RESUME.

1. Twenty-one cases, including the above-recorded case, of unmistakable chorio-epitheliomatous tumors, have been observed in locations remote from the placental site. No direct anatomic connection between the tumor and the placental site was demonstrable.

2. These tumors have arisen while a fetus or hydatidiform mole was *in situ*, and at varying intervals of days and years following abortions, labors and the expulsion of hydatidiform moles.

3. The vagina was believed to be the primary seat of the tumor in 50 per cent. of the cases; the uterine musculature in 15 per cent.; the cervix, brain, kidney and labium, each 5 per cent. It was not always possible to identify the primary growth.

4. In all cases the growth presented the appearance of blood coagula, and were only identified with certainty by the aid of the microscope.

5. Nothing definite is known of the histogenesis. The degree of resistance of the invaded tissues probably determines the malignancy of these growths.

6. Microscopic examination of the tumor will demonstrate the presence of chorionic tissue, but will determine nothing as to the malignancy of the growth.

7. In primary vaginal and cervical growths it has been possible to make a highly probable diagnosis by a consideration of the history of the previous pregnancy, the occurrence of hemorrhage from the vagina, and by inspection of the tumor. The positive diagnosis was reserved for the microscope.

8. Sixty per cent. of the cases occurred between the ages of 30 and 41. The earliest was at 20 years of age, the oldest at 50.

9. Hemorrhage is the one constant symptom in the growths of the vagina and cervix, and should always arouse suspicion when occurring weeks, months or years after the termination of pregnancy, abortion or hydatidiform mole. The possibility of these growths occurring during the course of pregnancy must be borne in mind.

10. After the recognition of the primary growth outside of the placental site, an exploratory curettage is done and the scrapings examined by the microscope. If syncytial tissue is recognized, the uterus should be removed. Inasmuch as we are unable to judge the malignancy of the scrapings from the uterus in such cases, it would seem wise to anticipate the existence of a malignant growth by removing the uterus.

11. The malignancy of these growths can only be determined by the remote results. If the individual makes a permanent recovery after the removal of the primary growth, we are at a loss to know whether the growth was malignant.

12. It is necessary to give a guarded prognosis in all cases, because of the uncertainty as to the existence of metastatic growths, and the inability to differentiate a benign from a malignant growth.

100 State Street.

Health of Pilots.—The *Australasian Medical Gazette* states that the following regulation has been gazetted under the navigation act in New South Wales:

No person appointed as first-class pilot shall be deemed eligible to continue to hold such position and discharge the duties thereof unless, in addition to compliance with other regulations relating to licensed pilots, at least once in each year he attends before a medical officer appointed by the treasurer, and obtains a certificate under his hand that he is in good health and not affected with any bodily or mental complaint or infirmity rendering him unfit to perform the duties of a pilot, particularly as to sight (vision and color), hearing and speech.

We understand that similar action is also being taken in Victoria.

THE DOWNES ELECTROTHERMIC CLAMPS.

FURTHER EXPERIENCE IN THEIR USE IN THE TREATMENT OF CANCER OF THE UTERUS.*

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The treatment of cancer of the uterus is one of the important questions of the day. Without treatment the disease is a hopeless one and usually causes death within two or three years.

The accepted treatment for cancer of the uterus at the present time is hysterectomy; and, without entering into details, it may be stated that cases thus operated on before the disease has apparently invaded the parametria have the following results: The primary mortality of the operation is from 5 to 10 per cent. Adenocarcinoma of the corpus uteri is cured by hysterectomy in about 75 per cent. of the cases. Epithelioma of the cervix uteri is cured in about 10 per cent. of the cases. Less than 10 per cent. of cases of adenocarcinoma of the cervix uteri are cured by hysterectomy.

Perhaps these figures would be more accurate if it were stated that this is the general average rather than the results secured by early operation. The results should be somewhat better in selected cases. My own results correspond with these figures. Taking all the cases of cancer of the uterus on which I have operated, about 20 per cent. of those subjected to hysterectomy have remained free from recurrence at the end of five years. This includes all three classes of cancer of the uterus, and the apparently high percentage of cures is due to the fact that the general average is raised by the proportion of cancers of the corpus uteri.

