REMARKS ON OÖPHORECTOMY IN THE TREATMENT OF CANCER OF THE BREAST.

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In a paper published in the *BRITISH MEDICAL JOURNAL* of October 2nd, 1897, I gave notes of 5 cases of cancer of the breast in which I had performed the operation of double oöphorectomy. The notes were brought down to August, 1897, so I am now able to add the results of more than a year's further observation.

In 2 (Nos. 3 and 4) of the 5 cases the ovaries were removed after the menopause; no obvious effect was produced upon the cancer, and one of these patients (No. 3) was dead before my paper was written. The other (No. 4, Fig. 1) had derived no

Fig. 1.—To show that the growth was not of "atrophic" type.

benefit in eight weeks. About August 20th, 1898 (seventeen months after the oöphorectomy), I saw this patient. She looked well, and was strong, and able to do all the work a woman of 66 could be expected to do. She had just returned from a seaside holiday, and felt very well. She believed that the "lump" on her chest was getting very slowly smaller, and I think it was smaller than a year ago. I could find no other recurrences, superficial or visceral. On December 1st, 1898, she wrote: "I am keeping as well as usual." In Nos. 1 and 2 I claimed that marked improvement had resulted from the operation. In No. 5 the oöphorectomy had been done quite recently. I propose to trace the further history of these cases, and to add two others.

CASE 1.—Oöphorectomy was performed on December 22nd, 1896, and my last note on August 16th, 1897, chronicled unexpected improvement, apparently connected with a sojourn at Shipley, near Bradford, a place which former experience had shown to "agree with" the patient better than any other place she had visited. After this visit she was in excellent health; the nodule in the pectoralis major had shrunk to about the size of a filbert in its shell, and all other cancer masses (with the possible exception of one subcutaneous nodule) seemed to have disappeared. Naturally, I recommended this lady to return to Shipley, and to stay there, but she did not do so.

After-History during 1897.—On October 22nd, 1897, her health remained excellent. The pectoral nodule was about the same, but the doubtful trace of the subcutaneous nodule (4 in the diagrams), which I thought I could feel in August, had gone. I again urged that she should have another change from her home in Rochester; and on October 25th she went to Hastings, and began taking two tabloids a day of thyroid extract, soon rising to three, which caused palpitation and shortness of breath. They were not long continued, and had no appreciable effect upon the cancer. On December 8th, 1897, she came up from Hastings. Her general condition left nothing to be desired. I thought the pectoral nodule somewhat larger, and there was slight fullness above the left clavicle with some difference to touch, but no definite gland.

History during 1898.—She went to Shipley for two months soon after this, but no beneficial action on the cancer resulted. On March 4th, 1898, she was in excellent health, and had put on flesh (she was always well covered). The pectoral nodule had not diminished. I thought there was some infraclavicular fullness; supraclavicular fullness was more distinct, and a small gland could now be felt. On October 11th, 1898, this patient called. She had been at the seaside a good deal since I last saw her, and had been very well. Her weight had been steady for some time at 12 st. 3 lbs. She had more colour in her face than I had ever seen before, and, indeed, looked "the picture of health." She had written me in

July that "the lump" (in pectoral) had "gone down very much," so that sometimes she could "scarcely feel it at all." I could find no nodule in the pectoral, but the muscle did not feel quite normal about its former site, and the deep parts were not quite so plainly felt through it on the left as on the right. I think there is slight fullness of the left pectoral region, but am not certain. The supraclavicular fullness is about the same as in March. The depression over the heart seems to be quite free from growth, and no subcutaneous or other secondary nodules can be found.

I do not think that all sign of cancer has yet disappeared in this case. I believe that the early continuous disappearance of cancer following upon the oöphorectomy was due to the removal of the ovaries, but I feel that there is room for doubt as to the cause of the late variations of the pectoral nodule.

CASE II.—In this case (Fig. 2) the most rapid and satisfactory disappearance of cancer nodules and infiltrations occurred during the first six months.

Fig. 2.—From a photograph by Dr. Horace Sanders, taken just before the oöphorectomy. These are the chief points shown: Thinness of patient; prominent gland above right clavicle; tri-radiate scar on right chest, with large nodule at meeting point of branches; a bridge-like prominence running from this up to clavicle with a nodule at its centre; general infiltration of the skin and subcutaneous tissue along and behind the lower limit of the scar, often closely adherent to the chest wall; a lower group of three nodules, of which the posterior is the larger: a nodule in the upper and outer part of left breast. There was a good deal besides which a photograph could not show.

Fig. 3.—August 6th, 1897. At first sight the scar and chest wall look absolutely normal; then faint red spots were noticed at (2), (5), (7?), and (9), increased by handling; skin here very slightly thickened. (11) A new skin nodule as large as a pea. (12) Perhaps thrice as large, dimpling skin. (12) Two or three axillary glands enlarged.

