig. 2).

This was so designated by Ewing[2] because the shape of chorion resembles the acini and it corresponds to what has been known as the destructive hydatidiform mole. Histological characteristics of CA are that there are seen abnormal proliferation of trophoblasts accompanied by well-formed villi and marked local destructive proliferation and that the proliferated trophoblasts involve the walls of blood vessels and uterus, and after destroying and perforating the walls they infiltrate into the parametrium and vaginal wall. Sometimes the patient with the chorioadenoma dies of hemorrhage and infection but there is a relatively good chance of complete cure by radical removal of the primary focus.

c. *Choriocarcinoma-Chorioepithelioma Malignum* (CC) (Fig. 3).

CC is the most malignant form and its prognosis is extremely poor, so that even after all sorts of treatment, most of the patients eventually succumb. Pathohistological characteristics of CC are the infiltration of a great number of trophoblasts into the uterus and into other tissues, the absence of well-formed villi and decidual cells, and highly hemorrhagic necrosis of matrix tissue, and trophoblasts are found proliferating with irregularity in the distribution and in the population ratio of Sy-cells and La-cells. Moreover, in CC the myometrium is highly destroyed by invading of trophoblasts so that the nuclei and cytoplasma are generally not clearly stained. In other words, in the diagnosis of this disease, overall picture of the tumor with the absence of well-formed villi is the most important finding.

CLINICAL FINDINGS

A. *Chorioepithelioma :*

Out of 140 cases, those which we could not make communication either on account of change of their address or for other reasons and those whose tissue blocks were such that we could not prepare large tissue specimens have been excluded for obtaining exact data as can be seen from Table 1. As the result

Table 1. Clinical Diagnosis: Malignant Chorioepithelioma (140 cases)

Histologic diagnosis	Cases	Communication			
C C	24	Reply		16	
		No Reply		2	
		Address unknown		6	
C A	39	Reply		30	
		No reply		3	
		Address unknown		6	
S E	29	Reply	24	No tumor	4
				Tumor	14
				Unknown	6
		No reply		1	
		Address unknown		4	
Specimens unsuitable	48	Reply		31	
		No reply		6	
		Address unknown		11	
Total	140	Reply		101	
		No reply		12	
		Address unknown		27	

we have been able to examine precisely only on 70 cases, one half of all cases. They are consisted of 16 cases of CC, 30 cases of CA and 24 cases of SE. As for SE, of those definitely diagnosed as such according to the histological classification standard, they are divided into three classes; those which presented macroscopically a small tumor, those that showed no such node and those that had no record at all. Attention is called here to the fact that had it been possible to carry out further examinations with serial sections in those which had tumor mass, we might have found CA and CC among them.

Age: This disease has been generally thought to occur more frequently in middle-aged women and multipara[11], while some hold the opposite view[4]. However, it is noteworthy that in our cases really no great difference can be found

in the actual number of patients in all range of age when we consider the age distribution of the patients. Nevertheless, considering the ratio of the frequency of pregnancy to the age range, it is presumed this disease occurs most frequently in the age over 40 years. In the average of the age range there is no appreciable difference among CC, CA and SE, and on whole the average becomes 35 years and seven months, which roughly agrees with that reported by other investigators[9,12]. The oldest is 51 years and the youngest 21 years.

The numbers of pregnancies and abortions: Most of the patients had been pregnant four times and one abortion. On the whole the average number of pregnancy is around 5 times and abortions around 2 times, and the abortion ratio against the number of pregnancy is 31. 6 per cent, showing not any significant differences among the three groups. As a control, we have observed 70 patients having no cholioepithelioma, the ages of each case exactly the same as that of one of the patients treated. On comparing the average numbers of pregnancies and abortions, in these two groups of patients, we found a slightly higher frequency in both pregnancies and abortions in the patients of cholioepithelioma, though no significant difference statistically.

