A Post-Graduate Lecture

ON

THE PRESENT POSITION OF THE TREATMENT
OF CARCINOMA OF THE CERVIX.DELIVERED AT THE MANCHESTER ROYAL INFIRMARY,
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BY

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IN the last fifteen years, with the general adoption of Wertheim's hysterectomy and the discovery of the effect of radium on the disease, the prognosis in cancer of the cervix has been greatly improved, though it is still anything but satisfactory, and can hardly be so as long as the cause of the disease is not definitely known. At the present time some of the best scientific minds in the profession are working on the problem, and there is every hope they will ultimately solve it; until then the treatment must necessarily be in the nature of groping in the dark; but in spite of this great handicap the clinician has made steady progress, and it is with the object of comparing the results of treatment obtained to-day with those obtained before the adoption of Wertheim's hysterectomy and radium that I have chosen this subject now.

DIAGNOSIS.

It is impossible to discuss the treatment of cancer of the cervix without saying a few words about diagnosis, for the two are indissolubly connected.

Unfortunately a very large number of patients suffering from this disease come to us too late for treatment to hold out any hope of cure. This is very largely due to the patient seeking medical advice very late, in some instances because there is an ineradicable belief in the female mind that haemorrhage at any time is more or less normal, and in others because the patient fears to have her own fears confirmed; there are, however, a certain number of cases where the patient consults her own doctor, who treats her symptoms empirically without a vaginal examination, and so valuable time is lost before she is sent to the gynaecological surgeon.

Cancer of the cervix may produce many symptoms, but the one symptom which is hardly ever absent is haemorrhage. It is very difficult for a doctor in general practice to suggest making a vaginal examination on every woman who comes to him complaining of haemorrhage, but it would be very much better if this could be done, and it should be insisted upon if the haemorrhage does not cease after two or three weeks' treatment, for cancer of the cervix may occur at a very early age. I have seen it as early as 22 and 24 years of age, though it is very much more common in patients who have passed the fortieth year. After that age no patient who complains of haemorrhage should be treated until a vaginal examination has been made, and this becomes increasingly important as the age of the patient advances, and is most important when the haemorrhage commences after the menopause.

Moreover, no opportunity should be missed of impressing upon women the fact that increased haemorrhage at the menopause, and any recurrence after the menopause, is always due to some pathological condition and should lead the sufferer to consult her doctor at once.

If only we could get women to realize this fact and consult their doctor whenever it occurs we should get a much higher percentage of early cases of cancer of the cervix to deal with and a much larger percentage of cures.

Pain is considered by women themselves and frequently even by doctors as an important sign in cancer of the cervix. This is not so. If the patient suffers from pain due to cancer of the cervix the disease has extended beyond the cervix and there is little hope of cure. Another fallacy is that cancer of the cervix occurs in thin, tired-out anaemic patients. In my experience the largest number of patients suffering from cancer of the cervix are stout, fairly healthy-looking women, and one of the biggest draw-

backs to the performance of Wertheim's hysterectomy is the amount of abdominal fat which occurs in so many of the patients.

OLD METHODS OF TREATMENT.

When I was resident surgical officer at St. Mary's Hospital, before the adoption of Wertheim's hysterectomy and before it was known that radium affected the growth, cases of cancer of the cervix were divided into two groups for treatment.

In the early cases vaginal hysterectomy was performed; in the cases too far advanced for this the cervix was scraped and cauterized. It was only in very rare instances that the patient, after vaginal hysterectomy, did not have fairly early recurrence of the growth, and that is what would be expected. In the first place, cancer of the cervix very quickly extends beyond the cervix, and in a vaginal hysterectomy the line of incision is bound to cling very closely to the cervix from fear of damaging the ureter, so that in a large proportion of cases the outlying cells of the growth are not removed; and in the second place, the malignant mass on the cervix is rubbed into the raw wound during the manipulations of the operation. From one or other of these two causes early recurrence was almost inevitable.

The advanced cases were scraped and cauterized simply as a palliative measure and without any hope of cure, though many improved markedly in general health, and were free from local symptoms for some months, due to the removal of the sloughing infected tissue from which toxins were absorbed. This was the position of the operative treatment of carcinoma of the cervix fifteen years ago.

WERTHEIM'S HYSTERECTOMY.

A great advance in the treatment of cancer of the cervix was the adoption of Wertheim's hysterectomy, which differs in two main principles from the old vaginal hysterectomy or abdominal panhysterectomy. In the first place the ureters are dissected out and retracted to each side, so that the whole of the parametrium out to the iliac vessels can be removed, and along with this any enlarged glands situated along the iliac vessels.

In the second place the dissection is carried down the vaginal wall, which is then well clamped below the cervix and cut across below the clamps, so that the uterus is removed with a cuff of the vagina clamped over the cervix to prevent cancer cells being rubbed into the raw area.