My last note (August 6th, 1897) stated that the operation scar and the surrounding chest wall looked practically normal. The patient had put on 11 lbs., and had gained colour, so that, though still thin, there was nothing unhealthy in her appearance. She was free from pain, had gained strength markedly, took a good walk daily, and seemed to have recovered her natural cheerfulness. But even at that date careful examination showed five spots (Fig. 2), at which slight redness and infiltration of skin remained; upon the right chest a small new skin-nodule had appeared; the growth in the left breast had trebled its size, involved the skin, and infected two or three glands in the axilla (Fig. 3).

After-History in 1897.—Nevertheless, the downward course as regards

Fig. 4.—October 8th, 1897. 2 and 5 redder and thicker; 5 adherent again; 7 and 9 about same; 10, and 11, rather larger; 12, same; 4, again a distinct nodule in pectoral; 13, fresh nodule over latissimus.

Fig. 5.—December 10th, 1897. Gland above clavicle again felt; 1, 2 is plainer; 4, size of 1d.; several new skin nodules, 15, 16, and one over right scapular angle; 10 larger, square inch of skin involved; several other nodules in breast—mastitis (?); 12, size of haricots.

general strength did not begin at once. On October 8th I saw this patient after a fortnight at Southend. She had gained another 1 lb. (12 lbs. in all since the operation); her strength remained the same as in August, or had perhaps increased, as she was now doing light household duties which naturally fell to her share. A chart of the chest showed marked increase of growth (Fig. 4).

The effect of the oophorectomy having been exhausted, it seemed to me that thyroid might fairly be tried. On November 22nd her medical attendant, Dr. Sanders, reported that she had been taking 20 grains a day for a month, that she was fairly well, but had lost 5 lbs. This could not be regarded as an improvement, and the thyroid was stopped.

On December 10th, 1897, I saw this patient for the last time. She was paler and markedly thinner; still fairly strong; viscera and bones apparently normal. Fig. 5 shows the superficial extension of the disease.

After-History in 1898: Death.—Death occurred on July 14th, 1898. The patient was confined to the house from the beginning of May, and to bed for about a month before death. She became greatly emaciated, but did not suffer much. Dr. Sanders, who took great interest in the case throughout, wrote me that nodules became so numerous over the front and back of the chest and over the front of the abdomen (some in the oophorectomy scar), that it was impossible to chart them. The mass in the left breast reached the size of a tangerine orange and ulcerated slightly; as also did a nodule in the right mid-axilla. Secondary growths were detected in the liver and in the sternal end of the left clavicle.

The total known duration of this case was two and a-half years; but evidently the growth had existed a considerable time before it was recognised. The patient was very feeble and suffering much pain when the oophorectomy was done. Improvement was immediate, both local and general. She continued gaining flesh and strength for eight months, though local increase of disease had begun at six months. It seems probable that her condition in February, 1898, was about the same as it was in February, 1897, the date of the oophorectomy; in other words, about a year of life, much of which was worth living, had been gained for her.

CASE V.—This case merits fuller statement than it received in my former paper.

History.—The patient was a rather stout, healthy-looking woman of 46, menstruating regularly, married, twelve children, no previous breast trouble, family history excellent. In December, 1895 (fifteen months before admission, she accidentally noticed a pea-like lump below and outside left nipple; it grew steadily and painlessly.

Condition when first seen.—In May, 1897, it was as large as a small orange; skin over it thinned, reddened, and centrally ulcerated; the nipple markedly retracted; pectoral fascia slightly involved. Axilla full and firm, and at least one enlarged gland could be felt. There was distinct fullness both above and below the clavicle, but no gland was felt. One or two glands were palpable in either posterior triangle. The edge of the liver could just be felt.

Oophorectomy, May, 1897.—In this case I felt that in spite of the widest operation I could perform, speedy recurrence was only too likely. It seemed to me, therefore, that the influence of oophorectomy should be at once invoked in aid of a radical operation. Accordingly, with the patient's consent, on May 19th, 1897, I removed two rather small ovaries, and went on immediately to a wide removal of breast, skin, pectoral fascia, and superficial fibres of the muscle and axillary contents. No nodules were seen or felt in the great pectoral. One or two small but very hard glands were found just below the clavicle. The wound was closed by widely undermining the flaps and using button sutures. The combined operation occupied 1½ hour, and some pallor was evident at the end; but this was from rather free bleeding from the breast. Healing by first intention of both wounds took place.

Condition in May, 1898.—I examined this patient on May 14th, 1898—a year after the operation. She was rather stouter than at time of operation. She looked the picture of health, and was obviously full of energy. There was no sign of superficial recurrence, nor could I find evidence of mischief internally.

No conclusion as to the value of oophorectomy can be drawn from this case. I can only repeat that I thought that the prognosis after my usual operation alone would be bad, and I should say that the state of matters found at the operation justified my fears. I asked this patient when I last saw her—that is, when she had had a year's experience of the general effects of the oophorectomy—whether, supposing she had again to decide, she would submit to the operation. Her reply was: "Most certainly." I heard as lately as November 26th that this patient was perfectly well and strong.