The last labor: As shown in Table 2, 38 cases (54.3 %) are the ones who

Table 2. Last Labor Preceded

		Hydatidiform mole	Spontaneous abortion	Artificial abortion	Ectopic pregnancy	Normal pregnancy	Total
C C		7 (43.7%)	7 (43.7%)	1 (6.2%)	0	1 (6.2%)	16
C A		18 (60.0%)	8 (26.6%)	2 (6.6%)	0	2 (6.6%)	30
S E	Tumor	8 (57.1%)	2 (14.2%)	2 (14.2%)	0	2 (14.2%)	14
	No tumor	4 (100.0%)	0	0	0	0	4
	Unknown	1 (16.6%)	5 (83.3%)	0	0	0	6
Total		38 (54.3%)	22 (31.5%)	5 (7.1%)	0	5 (7.1%)	70

had hydatidiform mole followed by those with spontaneous abortion. With respect to this tendency no difference can be recognized among CC, CA and SE cases. It is notable that the cases are found in much a greater number in spontaneous abortion than in artificial abortion, and this agrees with the results of JIMI[9].

Latent period: The interval between the last labor and the onset of the principal complaints is less than six months in 46 cases (65.7 %) out of 70, and more than half of these 46 complained of the symptoms within two months.

Principal complaints and symptoms: Abnormal genital hemorrhage occurred in 68 cases out of 70, almost in all. Those who complained of lumbago and lower abdominal pain were quite many. Fever was recognized in the cases of

CC and CA but none in SE group. In CC cases fever was found in as much as in 50 per cent, proving the frequency of secondary infection. It is to be noted that those complaining of symptoms other than hemorrhage in the cases with SE are strikingly few. Anemia can be recognized in the majority of the cases, and those with less than 60% Hb amount to 33 cases (47.1%), those whose erythrocyte count is under 300×10^4 occupy 28 cases (40%). In most of CC anemia is especially of high degree. Examining disturbances of the kidneys, such as edema, albuminuria and hypertension, the cases with ablbuminuria are greatest, 15 cases (21.4%). In CC likewise the proportion of albuminuria and hypertension seems to be higher than others.

The size, shape and consistency of the uterus: The uterus bigger than a goose egg is found in 6 cases (50%) out of 12 CC cases excluding the four cases after hysterectomy and in 17 (56.7%) out of 30 CA cases, showing no appreciable difference in size between the two groups. In the case of SE two thirds of the cases show the size of the uterus to be normal or slightly larger and big ones are rare. The shape is generally normal, but the uterus deformed by tumor formation can be found approximately in the same proportion both in CC and CA. In SE hardly any deformation can be recognized. Soft uterus is rather rare in CC while it seems more frequently encountered in CA and SE.

Luteinized cyst: Excluding 3 cases with previous oophorectomy 4 cases out of 13 CC had luteinized cyst, in 11 cases of 30 CA, and in 11 cases out of 24 SE, in the total of 26 cases (38.8%) out of 67 cases. In other words, the rate of the occurrence is about the same in all three groups, appearing either uni- or bilaterally (Table 3).

Table 3. Luteinized Cyst

		Present		Absent	Previous oophorectomy	Gases
		Unilateral	Bilateral			
C C		1	3	9	3	16
C A		9	2	19	0	30
S E	Tumor	5	2	7	0	14
	Notum or	1	2	1	0	4
	Unknown	1	0	5	0	6
Total		17	9	41	3	70

Metastasis: Metastasis occurred in 33 cases (47.1%) out of the total of 70 (Table 4). Of them it is found in as many as in 12 cases (75%) of 16 CC, and even in CA almost one half of the group, actually in 36.7 per cent. Moreover, an attention must be called to the fact that the occurrence of metastasis in CA is

Table 4. Metastasis

		Present	Absent	Total
CC		12 (75.0%)	4	16
CA		11 (36.7%)	19	30
SE	Tumor	6 (42.8%)	8	14
	No tumor	2 (50.0%)	2	4
	Unknown	2 (33.3%)	4	6
Total		33 (47.1%)	37	70

not so rare as has generally been believed[3,4,9,13,14]. As for the site of metastasis, the vagina and the lung seem to be decidedly the sites where metastasis takes place more frequently.

With respect to SE even in the cases showing macroscopically visible tumor formation in th uterus, CA or CC might be contained as already mentioned so that these are set aside for a time being. It is worthy of notice that in 4 cases of typical SE without tumor in their uterus, two cases showed the metastasis on the vaginal wall distinctly revealing the histological picture of SE.

