

healthy. We decided, after anxious deliberation, that it would be useless to attempt removal of the mass, and that to avoid rupture of the uterus the fœtus must be speedily removed; and as the disease was limited to the uterus and did not encroach on the vagina, total extirpation was preferable to Cæsarean section or Porro's operation. She and her husband having consented to the operation, she was at once removed to the infirmary. A careful and prolonged examination was made for evidence of life in the fœtus, but no such indication was found.

Operation.—The vagina was thoroughly flushed with a solution of perchloride of mercury, and a silver catheter introduced into the bladder; strict antiseptic precautions, with the use of spray, were used, and chloroform was administered. The abdomen was speedily opened by an incision from a little above the pubes to 4 inches along the umbilicus, and the uterus drawn out of the abdomen. A further examination failed to show any life in the fœtus, so instead of using a temporary elastic ligature and at once removing the fœtus, I decided to husband all blood, and to save time by at once securing each broad ligament completely by three silk ligatures. I then made a transverse incision a little above the junction of the bladder, and easily peeled it off, opening the vaginal roof; in doing so the left ureter was exposed, recognised, and left unharmed; the right was not noticed. A similar method was performed posteriorly, and the rectum carefully separated, all bleeding points being secured with Péan's forceps. The uterus was then cut away, and but very little oozing occurred; the forceps were removed one by one, each vessel being securely tied with silk. The toilet of the peritoneum was carefully attended to, and the ligatures on the broad ligaments cut short. As the opening into the vagina was so very small it was left for drainage, and a glass tube passed down to it from the abdominal wound, which was then closed and dressed with iodoform and wood wool.

The patient rallied well and had a good pulse. In an hour's time she looked much better than before the operation; she had a fair night, with some sickness. Next day she was dressed at 10 A.M. and the vagina carefully flushed with a perchloride solution; temperature 99.5°; pulse 110; aspect excellent; not much pain, and but little sickness. At 2 P.M. vagina again irrigated; pulse and temperature the same; sickness better. At 4 P.M. she was not so well, and at 10 P.M. there was a decided change for the worse. She rallied a little during the night, but died next day of exhaustion. At the *post-mortem* examination the abdomen was found perfectly sweet—no pus, a very little serum, two small clots, and, after a most searching examination, not a particle of cancer could be found.

CASE II. Porro's Operation.—On the morning of July 11th, 1891, I was asked by my friends, Drs. Beveridge and Blair, to see Mrs. P., aged 30, married, one miscarriage at the fourth month, second pregnancy at full time, who had been in labour with strong and regular pains for the preceding ten hours. On examination, I found the lips of the os protruding through the inlet of the pelvis, the membranes unruptured protruding through these lips, but no presentation could be felt; the promontory of the sacrum approximated so closely to the pubes that my two fingers placed side by side could not pass between, and the promontory of the sacrum was higher than and projected upon the pubes, so that if a line were drawn from one to the other and another line erected at right angles to it at its centre, it would pass through the abdominal wall an inch or less above the pubes instead of through the umbilicus—in other words, the conjugate diameter was about an inch and a half; and to our minds, therefore—even if we had wished to do it—craniotomy was excluded. We could not satisfy ourselves that the fetal heart was audible. The mother declared the child had moved a little time before.

Our course was clear. We were bound to deliver the child by abdominal section. She consented, and was at once removed to the Sunderland Infirmary. She was placed under chloroform, and with full antiseptic precautions, including the use of the spray, I opened the abdomen from an inch above the pubes to some three inches above the umbilicus. I then turned the uterus out of the abdomen, and getting one of my colleagues to protect the intestines and to keep the edges of the wound together, I placed an elastic ligature

round the cervix. I then directed my colleague, Mr. Morgan, to hold the ligature lightly and the instant I cut into the uterus to tighten it. This he did. I made a small button-hole incision into the centre of the uterus, introduced both index fingers, rapidly tore the uterus transversely across, seized the fœtus by the neck, and had it out in less time than it has taken to write this. Dr. Beveridge attended to the child, and to his kind attention it owes its life. Tait's clamp was then applied below the elastic ligature, the uterus cut off, and the abdomen closed. The wound was dressed in two divisions with iodoform and wood wool. The upper portion was not touched till the sixth day, when the wound was healed and the sutures removed. The lower portion was dressed every second day, and the clamp tightened. It came away on the fourteenth day. The after-history of the case is uneventful. She had a practically normal temperature, never vomited, passed flatus in thirty hours after operation, and never had a symptom to cause any anxiety. She and her child are now alive and well. The operation, unknown to me, was timed: from first incision to extraction of fœtus, 8½ minutes; to completion of operation, dressing, etc., 35 minutes.