I will now give details of two other cases in which I have operated, but of which I have as yet published no account.

CASE VI. *History.*—A married woman, aged 31, was admitted in March, 1896. Her father died of cancer of the tongue. She had two children, the youngest being 8 months old. Six months ago, when nursing this child, she accidentally noticed a hard lump in her right breast, from which milk soon disappeared, while the left is still full, the child having only just been weaned from it. At the same time she noticed lumps in the right axilla, which, she said, had remained stationary while the mass in the breast had grown steadily. She had lost a good deal of flesh and strength; but, though thin, she had a good colour and was fairly strong.

Condition on Admission.—The right breast and nipple (not retracted) were a good deal smaller than the left. (Fig. 6.) A stony mass, ½ inch by 1½ inch, lay in the upper and outer quadrant, thinning, but scarcely adhering to, the skin, probably adherent to the pectoral fascia. Large glands could be seen in the axilla. Viscera and bones seemed unaffected.

Excision of Breast.—On March 21st, 1896, the breast was removed, with a

large piece of skin over the tumour, the pectoral fascia, the whole thickness of the great pectoral, deep to the mass, and the contents of the axilla from the subclavius down. The highest gland recognised was small but hard. The wound was closed with tension, but healed by first intention.

Fig. 6.—Right breast cancerous and smaller than left, which was full of milk, while the right held none.

After-History.—On September 11th, 1896, she was admitted for lymphangitis of right upper limb; no recurrence; supraclavicular glands could not be felt. On November 16th, 1897, the patient had noticed enlargement of the supraclavicular glands for three months, and came complaining of weakness and shortness of breath (probably due to early pregnancy—see later) and pain shooting into the right occipital region. She looked well, had a round flattened mass, 1 inch by $\frac{1}{2}$ inch, above the right clavicle, probably adherent to the scalenus anticus; all else seemed normal. Menstruation had been irregular lately, thrice during the last six weeks, but less in quantity than usual.

Oöphorectomy.—On November 20th, 1897, double oöphorectomy was done. The uterus I noted was rather large, and the left tube was full of blood. I also removed the glandular mass above the clavicle more or less completely from the scalenus anticus, the brachial plexus, and the subclavian vein, to which structures it adhered. Immediate healing occurred.

Pregnancy and Delivery.—On February 9th, 1898, she appeared with an abdominal tumour which proved to be a 5 months pregnancy, and in June a normal labour followed, the child being small but healthy, and liquor amni very scanty. Five weeks after this event (on July 13th) she looked very well and had certainly put on some flesh. She was kept in hospital for a week because on her arrival she became acutely ill, and developed erysipelas of the right arm and shoulder, starting apparently in connection with a small subcuticular suppuration on the thumb. This was the second inflammation of her arm since the axilla was cleared out.

Sequel.—On July 21st, 1898, I noted that the breast scar and axilla were normal. The right hand and forearm were a little swollen, deep furrows being left. Beneath the supraclavicular scar lay two small nodules, one freely movable, one slightly attached to the deep parts: these (sclenus anticus?) felt indurated, but not enlarged or misshapen. Viscera and bones were apparently normal. The uterus was small, anteverted, freely movable; the vaginal cervix had almost disappeared (hyperinvolution). December 22nd, 1898, Four days after leaving hospital in July, the patient had another severe attack of erysipelas (?) of the arm, and within a month she had two more. Her thumb-nail was the seat of some suppuration for five weeks after her discharge. These attacks pulled her down greatly. In October she went to the country and returned much better. On November 10th another (the sixth) inflammation of the arm began, with a good deal of pain in the neck; no fresh focus of absorption had appeared, which has continued off and on since. Her weight had fallen from 7 st. 3 lbs. in July to 6 st. 12½ lbs., but she did not look ill, and strength seemed good. The scar, chest wall, and axilla were sound. Above the clavicle there was no swelling, but induration had, I think, increased outwards from the scapula; the gland-like nodules had not changed. The forearm was oedematous along its ulnar border. I found no evidence of growths in viscera or bones.

Clearly, there is no "cure" here; but it seems likely—when we consider the youth of the patient, the acuteness of the onset, its connection with pregnancy and lactation, and the occurrence of a pregnancy which went to term after the removal of the breast—that the oöphorectomy has done something towards holding the disease in check during the thirteen months since its performance. The loss of weight may, indeed, be largely due to the repeated attacks of inflammation of the arm.

CASE VII. History.—A married woman, aged 46, sent to me by Mr. H. H. Phillips, of Penge, in November, 1897. She gave no family history of tumour. She had had no breast trouble with any of her six children. Three years ago she noticed a mass in her left breast, which increased slowly at first, but rapidly with much pain during the last year. Under poulticing it fungated two months ago. Swelling and pain in the axilla

had existed two months. This patient had been confined to bed for some time previous to admission.