Friedman reaction: In the Friedman reaction, as illustrated in Table 5, it

Table 5. Friedman Reaction*

		(+) in 100	(+) in 10^4	(+) in 5×10^4	(+) in 10^5	(−) in 100	unknown	Total
CC		14	6	1	1	1	1	16
CA		17	5	1	0	6	7	30
SE	Tumor	7	1	0	0	3	4	14
	No tumor	2	0	0	0	0	2	4
	Unknown	1	0	0	0	3	2	6
Total		14	12	2	1	13	16	70

* Unit used indicates rabbit unit/liter.

mostly reveals a positive reaction even at a higher unit in CC, and at 100 rabbit units/l almost all positive. However, an attention may be called to one case of CC which showed a negative reaction even at 100 rabbit units. In SE almost one half of the cases show negative reaction at 100 rabbit units. Concerning the relation between the numerical proportion of Sy-cells and La-cells on one hand and Friedman reaction on the other, in the case showing a greater population of La-cells there is a tendency to reveal a high unit positive reaction (Table 6). This is in opposition to Haupt's theory[16] but in agreement with the result of HAYASHI[17]. In the follow-up observations on the duration of time until the Fri-

Table 6. Numerical Proportion of Sy-Cells to La-Cells and Friedman Reaction

	unit / cells	(+) in 100	(+) in 10^4	(+) in 5×10^4	(+) in 10^5	(−) in 100	unknown
CC	S>L	5	0	0	0	1	0
	S=L	2	2	0	0	0	1
	S<L	7	4	1	1	0	0
CA	S>L	9	3	0	0	4	3
	S=L	4	0	0	0	2	3
	S<L	4	2	1	0	0	1

S stands for Sy-cells and L for La-cells.

edman reaction turns negative, out of 19 cases investigated, the majority of them turned negative within one month, and all negative within 6 months.

Prognosis: The two-year cure rate and the five-year cure rate are demonstrated in Table 7. As can be seen in the table, the mortality rate in CC two

Table 7. Prognosis

1) Two-Year Cure Rate

		Cases	Number of survors	Number of deaths	Cure rate (%)
C C		16	2	14	12.7
C A		30	25	5	83.3
S E	Tumor	14	13	1	92.8
	No tumor	4	4	0	100.0
	Unknown	6	6	0	100.0
Total		70	20	20	71.4

2) Five-Year Cure Rate

		Cases	Number of survivors	Number of deaths	Cure rate (%)
C C		11	1	10	9.1
C A		23	16	4	82.7
S E	Tumor	8	7	1	87.5
	No tumor	2	2	0	100.0
	Unknown	4	4	0	100.0
Total		48	33	15	68.8

years after treatment is slightly higher than 67 per cent of NOVAK[4], 70 per cent of Acosta SISON[15] and 80 per cent of JIMI[9]. In contrast to this, it is rather sur-

prising that the mortality rate in CA and SE is, out of all proportion, much lower than that in CC. There can be recognized no appreciable difference between the two-year cure rate and the 5-year one. The causes of death are in the order of tumor death, cerebral bleeding and pneumonia. The life-span between the treatment and death is less than one year practically in all the cases. A relation between the proportion of Sy-cells to La-cells and the prognosis is demonstrated in Table 8. The two survivors in CC are the ones who have many Sy-cells, and there is tendency of poor prognosis in those who show a greater population of La-cells.

Table 8. Numerical Proportion of Sy-Cells to La-Cells and Prognosis

	C C		C A	
S : L	Cases	Number of deaths	Cases	Number of deaths
S > L	6	4	13	1
S = L	4	4	10	3
S < L	5	5	7	1
Unknown	1	1	0	0
Total	16	14	30	5

Now, coming to the methods of treatment, in our department we usually give curettage and recurettage, total abdominal hysterectomy, radiotherapy, and chemotherapy, and we find hardly any differences in the cure rate due to different methods of treatment. However, it can be pointed out here that the differences in the cure rate become quite distinct when the differences in the histological classification are taken into account.

B. *Hydatidiform Mole*

Perhaps because only a few patients come to the University Hospital, we have encountered only 50 cases of hydatidiform mole during the past 20 years. Of them there are 34 patients with whom we have been able to make contact and know their conditions. Although they did not all respond, a study will be carried out on these 34 cases.

Age: Hydatidiform mole is found more frequently in the thirties, and the average age comes to 35.0 years, about the same as that of chorioepithelioma. It can occur also in the forties and fifties, and it is assumed that the rate of the occurrence must be higher in proportion to the total number of pregnancies at the particular age range.

