A Post-Graduate Lecture

ON THE

TREATMENT OF UTERINE FIBROIDS:*OPERATION OR RADIATION?*

DELIVERED AT THE MANCHESTER ROYAL INFIRMARY

BY

WM. FLETCHER SHAW, M.D.,LECTURER IN OBSTETRICS AND GYNAECOLOGY, VICTORIA UNIVERSITY,
MANCHESTER; HONORARY ASSISTANT GYNAECOLOGICAL SURGEON,
MANCHESTER ROYAL INFIRMARY; SENIOR HONORARY
ASSISTANT SURGEON FOR WOMEN, ST. MARY'S
HOSPITAL, MANCHESTER.

DURING the last few years there has been a flood of literature, chiefly from radiologists, pleading for radiation treatment of uterine fibroids rather than operation, and making the claim that the haemorrhage can be controlled by this means without any mortality; but from the first the more reliable authorities have recognized certain complications of fibroids as a contraindication to radiation, and this note of warning has been sounded more and more vigorously until now, when many of the radiologists advise operation in all cases in which there is no special contraindication to it.

At first sight radiation would seem to be a great advance in our method of treatment, but when the subject is considered more seriously there are found to be many fallacies and reservations.

In the first place, these papers usually discuss the subject as though haemorrhage was the only symptom. In the majority of instances it is the most obvious symptom, but it is by no means the only one to be considered, and in reviewing the whole subject the others must be conceded their due importance. Fibroids are very prone to undergo degeneration, and this is especially common about or after the menopause, so that many women who have safely passed the menopause require operation, and often an urgent operation, because of this complication. Along with this must be considered the liability of a fibroid uterus to become malignant: there is a considerable divergence of opinion upon the percentage of fibroids which become malignant, but there is no doubt that uteri with these tumours are more prone to this disease than normal uteri.

This aspect of the subject is entirely overlooked by many of the radiologists, who record their cases at too recent a date to allow this change to occur. There is no reason to suppose that when the menopause has been produced artificially by radiation the uterus is less liable to degeneration or malignant disease than one which has passed it naturally. Although my experience of radiation treatment of fibroids is small, I have once had to perform hysterectomy for urgent symptoms of degeneration six years after the menopause had been produced by this method. Before claims so extensive as those advanced by some authors are made it would be well to wait ten or fifteen years before recording the after-results. Moreover, good results are not claimed in the treatment of all fibroids. The cases must be carefully selected and radiation must not be used if the tumour is already undergoing degeneration or is complicated by inflamed appendages. How these conditions are to be diagnosed with certainty is not stated; the responsibility is to be left to a gynaecologist in each case, but, as every gynaecologist knows, it is often quite impossible to say before operation whether a fibroid is undergoing degeneration or is complicated by inflamed appendages.

One further point against treatment by radiation is the method of its action, which is supposed to stop menstruation through the action of the rays on the ovaries. In this way a young woman is as effectually sterilized as by a radical operation; whereas, if operation is undertaken instead of radiation, it is frequently found possible to do a myomectomy and leave a sound functioning uterus and ovaries.

Quite recently Giles¹ and Bonney² have usefully called attention to the advantages of myomectomy and pleaded for its more frequent use, although I think the operation is done much more frequently than they believe. It is such a well recognized operation that surgeons perform it in certain classes of case but do not trouble to write about it. In the

figures I quote later I am considering solely the advantages and disadvantages of operation and radiation, and as the risks and complications of myomectomy are about the same as those of hysterectomy I have not separated them. For these reasons I have always considered operation much the safer method of treatment, and would not consider radiation except in rare and carefully selected cases.

The only serious risk in operation for fibroids is the occurrence of embolism—fortunately a very rare accident, but a risk which is ever present, although an operator is lulled into a feeling of false security when no case has occurred for a long period. From this comfortable feeling of security I was rudely awakened by two fatal cases of embolism which occurred quite close together in my practice, and I was compelled to reconsider the whole subject very carefully, as it is a tremendous responsibility to advise a method of treatment which may be dangerous if there is an alternative treatment quite free from danger.

To form a reliable opinion of the relative results of these two methods of treatment it is useless to take a few picked cases; a sufficiently long series of consecutive cases must be taken, all treated by the one method, and the failures recorded. With this object I abstracted the notes of all the cases of uterine fibroids I had seen in the two years 1920-21—a period which included my two cases fatal from embolism.