Remarks.—The first case is, so far as I know, the only case hitherto operated on in the manner I have described during labour; one or two cases have been done during early pregnancy.

The second case, although the first done in my district, is now a justly recognised operation. It is one of the easiest in the whole course of abdominal surgery. I am not prepared to say whether it or Cæsarean section should be the operation of election. I do not think the time has yet arrived for us to definitely decide this; I have a perfectly open mind on the subject, as I have a perfectly closed mind on another question, and that is that the day for doing craniotomy on a living fœtus is gone; I would submit as forcibly as I can, that we are not now justified in doing a craniotomy on a living fetus, when such excellent results can be obtained by abdominal section. There will still be a place for it on dead children where the pelvis is not too narrow, and one would be justified in tapping a hydrocephalic head.

I am happy to say that in a somewhat extensive consulting midwifery practice of several years' duration I have never been present at a craniotomy on a living fetus.

NOTE ON THE TREATMENT OF MYXŒDEMA BY HYPODERMIC INJECTIONS OF AN EXTRACT OF THE THYROID GLAND OF A SHEEP.

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MYXŒDEMA has until recently been considered an incurable disease. Since the pathology of this remarkable condition, however, has become more fully understood, hopes of the possibility of greatly relieving the symptoms, if not of curing the disease entirely, have been entertained. The observations of the symptoms which followed the removal of the thyroid gland in man made by Professor Kocher, of Berne, and the results of the experimental removal of the gland in monkeys obtained by Mr. Victor Horsley¹ have firmly established the view that this disease is due to the loss of function of the thyroid gland. It was found by Dr. von Eiselsberg that if the thyroid gland was successfully transplanted from the neck of an animal to some other part of the body, it was capable of continuing its functions, and so preventing the onset of the symptoms which would otherwise have followed its removal from the neck. Mr. Horsley then suggested that grafting a healthy sheep's thyroid gland into a patient suffering from myxœdema should be tried as a means of arresting the

¹ Brown Lectures, 1885.

progress of the disease.² This suggestion has since been carried out. Bettencourt and Serrano, of Lisbon,³ introduced one half of the thyroid gland of a sheep beneath the skin of the inframammary region on each side in a woman of 36, suffering from myxœdema. The operation was followed by an immediate improvement. Movements became more easy and the speech more natural. The number of red corpuscles in the blood steadily increased till it nearly reached the normal standard in a month. The temperature was raised. The subcutaneous swelling diminished, and the patient began to perspire once more. The period of menstruation, which before had lasted for two and sometimes three weeks, was reduced to four days. These authors considered that as the improvement commenced the day after the operation, it could not be due to the gland becoming vascularised and so functional, but suggested that it was due to the absorption of the juice of the healthy thyroid gland by the tissues of the patient.

Now it seems reasonable to suppose that the same amount of improvement might be obtained by simply injecting the juice or an extract of the thyroid gland of a sheep beneath the skin of the patient.

If we consider that myxœdema and cachexia strumipriva are due to the absence from the body of some substance which is present in the normal thyroid gland, and which is necessary to maintain the body in health, it is at least rational treatment to supply that deficiency as far as possible by injecting the extract of a healthy gland. G. Vessale⁴ has made intravenous injections of an extract of the thyroid gland in dogs after thyroidectomy with beneficial results. As far as I am aware this means of treatment has not before been tried in the human subject. Since suggesting this treatment at the February meeting of the Northumberland and Durham Medical Society, I have been able to carry it out in a well-marked case of myxœdema. Such decided improvement has resulted that the details of the method of treatment employed and the results obtained are worth recording. After trying one or two slightly different methods, the following has been found to be the most convenient, but is probably capable of considerable improvement:

The lobe of the thyroid gland of a sheep is removed as soon as possible after the animal has been killed. The surrounding fat and connective tissue are removed from it. All the instruments and glass vessels used in the further preparation of the extract should be either sterilised by heat or thoroughly cleansed with a 1 in 20 solution of carbolic acid. The gland is cut up on a glass dish into small pieces, and then placed in a test tube with 1 cubic centimetre of pure glycerine and 1 cubic centimetre of a 0.5 per cent. solution of carbolic acid. The mouth of the tube is closed with a plug of cotton-wool, and the mixture allowed to stand in a cool place for twenty-four hours. The mixture is then placed in a fine handkerchief which has previously been placed for a few minutes in boiling water. It is then firmly squeezed by screwing up the handkerchief so as to express as much liquid as possible through the handkerchief. By this means 3 cubic centimetres (50 minims) of a turbid pink liquid are obtained. This preparation, which will keep quite fresh for at least a week, should be kept in a small bottle with a glass stopper. It is best to make the extract fresh each week, so as to avoid any risk of putrefaction taking place. This extract may be given in two equal injections of 1.5 cubic centimetre (25 minims) each during the week, so that at first the patient receives the extract of one lobe of a sheep's thyroid in the course of each week. After a time the injections need not be made so frequently. The injections are made with an ordinary hypodermic syringe, which is carefully washed out with a 1 in 20 solution of carbolic acid both before and after the injection is made. The surface of the skin is also carefully cleansed with the same carbolic solution at the point where the injection is made. The loose skin of the back, between the shoulder-blades, is a convenient situation in which to make the injection.