The alternative operation which has been practiced is amputation of the cervix in cases of cancer of the cervix uteri. The amputation has been practiced by removing the cervix with the knife and scissors, and also with the galvanocautery. The names of Sims and Schroeder are intimately associated with the first operation, and the name of Byrne with the second.

So far as statistics can determine the results of operations there is not much to choose between the results of amputation of the cervix and hysterectomy. As a matter of fact the results named by Byrne are better than those secured by hysterectomy. Every one, however, who has had large experience in dealing with statistical statements knows the difficulty of presenting statistics which will tell absolutely the truth about the subject.

The general results of operation for cancer in all portions of the body make it appear reasonable that hysterectomy should give better results than amputation of the cervix, because it is well known that, as a rule, cancer has invaded the tissues more widely than is apparent on clinical examination; and, therefore, in spite of the statistical evidence, most surgeons are convinced that hysterectomy should have the preference over amputation of the cervix in all cases in which hysterectomy is feasible. Nevertheless, it is true that no one has presented statistics so good as those of John Byrne of Brooklyn. This being true, when Dr. A. J. Downes of Philadelphia offered the profession a practical electrothermic clamp with which hysterectomy for cancer can be done without increasing the primary mortality of

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HYSTERECTOMIES WITH "DOWNES CLAMPS."

Number.	Name and Date.	Married, Single or Widow.	Age.	Children.	Miscellaneous.	Diagnosis.	Condition of Patient Before Operation.	Operation.	Time.	Drainage.	Course.	Temp.	Subsequent History.
1	Mrs. H. 9-27-02.	W.	48	5	0	Squamous carcinoma of cervix.	Uterosacral ligaments invaded.	Celiotomy; pan-ophorosalpinghysterectomy, combined in e t h o d; clamps used first in vagina.	100 G a u z e in vagina.			Febrile	Died about 10 months after operation from cancer.
2	Mrs. B. 10-5-02.	M.	50	2	0	Squamous carcinoma of cervix.	Parametria invaded.	Celiotomy; pan-ophorosalpinghysterectomy, combined in e t h o d; clamps not used first in vagina.	140 G a u z e in vagina.			Febrile	Died 10 months after operation from cancer.
3	Mrs. B. 10-5-02.	M.	42	6	0	Epithelioma of cervix.	Extensive involvement of cervix.	Celiotomy; pan-ophorosalpinghysterectomy.	67 G a u z e in vagina.	Left lobar pneumonia.		Febrile	Unable to trace subsequent history.
4	Mrs. K. 10-25-02.	M.	35	2	0	Squamous carcinoma of cervix.		Celiotomy; pan-ophorosalpinghysterectomy; uterus amputated above internal os; cervix removed from below.	115 None	Died.		Febrile	
5	Mrs. C. 10-27-02.	W.	43	10	0	Squamous carcinoma of cervix; uterosacral ligaments involved.	Uterosacral ligaments invaded.	Celiotomy; pan-ophorosalpinghysterectomy; uterus amputated, cervix removed from below.	80 G a u z e in vagina.			Af'ble	Recurrence in scar in vagina, 9-11-03.
6	Mrs. McC. 3-7-03.	M.	52	2	2	Squamous carcinoma of cervix.	Nephritis; parametria invaded.	Celiotomy; pan-ophorosalpinghysterectomy.	80 G a u z e in vagina.	Ureterovag. fistula.		Febrile	Spontaneous healing in nine months—free from growth.
7	Mrs. K. 3-23-03.	M.	35	3	3	Squamous carcinoma of cervix.	Extensive involvement of cervix. Prognosis doubtful.	Celiotomy; pan-ophorosalpinghysterectomy.	125 G a u z e in vagina.	Vesicovag. fistula.		Febrile	Family physician reports recurrence.
8	Mrs. C. 4-22-03.	M.	31	0	1	Squamous carcinoma of cervix, early; right hydrosalpinx.	Uterovaginal space invaded. Prognosis doubtful.	Celiotomy; pan-ophorosalpinghysterectomy.	120 G a u z e in vagina.	Vesicovag. fistula.		Febrile	Fistula closed spontaneously a few weeks after operation.
9	Mrs. H. 11-6-03.	M.	44	3	0	Adenocarcinoma of cervix.	Parametria invaded; prognosis bad.	Celiotomy; pan-ophorosalpinghysterectomy.	60 G a u z e in vagina.	Ureterovag. fistula.		Febrile	Fistula apparently is closing; no involvement can be made out.
10	Mrs. L. 12-11-03.	M.	42	4	0	Adenocarcinoma of corpus uteri; intramural fibromyoma.	Parametria invaded; prognosis bad.	Celiotomy; pan-ophorosalpinghysterectomy.	125 G a u z e in vagina.	Ureterovag. fistula.		Febrile	Fistula closed spontaneously in 10 weeks. Died five months after operation.