In several of these cases the fibroids were so small and gave rise to so few symptoms that no treatment was advised, while in the remainder the only method of treatment was operation; so this can be taken as a consecutive series of cases treated by operation, and the number (138) is sufficiently large to give a fair average percentage of the risks of operation and the incidence of malignancy, degeneration, and other complications if the tumour is not removed. Amongst these cases were a certain number, undiagnosed before operation, with complications which could only have led to a fatal result if the whole series had been treated by radiation.

Mortality.

In this series of 138 operations (hysterectomy or myomectomy) there were four deaths (2.9 per cent.)—two from embolism, one from shock within twenty-four hours of the operation, and one from acute nephritis. Operations upon uterine fibroids have a somewhat greater risk than other simple abdominal operations owing to the anaemic condition of so many of the patients. In this series I find recorded in the notes of five of these patients that they were so anaemic I hesitated to operate, and in three instances kept the patient in bed some time before operation; amongst these five occurred three of my fatal cases, two of embolism and one of shock. If these cases had been handed over to the radiologist the only fatal case would have been the one from acute nephritis, the cause of which was obscure.

However, in trying to hold the balance evenly between the two methods of treatment I must put these four deaths against operation, and I am also accepting the statement that with radiation there would have been no primary mortality.

Malignant Disease.

Unfortunately, a microscopical examination was not made of all the specimens removed and it is quite possible that some cases of unsuspected malignancy were overlooked. Amongst those which were examined were five specimens of malignant disease of the body, all in women over 50 years of age, so it is quite probable the incidence would have been greater if all these fibroids had been unoperated upon until the patients had reached this age. In two of these cases the patients had ceased to menstruate and so the malignancy was suspected, but in the others there had been no period of amenorrhoea and the malignancy was only discovered in the laboratory.

If all this series of fibroids had been treated by radiation rather than operation the growth would have run its course and there would have been five deaths from this disease as against the four deaths from operation.

In addition to these five cases of malignant disease of the body there were three other cases with carcinoma of the cervix occurring along with fibroids of the body. I have separated these two groups as it is much easier to diagnose carcinoma of the cervix; nevertheless two of these patients

were referred to me by their own doctors on account of the fibroids, the carcinoma of the cervix having been overlooked in each case; had radiation been the recognized treatment for fibroids, the probability is that these growths would have remained undiscovered until a much later period, as the radiologist has no more special training in gynaecological diagnosis than the general practitioner.

Degeneration.

A degenerating fibroid may cause serious symptoms, either from the effect of the degeneration itself as in red degeneration, or because the degenerated tissue has become infected with organisms, or merely from the absorption of the products of degeneration. This last is, I think, much more important than is usually recognized, and accounts for the profound anaemia, often out of all proportion to the amount of blood lost, and the general ill health from which these patients suffer.

Unfortunately not all the specimens in this series were examined in the laboratory, but of those which were, twenty-one were reported as having undergone degeneration—cystic, red, calcareous, etc.; these degenerations occur much more frequently in fibroid uteri after the menopause when the blood supply is much diminished.

How often degeneration occurs in a fibroid after an artificial menopause produced by radiation I cannot say, my personal experience of this method of treatment being very small, but I see no reason to suppose its incidence to be less than in fibroids after a natural menopause, and I have seen one case which required operation six years after an artificial menopause produced by *x* rays. This complication is often overlooked in the papers advocating radiation, as the cases are too recent, and it would be useful to have some of these series reviewed ten or twenty years later.

It is impossible to say what would have happened to all these cases if they had been treated by radiation; I do not suggest all would have ended fatally, though probably some would; and certainly some would have required operation at a later date for urgent symptoms, when the patient's condition would make operation a much more serious matter. This danger is recognized by many radiologists, and the more experienced of them advise all cases of fibroid to be examined by a gynaecologist so as to eliminate degenerations of the tumour; but the great difficulty is to be sure without operation that a tumour is not undergoing degeneration, and the instances must be few in which a competent gynaecologist will take the full responsibility of saying there is no degeneration.

Inflamed Appendages.

This is a complication which precludes treatment by radiation, according to the authorities on this method of treatment. Of course, acute inflammation will usually give rise to acute symptoms which are easily recognized, but there are cases which only come under treatment after the acute symptoms have subsided. In this series there was only one case which could not be included in one or other of the categories, but there were several others with inflamed appendages complicated with degenerating fibroids or with adhesions to rectum or intestines.