Condition on Admission.—She was extremely anæmic, and looked much worn with suffering, thin, but not emaciated (Fig. 7). Her left breast was

Fig. 7.—From a photograph by Mr. Phillips shortly before operation.

of large size, and seemed to be entirely involved by a new growth; nipple fully retracted; above it were two large fungating masses and two or three deep holes discharging pus and sloughs; below the nipple the skin was thick and leathery. The breast adhered to the pectoral fascia. The left axilla was blocked with a hard, lobulated mass, just movable on the chest wall. The supraclavicular region, viscera, and bones seemed normal. Had I not hoped for help from oöphorectomy—for the patient was still menstruating (every three weeks of late, as if the menopause were at hand)—I certainly should not have touched this case.

Oöphorectomy.—On November 6th, 1897, I performed a double oöphorectomy, and at the same time removed the breast with most of the skin over it, the pectoral fascia, and the sterno-costal portion of the great pectoral. The contents of the axilla were dissected and torn from the side of the thorax, latissimus, and great vessels, the latter being cleaned to the clavicle, below which small affected glands were found. The wound was very large, but was closed excepting a small central gap. I had taken unusual precautions against soiling the wound; but suppuration of moderate severity occurred, with consequent gaping and slow healing. In spite of this her condition was noted as improved in all respects on the 10th, and the improvement continued. On the seventy-fourth day she went to our convalescent home at Limpsfield much improved in health, strength, and appearance.

After-History.—On February 9th, 1898 (three weeks later), she returned in much better general condition. The wound had healed, but two ulcerated recurrences were sprouting through the scar, one adherent to the third cartilage, the other to the lower end of the gladiolus. Hard movable nodules could be felt as high as could be reached in the axilla, and there were several enlarged hard glands in the left posterior triangle. There was no pain or sign of visceral involvement. From this date onwards Mr. Phillips kept careful notes, from which I extract the following:

Soon after returning from Limpsfield she went to friends at Dover; general improvement continued, so that she could stay out a couple of hours at a time, and walk four miles or more. After she returned home strength began to fail, and the local condition became steadily worse. In June she could not walk out, but went out in a bath chair up to July 4th. Soon after she became bedridden; but in August she was neither so weak nor so thin as in November, 1897, and her pulse was a good deal stronger, although a serious bleeding from the fungus had occurred. Death took place on September 17th.

Fig. 8.—From a photograph by Mr. Phillips. State when thyroid was begun.

The operation, serious as it was, and unfortunate in its after-course, seems therefore to have lengthened life. Had not suppuration occurred the advantage gained would doubtless have been much greater. It is impossible to decide whether the oöphorectomy had any share in producing

No.	M. or S., Ch.	Menses.	Age at Oöphorectomy.	Operations and Dates of.	Total Known Duration: Type of Disease.	Amount of Superficial Disease.	Viscera and Bones.	General Condition.	Results of Oöphorectomy.	Latest Note.
1	M., ch.	Regular	44	Tumour removed Sept., 1892; amputation of breast, June, 1893; recurrences removed, June, 1896; oöphorectomy, Dec., 1896	6 to 7 years, C	Considerable	Nil	Good	Steady disappearance of much growth from skin, fat, glands, and muscle for 5 months; then intermittent improvement	Oct., 1898 (20 months after oöphorectomy). Health excellent; slight remains of local disease.
2	S.	Regular	37	Free removal of breast, etc., March, 1896; oöphorectomy, Feb., 1897	2½ to 3 years, A	Moderate	Nil	Feeble	Rapid disappearance of almost all skin, fat and gland growths; flesh and strength gained markedly	Died July, 1898 (17 months after oöphorectomy). Gain of life probably 1 year.
3	M.	Ceased 6 months	49	Removal of breast, etc., Aug., 1891; oöphorectomy, March, 1897	At least 6 years, C	Nil	Widely affected	Very feeble	Some relief of pain; ulcer over sternum tended to heal	Died 14 weeks after oöphorectomy. Visceral and osseous growths not affected.
4	W., ch.	Ceased many years	64	Removal of breast, etc., April, 1896; oöphorectomy, March, 1897	More than 3 years, A at onset	Small	Nil	Good	? Ovaries excessively atrophied	Aug., 1898 (17 months after oöphorectomy). Health good; cancer nodule rather smaller.
5	M., ch.	Regular	46	Removal of breast, etc., and oöphorectomy, May, 1897	About 3 years, A	Large, but removed	Nil	Good	? I think helpful	May, 1898 (1 year after operation). Health good; no recurrence.
6	M., ch.	Menses thrice in 6 weeks; pregnant	32	Removal of breast, etc., March, 1896; oöphorectomy and removal of supraclavicular glands, Nov., 1897	3 to 3½ years, A	Small	Nil	Good	? Disease seems held in check	Nov., 1898. Health fair; slight loss of flesh; no secondary growths.
7	M., ch.	Regular	46	Removal of breast and much local disease and oöphorectomy, Nov., 1897	4 years, A	A good deal left	Nil	Very feeble	? All improvement possibly due to removal of cancer, to feeding, etc.	Died September, 1898 (14 months after operation); a year of life probably gained.

Collected Cases.

