is the presence of inflatable air-cushions inside the belt which are applied to the two sides of the uterus and maintain the foetus in position. The belt is ingenious but somewhat cumbersome. I have found an ordinary abdominal belt, and even a home-made flannel belt, sufficient for the purpose. It is advisable that the abdomen should be examined occasionally to see that the foetus maintains its attitude. In the six cases mentioned it has done so and the child has been born alive by the head. It is sometimes found that the child, though maintaining its presentation, alters its position, as, for example, from a first vertex to a second. This change I have often noticed in ordinary head presentations during the last few weeks of pregnancy, but it is possibly more common after external version, for the reason that a breech with the back to the left is usually converted into a vertex with the back to the right, and that the child's back will tend to revolve to the side it previously occupied, possibly on account of the particular shape of the uterine cavity.

Fig. 2.—Direction of the forces in external version for breech presentation. The upper arrow shows the direction of the push of the left hand on the head (in the direction of the curve of the spine), the lower arrow shows the direction of the pull of the right hand on the breech.

The period at which the operation should be performed is preferably at seven months and a-half of pregnancy. Before this date the presentation of the child is not definitive, and the operation, therefore, would be in many cases unnecessary; after this date, the foetus rarely changes its presentation, except in cases of contracted pelvis or hydramnios or pendulous abdomen. The operation becomes progressively more difficult as term is approached, and it will usually be found to be very difficult or impossible during labour at term.

There are several contraindications to the performance of external version for breech presentation. First amongst these comes multiple pregnancy. Amongst the 275 cases of breech presentation mentioned above, 55, or exactly one-fifth, occurred in multiple pregnancies, with the following results to the child:

In 24, the breech presentation occurred in the second twin with 5 deaths.

In 15, the breech presentation occurred in the first twin with 2 deaths.

In 12 (6 cases), the breech presentation occurred in both twins with no deaths.

In 4 (2 cases), the breech presentation occurred in the second and third triplets with no deaths.

This gives a mortality of 7 in 55 cases, or 12.7 per cent. From these figures we see that multiple pregnancy is a frequent cause of presentation of the breech, and that the imme-

diate danger to the child is less than in single pregnancy. For this reason, and because the operation is difficult and not without risk when the two children occupy the same amnion, external version for breech presentation in multiple pregnancies should not be performed during pregnancy nor during labour except in favourable circumstances for the second twin.

Other contraindications to the operation are a considerably flattened pelvis, a dead foetus, a malformed uterus, and placenta prævia. I have also seen the operation fail during labour owing to the cord being wound five times round the child's neck, and in one case of fibroids complicating pregnancy it was found impossible to move the head laterally, owing to its fibrous covering, even at the Cæsarean section, which had to be performed owing to the obstruction caused by the fibroids. Nevertheless, in all ordinary cases the operation is very easy and painless, and should in my opinion be carried out whenever the breech presents and the patient is advanced to seven and a-half months of pregnancy.

This operation, of course, involves the necessity of the patient's being examined during pregnancy, a necessity which is not recognised by all doctors or patients. Yet it is time that this examination became a routine practice, for without it patients and their infants are occasionally brought into the greatest peril, and not rarely lose their lives. As a result of this routine examination conditions may be recognised which can be obviated by timely interference. I believe the presentation of the breech to be one of these conditions; and I am sure that its treatment by external version during pregnancy is so free from objection that it is worthy of extensive trial. It is in the hope that others may be induced to practise it that I have ventured to publish such a small number of cases. It would be a great gain to be able to prevent this dangerous presentation, and to be sure that the child would always present by the head; for, in the words of Pliny, it is natural for man to come into the world by the head and not to be carried to the grave by the feet—*"Ritu naturæ mos est capite gigni pedibus efferri."*

SOME INSTANCES OF CYSTIC AFFECTIONS OF THE BREAST, WITH REMARKS.

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THE remarkable diversity in the pathology, symptoms, and treatment of cystic affections of the breast is well known. Never a year passes in the practice of any operating surgeon without some of these important cases coming under notice. It may be that an error in diagnosis is committed. It may be a case where the greatest difficulties are experienced in the appropriate treatment. The profession at large is hardly aware of the frequency and complicated nature of these maladies. Mistakes in diagnosis are still frequently committed, and errors of treatment, I feel convinced, are all too common.