The numbers of pregnancies and abortions: The number of pregnancies are illustrated in Table 9, and there is no tendency of greater occurrence of hydatidiform mole especially in grand multipara, the average number of preg-

Table 9. Number of Pregnancies and Abortions

	0	1—3	4—6	7—9	Average	Total
Number of pregnancies	4	14	7	9	3.8	34
Number of abortions	18	19	0	0	0.6	34

nancies being around 4 times. With respect to the number of abortions, hydatidiform mole occurs rather in the patients without any experience of abortion, the average number being 0.6 time, and it appears that there is no relation between the experience of abortion and the occurrence of hydatidiform mole.

Main complaints and symptoms: Irregular genital bleeding can be observed practically in all, and in addition, lower abdominal pain, foul vaginal disharge, and the emetic trouble are main complaints in about half of the total. The occurrence of edema and albuminuria is relatively high. Anemia is not so striking as in chorioepithelioma, and only 9 cases (26.4%) had less than 60%Hb and 5 cases (14.7%) had the erythrocyte count under 300×10^4. The time of onset of irregular genital bleeding is usually 2 to 3 months after conception in the majority of cases.

The size and consistency of the uterus: The size of the uterus shows to be abnormally enlarged in the 30 cases (88.2%) of all, to be equally so in the remaining 3 cases, and to be smaller in only 1 case, as compared with the corresponding gestational period. The consistency of the uterus is mostly soft.

Luteinized cyst: Luteinized cyst can be found only in 4 cases (11.8%) and this is unexpectedly lower than in the case of chorioepithelioma previusly described. This result is far at variance from the general report stating the luteinized cyst in 20 to 30 per cent of the patients[10].

Histological findings and prognosis: The mole is classified into I to VI types based upon the classification proposed by HERTIG[13], and a relation between the frequency of repeated occurrence of the chorioepithelioma and the prognosis has been investigated. Types I and II (Fig. 4) of Hertig's classification are the form that corresponds to what Marchand calls a secondary hydatidiform mole[11], and there is none or very little of trophoblast proliferation. Types III-IV (Fig. 5) are the form in which trophoblasts proliferate to a moderate degree accompanied by anaplasia, while Types V-VI (Fig. 6) are the form in which the trophoblast proliferation is extremely high with various degrees of mitosis of La-cells. In classifying the 16 cases whose histological specimens had been preserved in good condition, the number of cases is small (Table 10) and therefore, it is not possible to give any definite opinions but one obvious finding is that there was no case of Types I-II transformed into chorioepithelioma and to ultimate death.

Histological findings and Friedman reaction: Unfortunately most of the

Table 10. Histological Findings and Prognosis

Hertig's classification	Number of survivors	Nnmber of ensuing choriocarcinoma	Number of deaths	Total
I-II	8	0	0	8
III-IV	4	1	1	5
V-VI	2	1	1	3
Total	14	2	2	12

results of Friedman reaction are umbiguous, but no special relation can be recognized between the histological types and the reaction.

The time interval until Friedman reaction turns negative: Out of five cases confirmed to be positive to the Friedman reaction, two cases turned negative, one and two months respectively after the treatmont. This is not inconsistent with a report informing that the Frisdman reaction turns negtaive within 2—3 weeks after the treatment.

Treatment and prognosis: Two cases (5.9%) out of 34 died of development of the choriocarcinoma. Both of them received only curettage and re-curettage, and it is safer to perform total or sub-total hysterectomy, if possible.

DISCUSSION

The disease generally designated as malignant chorioepithelioma has been classified on the basis of the histological classification first proposed by EWING[2] and later confirmed by NOVAK[3,4], and investigations have been conducted from various angles. It has been elucidated that the prognosis of SE is absolutely good, while in the case of CA it can be cured completely by removing the primary focus and by other adequate treatment. On the other hand, CC has been found to be the most difficult one to cure with treatments available at present and is really an extremely malignant one. The fact that the prognosis of CA with well-formed villi, in contrast to that of CC with irregular proliferation, is better, can easily be understood when we take into account that no regularity at all can be observed in the proliferation of malignant tumor cells and that CA, which reveals the regular arrangement at least even in a portion of it, is a benign tumor though Sy-cells possess specific properties to destroy and infiltrate into tissue, and that only CC is a true malignant tumor.