*1	M., ch.	Regular	33	Removal of breast, etc., 1895; oöphorectomy, June, 1895	More than 5 years, A	Considerable	Nil	Fair	Complete disappearance of all recurrent growths in 8 months	Recurrence beginning early in 1898 (nearly 3 years after oöphorectomy).
*2	M., no ch.	Every 3 weeks	30	Breast inoperable; oöphorectomy, Oct., 1895	About 6 years, C	Large	Nil (see last column)	Fair, alcoholic	Likened relief of pain; slight disappearance of cancer	Died of secondary growths in liver.
*3	W., ch.	Regular	34	Amputation, date (?); oöphorectomy, Oct., 1896	About 4½ years, A	Considerable	Nil	Fair	Marked improvement for 6 to 7 months in skin-infiltration and glandular growths	Living in March, 1898; extensive glandular recurrence; much pain.
*4	?	Regular	32	Breast inoperable; oöphorectomy, May, 1897	14 months, very A	Large	Nil (see last column)	Very feeble	Very slight effect	Died in 5 months; growths in lungs and liver.
*5	M., ch.	Irregular for 3 years	47	Breast removed, Oct., 1890; attempt to remove glands, Dec., 1896; oöphorectomy, March, 1897	At least 8 years C	Considerable	Nil	Good	Steady disappearance of all growth	May, 1898 (14 months after oöphorectomy) said to be free from obvious cancer

A = acute. C = chronic. An attempt is made roughly to indicate rate of growth up to oöphorectomy.

* Cases 1 and 2 were under the care of Dr. Beatson, who had three other cases which showed only slight improvement, and of which no details are given (*Trans. Med. Chir. Soc. Edin.*, 1895-96, N. S., xv, 153-179). Cases 3 and 4 belong to Mr. Watson Cheyne (*BRITISH MEDICAL JOURNAL*, 1898, i, 1194); and Case 5 to Dr. Herman (*Lancet*, 1898, i, 1612).

such improvement as did result. It is certain that its influence must have been slight and of short duration.

Thyroid Treatment.—On June 11th, 1898, the state of matters being that shown in Fig 8, from a photograph by Mr. Phillips, this patient was put upon thyroid 3 gr. per diem. She was then in bed almost all day, suffered a good deal of pain, vomited occasionally, and had a pulse of 120. In the first month the dose of thyroid was raised from 3 to 24 gr. per diem. Pain in the breast region had disappeared, but was severe in upper arm. At first vomiting was no more than usual, but with the larger doses it became frequent, and the tabloids were often returned. With short intermissions, however, she took 3 or 4 gr. thrice daily. Mr. Phillips wrote on August 11th, 1898 (after two months of treatment) that the fungating growths had not increased since the thyroid was begun. He fancied there had been a little spread of infiltration down the thoracic wall of the axilla. Oedema of the arm varied greatly from week to week. A lump the size of half a hen's egg in the right axilla, and a smaller mass, not typically scirrhus, in the margin of the right breast, had just appeared. These new growths, and another which appeared very rapidly on the left side, gained ground, while the patient wasted steadily and the pulse failed. She persisted with the thyroid; vomiting became less troublesome during the last four or five weeks of her life.

The trial of thyroid here was as thorough and as persistent as it possibly could be; it is doubtful whether any benefit resulted. The patient was very far gone when the remedy was begun.

I give above in tabular form abstracts of my own cases and of such cases published by others as I have been able to find. I have been unable to discover any American, French, or German cases.

THE VALUE OF OÖPHORECTOMY.

The first point to which I would draw attention is that in the above cases no thyroid was given until it seemed clear that the effect (if any) of the oöphorectomy was exhausted. We are thus able to judge of the effect of removal of the ovaries upon mammary cancer and its metastases. I think it is hardly possible to doubt that in some cases the removal of the ovaries does induce the disappearance of cancer tissue.

But from the practical point of view is oöphorectomy a justifiable mode of treatment? This question can be answered only when we have a sufficient number of cases to be able to determine in how many per cent. oöphorectomy acts beneficially, and the duration of the relief it may afford. If, further, we can learn to distinguish the cases in which it does good from those in which it fails to act, a great step will have been gained. We have no such statistics to guide us. I can find mention of only 15 cases, including my own 7, and in many of these scanty or no details are given. I would urge that full notes of all should be published.

In considering whether oöphorectomy is justifiable we must remember that under ordinary conditions it is one of the simplest operations in surgery; that under such conditions the mortality must be extremely small; that the value of ovaries, or any other organ not essential to life, to a woman

with cancer, is greatly reduced; and that the effects, injurious or other, upon the mind and body of removal of both ovaries do not seem to be well ascertained. In many cases, at all events, no undesirable results ensue; this has been so in all my patients.

Perhaps I may sum up my seven cases thus: In my opinion the beneficial effect of the oöphorectomy was indubitable in two (Nos. 1 and 2); probable in two (Nos. 5 and 6); absent or very doubtful in three (Nos. 3, 4, and 7).