I did my first Wertheim's hysterectomy in 1911, and a very difficult proceeding I found it to be. Until that time, as far as I know, only two of these operations had been done in Manchester, both by Dr. Donald, and I had assisted him on both occasions, but though I realized that the operation presented very great difficulties it was only when I came to perform it myself that I recognized their true magnitude.

Fortunately this patient did very well, and after a time I lost sight of her until, in September, 1916—that is, five and a half years after my operation—she was sent to me from another town by another doctor with a small epithelioma in the vagina, its upper edge being quite a quarter of an inch below the scar in the vagina. This patient I have included in the cases of recurrence, but I can hardly consider it a true recurrence, as it looks more like a new growth in a patient who is susceptible to cancer.

In the following year I did the operation four times with three deaths, and it was only the knowledge that these patients were doomed if treated by any other method which allowed me to continue performing this operation.

It must be remembered that at this time few operators had adopted the operation and the details were not standardized, so we were constantly trying new methods. Gradually our present technique was evolved, with vastly improved results. The following year I performed the operation seven times with one death.

Operability.

Judgement on this point varies very considerably in different centres and with different operators. Some surgeons will only perform the operation in the very earliest cases, while others, knowing that it holds the only hope of cure, and that some of the apparently advanced cases remain free from recurrence after the

operation, perform it upon all possible cases. In some centres all cases diagnosed as carcinoma of the cervix seem to be referred to the gynaecological surgeons, while in others the doctors in charge of the cases only refer those which they consider operable; that is the only explanation I can offer for the great divergence in the operability percentage of surgeons who are operating upon every possible case.

Berkeley and Bonney¹ give their operability percentage as 67; Mayer² from the Freund-Wertheim clinic gives it as 65.3 per cent.; while Wilson³ estimates his at only 32.5 per cent.

Unfortunately I cannot give my total operability percentage as all our out-patient records are destroyed at St. Mary's Hospital after three years, but during the last six months I have kept a careful record of all cases of cancer of the cervix seen by me at the Manchester Royal Infirmary, St. Mary's Hospital, and in private.

During the six months I have seen 41 cases of carcinoma of the cervix, and have been able to do a complete Wertheim's hysterectomy on 11—that is, 26.8 per cent. So many cases are sent to us in a very advanced state that this seems to me the highest percentage of operability we can obtain in Manchester, as in this series I have operated upon every possible case, in fact, in several other cases I opened the abdomen but was unable to complete the operation.

These figures show the importance of educating the public to the necessity of consulting a medical practitioner whenever there is excessive haemorrhage, and especially when this recurs after the menopause, and also of the importance of a vaginal examination being insisted upon in each case. If only the diagnosis could have been made early the operability would have been 100 per cent.

Mortality.

With such an extensive operation the mortality is of necessity very high, and the more advanced the case, which means necessarily more extensive operation and a feebler condition of the patient, the higher is the mortality. If patients would only consult us when first the symptoms appear not only would the operability be greatly increased but the risks of the operation would be greatly diminished. Berkeley and Bonney⁴ quote their mortality as 22.5 per cent. Wilson⁵ gives it as 28.4 per cent., and in his later cases he has got it down to 10 per cent. Wertheim⁶ quotes his mortality as 15.2 per cent., though it was 40 per cent. in his first thirty cases and only 7 per cent. in his last thirty cases.

I have performed the operation on 89 patients, 17 of whom died from the effects of the operation—a mortality of 19.1 per cent. This includes all my early cases, and if I deduct my first year the percentage of mortality is very considerably reduced. At first sight this mortality seems appalling, but we must remember that this list includes advanced as well as early cases; if the latter alone were operated upon the mortality would be little more than with simple panhysterectomy, but as this operation alone gives any chance of cure, and without it the patient is irrevocably condemned to death, common humanity compels a conscientious operator to attempt the operation in all possible cases, even though the mortality is so high. This again emphasizes the importance of early diagnosis: if these cases came to us at an early stage, not only would the operability percentage increase but the mortality would greatly decrease.

Percentage of Cures.

Berkeley and Bonney⁷ published a series of 112 cases of cancer of the cervix seen by them, of which they were able to operate upon 63 per cent. Of the whole number of cases seen, 26 per cent. were well three years after the operation. We have only to consider the results from vaginal hysterectomy which were obtained ten or fifteen years ago to see what an enormous advance has been made during this time. As I have no record of the total number of cases I have seen of cancer of the cervix I cannot give the percentage of those which are well at the present time, but I have followed up the after-history of all my cases, with the following results:

Several of the patients on whom I have performed this operation were suffering from cancer of the body; a number of other cases have been done within the last

year, and 2 cases I have been unable to trace, so that I have only 59 cases upon whom I did a Wertheim's hysterectomy more than one year ago. Of these, 12 died from the operation, 21 have died of recurrence, and 26 are now alive and well.