the operation, it seemed to me a step in advance, and I was prepared to adopt this instrument for the treatment of cancer of the uterus, because it seemed to me that through the employment of this instrument we could secure the advantages of hysterectomy and also the advantages of the electrothermic cautery as employed by Byrne, and that, therefore, the results of hysterectomy performed by means of the electrothermic clamp should be still better than is true of hysterectomy performed in the usual manner, or the results secured by Byrne through amputation of the cervix with the galvanocautery knife together with the roasting of the adjacent parametrial tissues with the electrocautery.

At the meeting of the Southern Surgical and Gynecological Association in Cincinnati, Nov. 11, 1902,¹ I read a paper entitled "The Use of the Electric Cautey Clamp in the Treatment of Cancer of the Uterus." I reported four hysterectomies for cancer of the uterus. Three of the patients made typically good recoveries from the operation. The fourth case died mainly as the result of an accidental hemorrhage. I stated that this experience, while not large, was sufficient to convince me that the method has certain practical advantages. "It guards against oozing hemorrhage from numerous small vessels, which is so annoying in operations for cancer, and it leaves a dry field of operation to be buried under the peritoneal flaps. The special points in the method which appeal to me are: First, by its use less blood is lost during operation; second, the lymphatics are sealed up, thus lessening the risk of septic absorption and implantation of cancer; and third, more of the broad ligament is removed than by the usual operation. If the ligature is used, the needle must be passed to the uterine side of the ureter, and fear of including the ureter inevitably tends to make the ligature hug the uterus. Not only is this true, but the button which is left requires that the broad ligament tissues shall be cut directly against the cervix. With the cautery lamp, at least one-third of an inch of tissue is cooked outside of the uterus, and the tissues beyond are more or less heated. This is an absolute advantage, unless experience shows a certain percentage of ureteral fistulae from cooking this structure."

I wish to present the additional cases operated on since that date, together with the present condition of the cases already reported and those operated on since the date of my last communication.

In justice to the method it should be stated that the ten cases operated on by means of the electrocautery clamp were, without exception, advanced, or, rather, unfavorable cases. A number of them would have been refused operation by the ordinary methods. In the first case the uterosacral ligaments were involved. In the second case the parametria were invaded. In the third and fourth cases the cancer of the cervix was extensive. In the fifth case the uterosacral ligaments were invaded. In the sixth case the parametria were invaded and the patient had also a chronic nephritis. In the seventh case there was extensive involvement of the cervix and the prognosis was doubtful. In the eighth case the uterovesical space was invaded and the prognosis was doubtful. In the ninth case the parametria were invaded and the prognosis was bad. In this case the disease was far advanced and operation would not have been undertaken by the ordinary methods. In the tenth case the parametria were invaded, the prognosis

1. Am. Gynecology, December, 1902.

was bad and the operation would not have been undertaken by the ordinary methods.

This analysis of the cases shows that the results secured in this series of ten cases should not be taken as typical nor as representing what can be secured by the method in selected cases.

In discussing the advantages and disadvantages of the method in my previous communication, I stated that in my judgment an objection to the method, theoretically, seemed to be that it might well happen that a larger percentage of fistulæ would follow the use of the electrothermic clamp than the usual methods of operation. My experience has borne out this theoretical consideration, because of the nine cases there have been three ureterovaginal, and two vesicovaginal fistulæ. In one case of ureterovaginal fistulæ there was a vesicovaginal fistula in addition.

I have had the remarkable experience that of the three ureterovaginal fistulæ, two have healed spontaneously and one gives every appearance of spontaneous closure.

The first ureterovaginal fistula closed nine months after the operation. The second ureterovaginal fistula gives every appearance of closure five months after operation. The third ureterovaginal fistula closed ten weeks after operation. The first vesicovaginal fistula is still open thirteen months after operation, and the patient now has a recurrence. The second vesicovaginal fistula closed spontaneously within a few weeks after her discharge from the hospital.