Adhesions.

Adhesions firmly binding rectum, bladder, or intestines to the tumour contraindicate the use of radiation, and yet how often do we unexpectedly find these adhesions during an operation! The following case—one of the last in this series—is an instance:

An unmarried woman, aged 49, one year past the menopause, with no previous history of inflammation, was brought to me because of recurring haemorrhage. Examination revealed the presence of a fibroid uterus about the size of an orange, apparently quite mobile; there were no symptoms or signs suggesting degeneration, and it was just the case which would be referred to the radiologist if this form of treatment were used. I opened the abdomen and found both tubes and ovaries firmly adherent to the back of the uterus, but before I could find the tubes and the uterus, I had to separate the rectum and bladder from these organs and from each other. These adhesions were so firm that the rectum had to be cut off from the uterus and appendages, not stripped, as is usually possible.

In all probability these cases with unsuspected adherent rectum and intestines explain the damage to these organs which is occasionally reported after the use of *x* rays. In this series five cases are noted as having adhesions between the uterus and abdominal viscera. Though the number is

not very great, the frequent impossibility of diagnosing the presence of adhesions before operation greatly increases their importance.

Retention of Urine.

Seven patients, all about or past the menopause, were operated upon for this condition alone. In each case the uterine fibroid filled the pelvis, and had been allowed to drop into this position through atrophy of the tumour due to the menopause. I cannot say how far *x* rays would have still further diminished the size of the tumours and relieved the symptoms, but their application would have taken some little time, and have necessitated catheter treatment in the meantime. We must also bear in mind the action of radiation upon larger tumours, as the atrophy set up by this treatment may cause a fibroid situated above the brim to descend into the pelvis and set up acute symptoms.

Wrong Diagnosis.

Every gynaecologist knows the difficulty of making a correct diagnosis in these cases of pelvic tumour. This is recognized by the radiologists who have published their work up to this time, and the majority insist upon the necessity of an examination by a gynaecologist before *x*-ray treatment. I doubt whether this will be so in future. Even if a gynaecologist is consulted the risk is not entirely eliminated, and I have to confess to two bad mistakes made during the last two months. In both cases I diagnosed uterine fibroids, and fortunately advised operation, and in both cases the solid tumour proved to be carcinoma of the ovary. In both cases the tumour was not adherent and was removed, so that the patients have a very fair chance of being cured, which they would not have had with *x*-ray treatment.

Conclusions.

1. Small fibroids, not larger than an orange, which are not producing any symptoms may be left alone, but the patient should be kept under observation, as there is a possibility before the menopause of the tumour causing increased haemorrhage or increasing in size, and after the menopause of becoming malignant.

2. If the patient is very anaemic the tumour should be treated by radiation to stop the haemorrhage and allow her general health to improve, but the tumour should be removed later.

3. In all other cases the tumour should be removed by hysterectomy or myomectomy—myomectomy being preferred for women in the child-bearing period who desire a family and when a useful uterus can be left, panhysterectomy for cases with a badly lacerated cervix in addition to the fibroid, and supravaginal hysterectomy for the remainder.

REFERENCES.

¹Arthur E. Giles: Indications for and Results of Myomectomy for Uterine Fibroids, *Proc. Roy. Soc. Med.*, Section of Obstetrics and Gynaecology, 1922, p. 13. ²Victor Bonney: Scope and Technique of Myomectomy, *Journ. of Obstet. and Gyn. of the British Empire*, vol. xxix, No. 4.

The Oliver-Sharpey Lectures

ON

THE ACTIVITY OF THE CAPILLARY BLOOD VESSELS,

AND ITS RELATION TO CERTAIN FORMS OF TOXAEMIA.

DELIVERED BEFORE

THE ROYAL COLLEGE OF PHYSICIANS OF LONDON

BY

H. H. DALE, M.D., F.R.C.P., F.R.S.,

HEAD OF THE DEPARTMENT OF BIOCHEMISTRY AND PHARMACOLOGY UNDER
THE MEDICAL RESEARCH COUNCIL.

LECTURE II.

BEFORE we pass to some of the pathological applications of the knowledge now available concerning the active contractility and tone of the capillary blood vessels, there are a few additional points concerning its normal physiological significance which ought to be passed in review. Professor Richards of Philadelphia has found it possible by means of special lighting arrangements to see the capillaries between the tubules and in the glomeruli of the living frog's