Period of Recurrence.

13	recurred in the first year
5	" second year
2	" third year
1	" sixth year

Although I have placed 5 patients as having had recurrence in the second year, in all probability these had some recurrence in the first year, as none of them reported themselves as being very well at the end of the first year, so it will be seen that the majority of recurrences occurred at a very early date; in fact, if a patient reports that she feels very well one year after the operation, has a good colour, and is putting on weight, she has a very good chance of complete recovery.

The one which I recorded as having recurrence in the sixth year is the one mentioned above as the first case I operated upon, and one which seemed to be a new growth occurring in a patient susceptible to cancer. Of the 26 who are well at the present time

4	have been operated upon more than one year.
5	" " " " two years.
2	" " " " three years.
10	" " " " four years.
1	" " " " five years.
2	" " " " six years.
2	" " " " eight years.

Of all the patients upon whom I have done this operation more than one year ago, and who recovered from the operation, 55.3 per cent. are alive and well to-day.

RADIUM.

The next great advance in the treatment of carcinoma was the discovery that radium had a powerful action on the growth. Great claims were made for it when first it was introduced, as is always the case with a new "cure" for cancer, and its reputation naturally underwent a reaction when later it was discovered not to be so beneficial as at first claimed; now, after several years of patient observation, we are able to adopt a more just opinion of its value. During these years much experimental work has been done in the methods of application, and undoubtedly much better results are now obtained than when it was first introduced, and though I do not think we are yet justified in relying upon it alone, I have great hopes that the future will allow us to do so.

In many parts of the body radium, apparently, has little effect on malignant growth, but upon cancer of the cervix, about which I can specially speak, its immediate effect is little short of marvellous, though the ultimate results so far have been disappointing. The literature on this subject is now very large, and the results recorded differ so considerably, even with the same dose of radium and the same methods of application, that I can only conclude that many observers are tinged with the enthusiastic optimism of the specialist. Fortunately in Manchester we possess a large amount of radium in the Radium Institute, and more fortunately we are blessed with a radiologist in charge of it, Dr. Burrows, who, while he is enthusiastic and obtains as good results as anyone working in this field, does not allow his enthusiasm to blind his judgement, and never claims anything for radium which he cannot produce.

I have worked with him much in the last six years, and he has often urged me to operate upon cases when I have been inclined to leave them to him. It is by this combined work of the radiologist with the surgeon that the best results can at present be obtained.

My first personal experience with radium was in 1914. I was called out to one of the Lancashire towns in consultation, and found a lady suffering from inoperable carcinoma of the cervix, with a mass the size of an orange on the left side of the uterus. The patient was 53 years of age, and I was most anxious to do something for her. Dr. Burrows had just arrived in Manchester, but his radium had not, so he kindly obtained some emanation tubes from London, and treated the patient for me. The result was little short of marvellous; altogether she had three applications in the course of twelve months, and both the

primary growth and secondary mass disappeared, so that, at the end of the twelve months, no growth could be discovered—just a normal sized uterus and cervix, somewhat fixed to the left side of the pelvis with scar tissue; her general health was much improved, and she was free from pain. Unfortunately, this good result did not last long. Soon the pelvic mass re-formed, and continued to grow in spite of further applications of radium. The bladder and rectum became involved, and the patient died at the end of the second year from my first seeing her. The net benefit was probably one year's extra life, and I do not think the final stage was so distressing as is often the case.

Since that time Dr. Burrows has treated a large number of my cases of carcinoma of the cervix with radium. A large percentage of these cases showed a marked improvement with the treatment, in many the disease had apparently disappeared when the patient was examined two months after the application, but in only one case of mine has the improvement lasted more than one year. This is very disappointing. The initial improvement is, however, so marked that I still hope further experiments with different methods of application may lead to complete cure.

We must also remember that all these cases were far advanced and inoperable, probably better results would be obtained in early cases, but neither Dr. Burrows nor myself yet feel justified in treating early cases with radium alone.

The one exception I mentioned above was seen by me in March, 1918, and then had carcinoma of the cervix which was quite inoperable. Radium was applied in the Christie Hospital in 1918, 1919, and 1920. She was 47 years of age when first seen, and since the last application has been quite free from haemorrhage. I last saw her in May, 1921, and found the cervix quite smooth and with no trace of friability.

Wertheim's Hysterectomy after Radium.