In almost all the cases that died, the death occurred within one year after treatment and consequently the two-year cure rate and the five-year cure rate yield almost an identical value. These facts are quite important in deciding the prognosis. Generally it has been thought as HAYASHI[17], that chorionic gonadotropin is secreted by La-cells and chorioepithelioma that possesses these cells in

abundance reveals high unit positivity in the pregnancy test of the urine. However HAUPT[16] places a great importance on Sy-cells as the source of chorionic gonadotropin because the pregnancy test of the urine is positive despite the fact that La-cells are absent during the terminal stage of normal pregnancy. The present investigations suggested that the larger the population of La-cells is the greater in the hormone contents and the worse in prognosis. With respect to metastasis, so long as the metastasis of CA or SE, it occurs more frequently than what has been thought formerly but the tumors can be cured completely. Considering from our clinical findings, which revealed the metastasis on the vaginal wall in two cases of typical SE, it is dangerous to conclude the poor prognosis only looking at vaginal metastatic focus macroscopically.

It is needless to mention that in this observation the last labor of the patients is predominated by hydatidiform mole, abortion and normal delivery in the order cited. In the present investigations, however, the incidence of chorioepithelioma is far more frequent after spontaneous abortion rather than after artificial abortion. This means that in the case of spontaneous abortion, this disease may be brought about by chorionic tissue that is more apt to be left *in situ*, or the causative factor that gives rise to spontaneous abortion may bring about this disease. In any case this fact is worthy of attention.

As for the methods of treating chorioepitheioma there are surgical intervention, radiotherapy, chemotherapy, hormone therapy, etc.[19], but these must be combined adequately to suit each individual case. It is advisable first of all to remove the primary focus and metastatic foci if possible by operation as early as possible. The pathological focus obtained by operation must be checked at first macroscopically for the existence of chorionic follicles, and then with large tissue blocks microscope examination has to be done to determine whether it belongs to SE, CA, or CC. If it proves to be SE, its prognosis is definitely good. In the case of CA, exhaustive chemotherapy should be given, as ISHIZUKA[6] and MITANI[8,18] claim that CA can be completely cured by chemotherapy. Of course, radiotherapy and hormone therapy can be supplemented with chemotherapy. In the case of CC the prognosis would be poor, but all sorts of therapy should be resorted to.

About 5 to 10 per cent of hydatidiform mole is ensued by chorioepithelioma, and for a long time attempts have been made to determine the possibility of chorioepithelioma that follows hydatidiform mole from macroscopical and histological findings. There are two opposing views with respect to forecasting the possiblity of chorioepithelioma after hydatidiform mole histologically. Hertig and SCHELDON[13] classified hydatidiform mole into Types I to VI from the degree of trophoblast proliferation and anaplasia, and demonstratrated that the classification has a close relation to the clinical course including chorioepithelioma after

hydatidiform mole. In the present study, the relation between the classfication of hydatidiform mole and prognosis has been investigated, but data can not be quite reliable due to the paucity of the cases examined. Nevertheless, it has been possible to recognize that there is a greater possiblity of ensuing chorioepithelioma in the case where the proliferation of trophoblasts is more marked. It is desirable to investigate a greater number of cases in order to obtain more exact data.

SUMMARY

1. Clinical and histological evaluation of so-called chorioepithelioma malignum and hydatidiform mole has been made on the cases treated at the Department of Obstetrics and Gynecology, Okayama University Hospital during the 20-year period friom 1939 to 1958.

2. CC has been confirmed to be a poor risk in the treatment than CA and SE.

3. The two-year cure rate and the five-year cure rate yield an approximate value in each of CC, CA and SE, so that the two-year survival would be an ideal index for determination of the prognosis.

4. It may be pointed out that CC would indicate a tendency of a higher gonadotropin content suggestive of the poor prognosis, provided the disease contain a greater number of La-cells comparing to Sy-cells.

5. Metastasis of CA is not so infrequent as has been formerly believed, and there were two cases, which proved to be a typical SE and had metastasis to the vaginal wall.

6. Concerning the last labor preceding the chorioepithelioma, it has been clarified that the disease occurs more frequently following spontaneous abortion rather than after artificial abortion.