The following note gives the history and condition of the patient before the commencement of the treatment.

April 13th. Mrs. S., aged 46. Four or five years ago it was first noticed by her friends that her speech and actions were

becoming very slow. She herself began to feel soon after that it required a great effort to do her ordinary housework. Her features gradually became enlarged and thickened. The hands and feet increased in size and became altered in shape. She has not perspired at all during the last four years. Six years ago she had a miscarriage; since then she has only menstruated once, four years ago. At the present time she presents most of the characteristic symptoms of myxœdema. She complains of languor, a disinclination to see strangers, and great sensitiveness to cold. The temperature is sub-normal, and varies between 95.6° and 97.2° in the mouth. The pulse varies between 60 and 70. The face is blank and expressionless, and the features are notably thickened. This change is well seen in the *alæ nasi* and lips. The subcutaneous connective tissue of the eyelids is so swollen that she finds it difficult to look upwards. There is also considerable swelling beneath the eyes and of the cheeks. The hands and feet are both enlarged; the former have that peculiar shape which has been described as "spade-like." The skin is very dry, there is no perspiration, and the superficial layers of the epidermis are continually being shed as a fine white powder. The hair is very fine in texture, and a considerable quantity of it has been lost. She is slow in answering questions; all her actions are slow, and are performed with difficulty. The speech is remarkably slow and drawing, and the memory is bad. No thyroid gland can be felt in the neck. The urine contains no albumen or sugar.

July 13th. It is now three months since the treatment was commenced; it has not, however, been carried out continuously all the time, and at first a weaker preparation than that described was used. Extracts of five lobes of sheep's thyroid have been injected, that is altogether equal to the extract of two and a half thyroid glands. The patient has steadily improved since the treatment commenced, and, though three weeks were allowed to elapse between the injection of the last two extracts, she did not lose any of the ground she had previously gained. The swelling has gradually diminished, and has practically disappeared from the backs of the hands, the skin over them being now loose and freely movable. The lips are much smaller. The swelling of the upper eyelids has diminished so much that she can look upwards quite easily. The swelling beneath the eyes and of the cheeks has also much diminished. The face consequently, as a whole, has greatly improved in appearance, and has much more expression, as many of the natural wrinkles, especially about the forehead, have returned. The speech has become more rapid and fluent, the drawl being scarcely noticeable at the present time. She answers questions much more readily, the mind has become more active, and the memory has improved. She is more active in all her movements, and finds that it requires much less effort than formerly to do her housework. She now walks about the streets without any hesitation without a companion.

She has menstruated normally during the last six weeks at the regular interval. For the last four weeks the skin has been much less dry and she perspires when walking. The hair remains as before. She is no longer so sensitive to cold. Unfortunately owing to circumstances a daily record of the temperature has not been kept, but out of four observations that have been made lately, about 11 A.M., three times the temperature has been 98.2° F. and once 97.4°.

Many cases of myxœdema doubtless do improve to a certain extent when untreated, and it is not wise to draw many conclusions from a single case; but the return of perspiration and menstruation when they have not occurred for four years, together with the many other signs of improvement which have followed the treatment, are, I think, sufficient indication that this treatment really has a beneficial effect upon the disease. The improvement, of course, cannot be expected to be continued if the injections are discontinued, but there seems no reason why it should not be maintained if the injections are repeated at intervals of two or three weeks.

This case is published in the hope that others may be induced to give the treatment a fair trial in myxœdema. It might also be tried in cases where it is found necessary to remove the whole of the thyroid gland to prevent the onset of, or at least modify, the unpleasant train of symptoms known as cachexia strumipriva, which so often follows thyroidectomy.

² BRITISH MEDICAL JOURNAL, February 8th, 1890, p. 287.

³ *La Semaine Médicale*, August 13th, 1890.

⁴ *Centralblatt für die medicinischen Wissenschaften*, 1891, p. 14.