In November, 1916, I was asked to see a patient with Dr. Christie of Longsight. She was 45 years of age, had not passed the menopause, but had had excessive haemorrhage for six months. We found that she had a large friable carcinoma of the cervix extending on to the vaginal walls. At that time I was advising Wertheim's operation in all cases where operation was possible, but this case was far too advanced for me to attempt operation. Dr. Burrows treated her with radium in December, 1916, and in February, 1917, we again examined her. The result was excellent; the cervix had contracted to little above normal size, had lost all its friability, and, so far as we could tell, was not fixed. Apparently the case was now operable, and Dr. Burrows urged me to operate, as our previous experience led us to believe that while radium killed most of the malignant cells a few were left in the deep tissues which could not be reached with radium, and these would soon break into active growth. In March, 1917, I did an extensive Wertheim's hysterectomy and found it more difficult than I had expected. What had been new growth previously had contracted into hard, cartilaginous tissue from which the ureters could only be dissected with great difficulty. This I subsequently found to occur in all cases treated with radium, and difficult as an ordinary Wertheim operation is, the difficulties in these late cases treated with radium are increased tenfold. For this reason I have had to abandon several subsequent operations, as I found it impossible to dissect out the ureters. In this first case I was able to complete the operation and remove all the sclerosed tissue.

I have seen this patient at intervals since the operation, and to-day, over four years since my first examination, she is very fit and well, putting on weight, doing her housework, and during her last summer holiday walked seven miles on each of four consecutive days. Since that time I have operated upon 10 cases which were far too advanced for operation, and I have had only two deaths from the operation, though it is very much more difficult and severe than an ordinary Wertheim operation in an early case. In 5 other cases, however, I have had to abandon the operation owing to the impossibility of separating the ureters.

Of the 8 cases which recovered from the operation, 5 are well to-day, one four years and another three and a half years after the operation. In 3 recurrence has taken

place. One of the patients had malignant cells in one of the iliac glands, though the cervix showed none on microscopical examination, the growth in the cervix having been entirely killed by the radium, and this patient is very well—two years after the operation. In fact, when I saw her three months ago she had become so stout I did not recognize her, and yet two years ago she was a thin, poor woman obviously dying from cancer.

We must remember that all these cases were too far advanced for operation when first seen, but radium made operation possible, though with this alone recurrence would probably have occurred within one year. So impressed have I been with these results of the combination of radium and operation that I now never operate upon any case of carcinoma of the cervix without a preliminary application of radium. I operate one week after the application of radium and find the tissues have not been sclerosed in this short interval, and so the difficulties of the operation are not increased and the patient has the benefit of both treatments.

Whether in the future new methods of application will make it possible to cure cancer of the cervix by radium alone and to discard this very severe operation of Wertheim's hysterectomy, time alone will show. I sincerely hope it will be so, but the time is not yet. At the present time the best hope of complete cure of cancer of the cervix lies in the combination of radium with Wertheim's hysterectomy.

REFERENCES.

- ¹ *Gynaecological Surgery*, by Berkeley and Bonney.
- ² Quoted by Berkeley and Bonney in *Gynaecological Surgery*.
- ³ Thomas Wilson, "Cancer of the Uterus" in the *New System of Gynaecology*.
- ⁴ Quoted by Professor Thomas Wilson in "Cancer of the Uterus" in the *New System of Gynaecology*.
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- ⁶ Quoted by Berkeley and Bonney in *Gynaecological Surgery*.
- ⁷ Quoted by T. Wilson in "Cancer of the Uterus" in the *New System of Gynaecology*.

THE RADICAL ABDOMINAL OPERATION FOR CARCINOMA OF THE CERVIX.

RESULT OF ONE HUNDRED CASES BASED UPON FIVE
YEARS' FREEDOM FROM RECURRENCE.

BY

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In the *BRITISH MEDICAL JOURNAL* for September 30th, 1916, my colleague Comyns Berkeley and myself published the results of our first one hundred radical abdominal operations for carcinoma of the cervix (Wertheim's operation) reckoned on the basis of five years' freedom from recurrence. Of the 100 operations performed between April, 1907, and September, 1911, 51 were done by Berkeley and 49 by me. Between April, 1907, and July, 1915, I myself performed the operation 100 times, and by keeping in touch with the recovered cases was by July, 1920, in a position to review my results on the basis of five years' freedom from recurrence. In the manner of setting forth these results I am following the general plan of the paper written jointly by my colleague and myself in 1916, so that comparison of the results of the two series of cases can be more easily made, and the further to facilitate this I have contrasted the figures in parallel columns in the tables.

The Character of the Operation.

The operation performed has been the most thorough possible, for with the uterus and its appendages have been removed in all the cases the upper half or two-thirds of the vagina, the parametric and paravaginal tissue out to the pelvic side wall and down to the levatores ani and the glands in the obturator fossae and along the iliac vessels.

The Cases Operated On.

Every case has been operated on in which there appeared any chance, however small, of removing the growth, and amongst the patients were many who had been dismissed from other hospitals as inoperable. This policy, which has been steadfastly pursued by my colleague and myself since we took up the operation, is naturally followed in a number of cases by the necessity of closing