If we take the group of failures first, we note at once that it contains the only two instances (3 and 4) in which oöphorectomy after the climacteric was performed. In No. 3 menstruation had ceased only six months, but the disease though fairly chronic (6-7 years) was very advanced and widespread in viscera and bones. In No. 4 the menopause had occurred many years earlier; the primary tumour in the breast reached a large size in six months, and the recurrence for which I did the oöphorectomy seemed to be growing fast, but there was no evidence of generalisation. I looked upon the disease as pursuing an acute course, and when I wrote my first paper I thought that the oöphorectomy had done nothing to postpone the death, which I anticipated for her within a short time. It seems that I was wrong in my forecast; owing to unknown influences the rate of progress of the disease has diminished. I may have been mistaken also in thinking that the atrophied ovaries in this case must have been functionless, and that their removal could therefore have had no effect upon the disease. I know of no other case in which oöphorectomy for cancer has been done after the menopause; but although there is little encouragement to be got out of these 2 cases, they do not prove the uselessness of oöphorectomy after the climacteric. The third failure (No. 7) differs from those just mentioned in that she was menstruating regularly. Locally things were about as bad as they could be; the patient was bedridden; she was saturated with cancer and septic products, and her pulse was so weak that there was doubt as to whether she would bear conveyance from Streatham to Charing Cross. There was no evidence of secondary growths. Complete removal of the local trouble was impossible; the question was whether, if an incomplete local operation were done, the removal of functioning ovaries would enable her tissues to deal with the amount of cancer left behind. The answer was in the negative; unfortunately, the tissues were further depressed by prolonged suppuration, but I cannot think that this made the difference between "kill and cure." Dr. Beatson's first and most successful case, and Herman's equally successful case, in neither of which was the large local recurrence diminished by operation, seem to show that the failure of oöphorectomy in No. 7 was not due only to the mass of growth present. The extreme debility of No. 7 may have had its influence.

As to Group II there is not much to be said; a hostile critic might fairly take the view that oöphorectomy did nothing for these patients. In No. 5 I had a bad case to deal with; I therefore performed oöphorectomy in addition to a radical local operation. There has been no recurrence in over a year, but there would be no difficulty in quoting similar cases in which such a result followed from a local operation only. In No. 6 the disease is not advancing as might be expected from the previous history; I am inclined to attribute this to the oöphorectomy; but a similar change in rate of growth may occur without oöphorectomy. Perhaps No. 3 is an example of this, the oöphorectomy in her having been really without effect.

Group I contains what I regard as distinct successes. No. 1 was a case naturally inclined to run a somewhat slow course. Now, two years after the oöphorectomy, she is almost free from discoverable cancer, and her general health is excellent. She herself has no doubt as to whether it was worth while having the oöphorectomy done. No. 2 is dead; the cancer nodules had scarcely disappeared before they began to reappear, and fresh ones to form. She was 37. Her disease was of fairly rapid type. I think that about a year was added to her life, and it seems to me that many would gladly purchase a year of life at the cost of an oöphorectomy. Some primary and many secondary operations have not benefited patients to this extent. I do not know whether my account of these cases is convincing, but no one who watched them

could doubt the influence of the oöphorectomy in inducing the disappearance of the cancer tissue.

With these cases may be placed (a) Dr. Beatson's first case, in which a woman of 33, with bad recurrence on the chest wall of cancer of fairly rapid type, was completely freed of discoverable cancer in the space of eight months after an oöphorectomy, and remained so until nearly three years from the operation had elapsed; then the disease reappeared. (b) Dr. Herman's case, aged 47, of chronic type (over seven years' duration), in which inoperable recurrence in the axilla is said to have disappeared, the patient being apparently free from cancer fourteen months after the oöphorectomy. For three years this patient had menstruated irregularly, as if the menopause was at hand.

Examination of such facts as I know concerning these cases does not enable me to draw a clear line between them and others which benefited little or not at all. Yet there are obvious differences between the groups. Among the successful cases, menstruation had ceased in none, though Herman's case and my No. 3 tend to bridge over this gap. The general condition was good in all except No. 2, the least successful. In none was the total amount of cancer very large, and in none were visceral or osseous growths detected. The type of disease—that most important point—varied, being chronic in my No. 1 and Herman's case, fairly acute in Beatson's case, whilst in my No. 2 the disease, kept under by amputation of the breast, and later by an oöphorectomy, ran its course in two and a-half years. Although the most acute case was the least successful, the one next to it, in point of acuteness, was the most successful yet recorded. It is noteworthy also that Beatson's case was exceptionally young (33), and that the primary growth had passed through two lactations.