I propose in this paper to shortly relate the particulars of some of these cases, which have recently come under my notice, and to make some brief practical comments upon them.

CASE I.—CYST OF BREAST IN A PATIENT AGED 45: EXPLORATORY INCISION: REMOVAL BY DISSECTION: CURE.

History and State on Examination.—A very stout single lady, aged 45, saw me in July, 1900. In the left mamma, towards the axillary aspect, was a swelling the size of a small orange; it was deeply seated, and felt extremely hard on superficial examination. The nipple was retracted, but the patient stated this had always been the case. No fluid had ever escaped from the nipple. The axillary glands were enlarged and plainly to be felt. Upon observation of this factor in the case two surgeons had pronounced the affection cancerous. To return to the swelling itself. The skin over it was normal, but the veins were a little enlarged. The history, as is so common in these cases, was sufficiently vague. The patient was positive, however, that the "tumour" had existed for at least six months. Occasionally pain and a general sense of uneasiness had been experienced. Close examination showed many of the signs we are accustomed to associate with the diagnosis of cancer. Thus the supposed tumour was hard and heavy, and the mammary substance moved about with it, yet on firm palpation with the pulp of the index finger a very distinct sensation of elasticity could be elicited. From that circumstance I felt sure that the swelling contained fluid, whatever its nature might be.

I observed this case for several months, as nothing was permitted in the way of operation. During the interval this patient, as is usual, took all sorts of advice, and one day came to me in triumph to show that the swelling was smaller. This was certainly the case, and I now could appreciate distinct fluctuation at one spot, and I felt more assured than ever that the affection was cystic. Unfortunately the diagnosis of cancer had been so positively given that I was scarcely believed, and the improvement was attributed to the cinnamon bark which the patient had been taking.

In a few weeks the reverse condition of affairs occurred. The swelling suddenly got larger, with local pain and a general sense of uneasiness. I was then permitted to open the swelling, but only on the understanding that the whole mamma was not to be removed. I may here add that the patient was bronchitic, with a dilated heart, and the urine was slightly albuminous.

Operation.—The A.C.E. mixture was administered as an anæsthetic, and great precautions were taken in maintaining the temperature of the room at a suitable heat, and at aiming at perfect asepticity. As the mamma was very voluminous the incision had to be large and deep. Much fat was traversed, and then the scalpel entered the cavity of a cyst, oval in contour, and about the size of a hen's egg. The fluid was straw-coloured and highly albuminous. The walls of the cyst were smooth and thin. There was no trace of intracystic growth. Moreover the walls of the cyst were closely incorporated with the surrounding mammary substance, so that in dissecting it out the breast tissue around needed division. The deep cavity left was well flushed out with hot— r in $\text{r},000$ —biniodide of mercury lotion; and several bleeding points were secured with fine catgut. This was difficult. A large counter opening was made below, and two full-sized drainage tubes were introduced, one below, and the other at the axillary end of the wound. These tubes were shortened daily, but not finally withdrawn until the eighth day, when consolidation was complete without pain or fever. The method of suturing may be noticed. A deep layer of fine and soft boiled silk sutures were introduced, about half an inch apart. These, being passed very deeply, approximated the mammary substance left "raw" by the removal of the cyst. The skin was united by horsehair, and the whole painted with collodion. An examination of the cyst wall showed that it had originated in a duct. There was no sign of morbid growth of any kind. This case is only an example of three others, which were very similar. In all of them the cyst was removed by dissection. The wound healed well, but an unsightly scar remained.

In the following case a different method of treatment was followed; the case is mentioned to illustrate it.

CASE II.—CYST OF MAMMA TREATED BY INJECTION.

History and State on Examination.—A single lady, aged 38, was seen by me in October, 1899. She had noticed a tumour in the left breast "quite by accident" about three weeks before. The swelling was not painful. On examination in the upper part of the left mamma above the nipple was found a hard, rounded, slightly tender swelling, the size of a hen's egg. The nipple, skin, and axillary glands were all unaffected. Deep palpation gave elasticity, and I believed it to be a cyst. It was dissected out with all the care and precautions adopted in the first case, and speedy healing occurred. The cyst contained yellowish fluid, and its contour was very irregular. All went well for nearly two years, when a similar swelling appeared on the other side. The appearances and clinical symptoms were so exactly a counterpart of the first cystic swelling, that I determined this to be of the same nature, and I made up my mind to inject it.