This experience bears out the theoretical objection to the clamp that it would give a relatively high percentage of fistulæ. As to the ultimate results secured, the first patient died about ten months after operation. The second died about ten months after operation. The third patient has been lost sight of. The fourth patient died largely as the result of hemorrhage during the operation. The fifth patient, a very unfavorable one, is still alive, but undoubtedly will die from the disease, as there is an extensive growth. The sixth patient, a most unfavorable one, shows no evidence of recurrence thirteen months after the operation. The seventh patient, also an unfavorable case, has a recurrence. The eighth patient, also an unfavorable one, shows no evidence of recurrence one year after the operation. The ninth patient, a very unfavorable one, shows no evidence of recurrence. The tenth patient, a very unfavorable one, died five months after the operation.

It has always been my habit to present the unfavorable side of operations as well as the more pleasing side, and therefore I have made this supplementary report.

Those who oppose operation for cancer might conclude that their contention was supported by this experience. I do not feel at all that this is true, as this series of cases was a most unfavorable one, and undoubtedly the patients embraced in this series have suffered much less as a result of operation than they would have done without it. It seems to me that the true conclusion to be drawn from my experience with this series of cases is that the most pressing need in the treatment of cancer of the uterus is that the diagnosis of the disease shall be made early, in order that the patients may be submitted to early operation. In that case I feel confident that much better results can be secured.

So far as the electrocautery clamp is concerned, I believe that we should secure better results with it than with the ligature, knife and scissors, used after the

classical technic. Also, I am firmly convinced that hysterectomy can be performed with relative safety in a more advanced type of cases with the electrocautery clamp than is true of the classical technic. This is because a dry field is left after operation. On the other hand, I am satisfied in this class of cases that a definite percentage of ureteral and vesical fistulæ will be produced.

THE INVASION OF CARCINOMA CERVICIS UTERI INTO THE SURROUNDING TISSUES

AND ITS BEARING ON THE MORE RADICAL OPERATIONS FOR THAT DISEASE.

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(Concluded from p. 1275.)

OPERATIVE TREATMENT OF CARCINOMA CERVICIS UTERI.

It is evident that hysterectomy alone seldom cures this condition. As, for instance, in 12 of 15 cases in which the more radical operation has been done, the growth was found to have extended beyond the uterus, as has been mentioned in this paper. In the Johns Hopkins Hospital there have been 63 vaginal hysterectomies, with 5 deaths; 26 combined abdominal and vaginal hysterectomies, with 5 deaths, and 67 abdominal hysterectomies, with 16 deaths. The comparison of the percentage of cures and also the primary mortality in these three classes of cases is of no value, for the abdominal or combined abdominal and vaginal operation has in many instances been used instead of the vaginal operation, because the growth was too far advanced for the vaginal route. It can never be hoped that the abdominal operation will be attended with as low a primary mortality as the vaginal; on the other hand, by the vaginal route the wide excision of the parametrium and pelvic lymph nodes is impossible.

Whether one shall employ the vaginal route or the more radical abdominal operation in these cases can not be determined from statistics, for sufficient time has not elapsed since the use of the more radical abdominal operations to furnish enough cases to compare with those removed by the vaginal route.

Olshausen¹³ has recently endeavored to compare the results of the two methods of operating, and concludes that for the majority of cases he prefers the vaginal hysterectomy. He states that he has had 671 cases, of which 31.6 and 44 per cent. (two periods) were operable, with a primary mortality of 6 per cent.; 74 per cent. of the cases operated on were free from recurrence at the end of two years, and 38.8 per cent. at the end of five years. He compares these with Wertheim's 120 cases, of which 40.3 per cent. were operable, with a primary mortality of 20 per cent., and 77 per cent. free from recurrence at the end of two years. Five years have not elapsed since Wertheim's first cases were operated on, so one has no way of comparing the results at the end of this time. Our results, with less than 25 per cent. free from recurrence at the end of five years, as compared with Olshausen's 38.8 per cent., can only be explained on the ground that in the patients who were operated on by him the growth was limited to the uterus

13. Olshausen: Zum Vergleich der vaginalen und abdominalen Operationsmethode bei Carcinoma uteri, Zeitschrift f. Geburt. u. Gyn., 1903, vol. 1, No. 1, pp. 1-6.