In face of these 4 cases out of the 15 I have collected, in which, as I think, relief worth obtaining was afforded by oöphorectomy; and feeling that in all probability benefit has been conferred upon the 2 cases in my second group, I have not yet come to regard the operation as useless, or nearly so, in the treatment of mammary cancer. I cannot dispute Mr. Cheyne's statement that in all cases its effect is only transitory (if "transitory"—lasting three years), and that in many none is produced. I have reason to share his disappointment with the treatment; but I nevertheless think that he is a little hard in his judgment, which is based chiefly upon two cases in young women. No doubt, as he says, one would expect the effect of oöphorectomy to be most marked when the ovaries are in full vigour. But things are not always as we should expect. It early became apparent not only that all cases were not equally affected by oöphorectomy, but that all secondary growths in the same case, and even in the same tissue, were not equally influenced. To explain the failure to act in some cases, I hazarded the suggestion in my first paper that the internal secretion of the ovaries may vary, and that only when it has varied in some unknown way does it favour the growth of cancer. If there be anything in this theory it is conceivable that this variation in the secretion may occur more commonly after than before 40. Next, such evidence as we have tends to show that in the etiology of cancer the ovary is not an exciting cause, but only a predisposing influence of greater or less strength in different cases. Now, speaking generally, the younger the patient the more severe is cancer likely to be; resistance to cancer seems to increase with age. To decide that oöphorectomy is useless unless it can control cancer under the most difficult conditions might lead to our casting aside a remedy of some value. Mr. Cheyne's first case reads very like Dr. Beatson's first, yet the improvement following oöphorectomy in the former lasted only six or seven months. What was the reason of the difference? In his second case Mr. Cheyne seems to feel that he asked too much of the remedy. The patient was 32, and so predisposed to cancer that the total known duration of the disease was only fourteen months. She was extremely weak on admission nine months after the discovery of the primary growth, which was inoperable. There was a large amount of primary and secondary growth present. Only slight improvement followed the oöphorectomy.

I think that in some cases oöphorectomy is of value as a palliative operation. A great deal more work, and perhaps very difficult work, will be necessary to determine its powers, and its mode and range of action.

THYROID TREATMENT.

In Beatson's, Cheyne's, and Herman's cases thyroid extract was given while the effects of the oöphorectomy were being observed. Regarding it as a powerful "lymphatic stimulant," Beatson put his cases on thyroid for a month or so and seemed to obtain no result. He then tried oöphorectomy *plus* thyroid and obtained more or less result, which, I should say, oöphorectomy alone will explain. In short, I thought that Beatson's cases went to show that thyroid was of no use in scirrhus of the breast. It is, however, right to say that Dr. Beatson came to an opposite conclusion. The remarkable case of Recurrent Carcinoma of the Breast entirely disappearing under Thyroid Extract continued for Eighteen Months, published by Page and Bishop, made me feel that perhaps thyroid acted very slowly, and that its effects could not be seen during a month's exhibition. It may be so; but careful reading of the case does not support this view strongly. The patient was aged 61. After thyroid had been administered some time, the nodules ceased to grow and seemed softer; but later a fresh one appeared and grew, and none seem to have disappeared during fourteen or fifteen months. Then the patient disappeared, but continued taking the drug. At the end of eighteen months she turned up again, all the nodules having gone in the interval—I should imagine very much to the astonishment of both doctor and patient, who must have been quite unprepared for such a development. The result does not read like that of the steadily-continued or increasing action of a drug.

The following are the results of treatment with thyroid in my cases:

In Case II, when nodules began to reappear after the oöphorectomy, the patient having gained flesh up to the commencement of the thyroid treatment, the drug was given for about a month, a dose of gr.xx per diem being reached. The patient lost 5 lbs.

In Case VII the administration of thyroid was begun in June, and was continued with great pertinacity almost to death in September. Full details are given in the case. Perhaps some relief of pain and some inhibition of growth of the fungating masses were results of the treatment.

Mrs. K., 50, had a rather large and quick-growing cancer, infiltrating breast and involving skin diffusely; freely removed in November, 1897. In June, 1898, she returned with several nodules in skin and fat in and around scar and a diffuse redness, with slight infiltration spreading far towards axilla; general condition still good. She was given thyroid gr. x to gr. xv a day. No improvement was noted, but slow increase went on. In September she developed pleurisy and died quickly. There was no *post-mortem* examination.

Mrs. B., 52, whose mother died of cancer of breast, had a large quickly-growing cancer of breast, involving skin, freely removed in November, 1897. In May, 1898, she had recurrence in middle of scar and extending far out into axilla. I put her on $7\frac{1}{2}$ gr. of thyroid a day, and after a fortnight increased it to 15 gr.; but after eight or ten days she became so depressed that she had to give up for a week; then she started 10 gr. a day, and after three weeks of this—that is, seven weeks from beginning of treatment—she and her nurse agreed that the disease had not increased lately, and the patient maintained that the mass was softer. At a later period, after a three weeks' interval, both the patient and her medical attendant, Dr. Victor Sapp, were convinced that the re-exhibition of thyroid produced softening of the cancerous infiltration about the scar. With this exception no effect of the thyroid on the growth was noted. From 10 to 15 gr. of the drug were taken daily with few intervals; it seemed to cause great depression and vomiting, but these may have been due to the disease. The patient is now (December 25th, 1898) bedridden, with a good deal of local disease ulcerating centrally; a huge liver, with jaundice and ascites, and a large mass in right iliac fossa.