7. It is noted that the mole showing a marked proliferation of the trophoblasts entailed CC. However, in order to evaluate a correlation of the histological findings of the mole with chance occurrence of the subsquent CC, further study on the cases is required.

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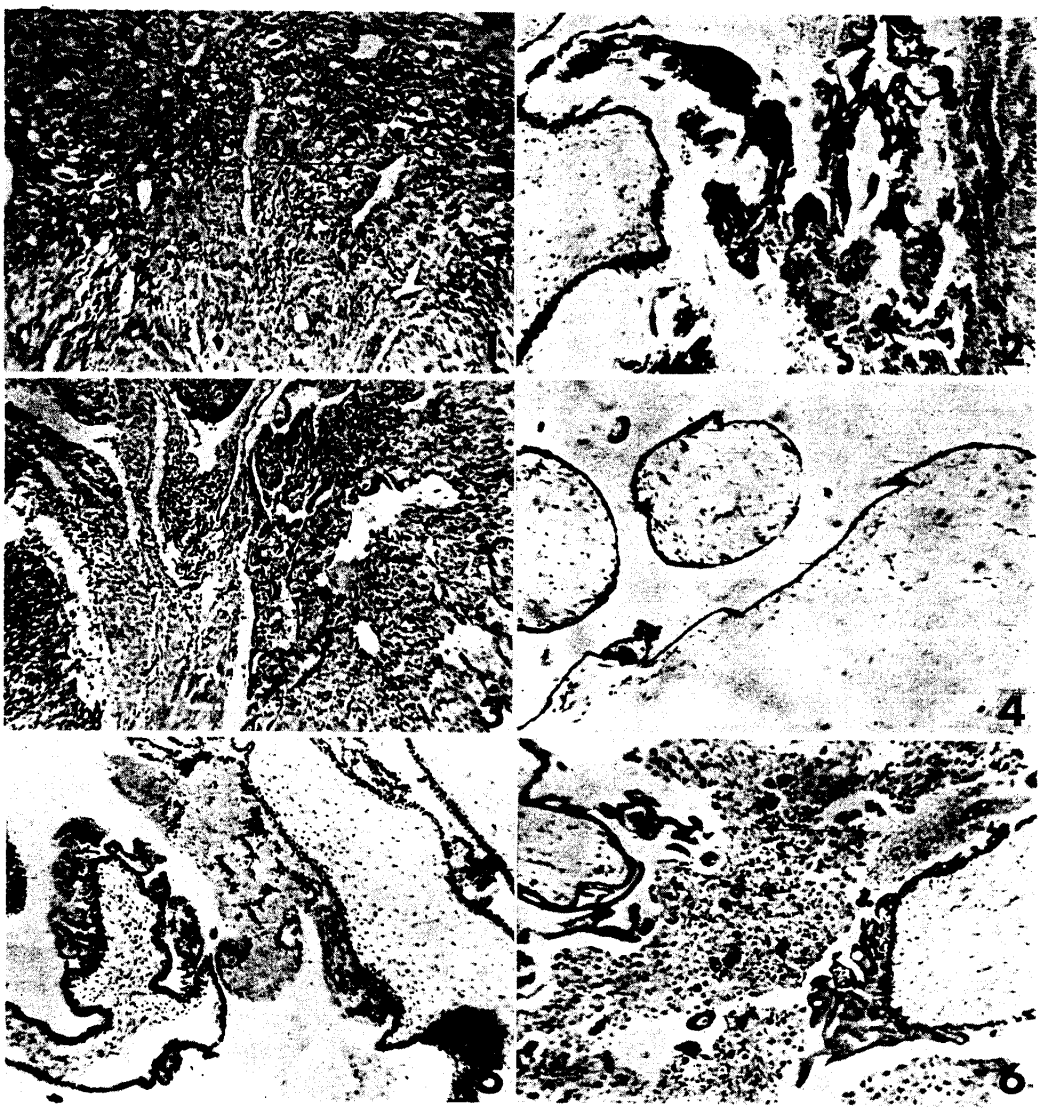

Fig. 1. Syncytial Endometritis (SE)
Fig. 2. Chorioadenoma Destruens (CA)
Fig. 3. Choriocarcinoma (CC)
Fig. 4. Hydatidiform Mole (Group I)
Fig. 5. Hydatidiform Mole (Group III)
Fig. 6. Hydatidiform Mole (Group V)

Explanations, see text.