Mrs. N., 63, very stout, had a large tumour of breast, with a deepish ulcer, discharging freely, running into it; many nodules in skin over breast, one large and almost bursting; enlarged axillary glands. She took 3 to 6 gr. of thyroid daily irregularly; after two months the ulcer completely healed, and now, after four months, there has been little or no local increase. The large nodule remains *in statu quo*. There is reason to fear that she has growths in the liver.

These are all the cases of cancer in which I have tried thyroid. They afford little evidence that it has any action upon the disease.

ON FIBROMYOMATA OF THE VAGINA.

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HAVING met with two cases of this rare and somewhat important condition, I have reported them in full; and having searched the literature on the subject, have been able to add 27 additional cases published since 1882, when Kleinwächter wrote his standard dissertation, *Die bindegewebigen und myomatösen Neubildungen der Vagina*.¹

CASE I (No. XXVIII in Bibliography).—Mrs. B., aged 36, with no children, was first seen in 1890 for pain during coition and reflex mammary and gastric irritation. On vaginal examination a small tumour was felt in the left and anterior fornix and just below the level of the os uteri externum. The pelvic condition was otherwise normal. The swelling was sessile, smooth, painless, and covered by healthy mucous membrane, which could be freely moved over its surface. In size the tumour appeared to be that of a shelled walnut. A diagnosis of vaginal cyst was given, and under an anæsthetic an incision was made, and the nature of the swelling discovered; it was easily enucleated, and the cavity closed by deep and superficial sutures, and the vagina stuffed with gauze. Recovery was easy and rapid. On microscopical examination, the growth was found to be partly myomatous and partly fibrous, the latter predominating. For some reason, all the local and reflex symptoms above mentioned disappeared, and have not recurred.

CASE II (No. XXIX in Bibliography).—Miss A., aged 49, had been a martyr to neuralgia and rheumatism all her sexual life, and had been more or less continuously under medical care. Three years before I first saw her (February 5th, 1898) she complained to Dr. Ferris, her medical attendant,

Fig. 1.—Case II; A, uterus (retroverted); B, tumour; C, bladder; D, retropubic fat; E, symphysis pubis; F, urethra; G, discoloured portion of tumour; H, vagina; I, perineum; J, rectum; K, sacrum.

of something pressing upon her bladder. An examination showed a small, apparently fluctuating, swelling in the anterior and lower vaginal wall. This growth had slowly but continuously increased in size from that time. Up to three or four years ago her catamenia were regular and normal, but since then she has been very irregular, long periods of amenorrhœa alternating with a few days loss. A few weeks (three or four) ago she noticed an extremely offensive discharge coming from the vagina, and it was only after much vaginal douching that the smell was overcome; this has reappeared from time to time. It was thought that perhaps the growth had ruptured and some of its contents found exit *per vaginam*. The patient had steadily declined operative treatment. She complains at present of the constant desire to micturate and the offensive discharge. She has made flesh, and has nothing generally wrong except her extreme neurosis. Examination by hypogastrium revealed nothing beyond the sensation of a swelling in the median line rising just above the brim of the pelvis.

Per Vaginam.—The anterior half of the pelvis was occupied by an elastic, almost fluctuating, smooth growth extending from just above the internal urethral orifice to high up towards the pelvic brim; it was beneath the mucous membrane of the anterior vaginal wall. It encroached upon the vaginal canal so much, that it was only after much patience and difficulty that the index finger could be pushed up sufficiently high to reach the cervix uteri. With the sound in the bladder and finger in the vagina the growth could be limited to the pelvis and the anterior vaginal wall. The mucous membrane covering it was movable over the tumour. Apparently no connection existed with the uterus. The tissues covering the lower portion of the swelling were purple in colour. No opening could be detected in the walls of the capsule. An anæsthetic was given and the above-mentioned physical signs corroborated. The uterus, of normal size, was found lying just beneath the sacral promontory slightly retroverted and impacted. The tumour gave to the touch the sensation of a tense cyst containing fluid from which a small amount had been withdrawn, leaving the walls slightly flaccid. The offensive discharge was apparently due to menstrual fluid retained in the vagina above the tumour and not to escape of cyst contents, as was at first thought possible.

Diagnosis was extremely difficult, and appeared to rest between an impacted pediculated fibroid (subserous), a rare form of anterior perimetritis, a vaginal cyst, a dermoid ovarian cyst, or, lastly, a vaginal fibromyoma. It was decided to attempt removal by the vaginal route.

Operation.—After antiseptic douching and the usual preparation, the patient was placed in the exaggerated lithotomy position and the vaginal mucous membrane over the lower portion of the growth incised longitudinally. No fluid escaped, and the tumour was obviously solid and encapsulated. It was shelled out with much difficulty and free bleeding. A sound passed 6 inches into the cavity in an upward direction after its removal, the blunt end being easily felt *per hypogastrium*. Several forceps