Operation.—This operation was carried out in the following manner: The skin was prepared in the usual way. The syringe used was of the simple piston variety, and the needle, 2 inches long, was about two sizes thicker than usually employed in hypodermic injection, and very sharp. It was ascertained by previous trials that the instrument worked smoothly and perfectly. The "barrel" contained about one ounce of fluid. An assistant rendered the swelling very tense by appropriately manipulating it, and then the needle was introduced. It traversed a considerable depth of mammary tissue before it entered the cyst. The entrance was evidenced by the usual feeling of loss of resistance, and the forcing up the piston by a sudden rush of straw-coloured fluid, showing the excessive tension within. The barrel was filled, detached from the needle, and emptied. About an ounce of fluid was thus withdrawn. The injection was composed of $\text{m} \cdot \text{40}$ of equal parts of liquefied pure carbolic acid and glycerine. The fluid was drawn up into the barrel of the syringe and injected through the needle, carefully held in the sac by an assistant. The parts were, after withdrawal of the needle, gently kneaded, so as to bring all parts of the sac into contact with the fluid. No pain was experienced beyond that of a slight dull burning nature. It may be mentioned that the needle was rendered aseptic by boiling and soaking in r in 10 carbolic acid solution. I feared to pass the needle through the flame of a spirit lamp, as the "temper" of the instrument is altered, and there is the risk of it breaking off in the tissues. Some local swelling and tenderness resulted, with a mass of induration which only slowly subsided. The ultimate result was, however, excellent.

The next case affords a striking instance of the difficulty of diagnosis attending these cases, as well as the determination of the appropriate treatment.

CASE III.—LARGE ELASTIC SWELLING OF MAMMA: A SANGUINEOUS CYST DISCOVERED: REMOVAL BY DISSECTION: CURE.

History and State on Examination.—A stout, alcoholic-looking woman, aged 42, single, with the scars of old syphilis on the skin of both legs, was admitted to St. George's Hospital in March, 1901. There was a large "tumour," the size of a small pumpkin, in the left mamma, which caused the gland to "stand out" on the thoracic wall. The nipple was prominent, and the surface of the swelling was slightly irregular, with eminences and depressions. On examination the swelling, whatever its nature, occupied the greater part of the breast. It fluctuated distinctly just above the nipple, but in other parts felt distinctly firm, as though masses of solid growth existed. The whole swelling with the gland moved on the

chest wall, and no enlarged lymphatic glands could be felt. The skin over the swelling was tense, and near the nipple was of a dusky blue tinge, which made me sure that the fluid was sanguineous or discoloured. The history was very vague. She had noticed the swelling for about four months, and there was an obscure story of a blow, and a fracture of a rib also upon that side, but the connection of this with the swelling could not be traced. I had little doubt that the case was one of cyst of the breast associated with solid growth (duct papilloma). I was also inclined to think, from the amount of solid material to be felt, that the growth would prove sarcomatous or carcinomatous (duct carcinoma), and I prepared the patient for a very extensive operation if thought needed.

Operation.—A free exploratory incision was made, and a quantity of dark bloody fluid escaped, at least 5 or 6 ounces. I now proceeded to examine the supposed solid parts of the swelling, which I was surprised to find consisted of nothing but masses of altered blood clot. This was of old date, for it was the colour of chocolate. I still believed that the source of this bleeding must have been a fungating growth in the wall of the cyst. The cavity was well held open, and I sponged away all the fluid and degenerated clot. Not a trace of growth could be seen. The surface of this large cyst was universally smooth, like the inside of a distended bursa. I incised it in several places, but found normal mammary tissue incorporated with its wall. I therefore dissected it freely out. This was a tedious and difficult matter. The pectoral muscle was exposed at the deeper part of the wound. I drained through a counter opening, and also towards the sternal aspect, for the oozing of blood was very free, and uncontrollable from the extensive cut surface of the mamma. The dressings were changed in the night on account of serous oozing, but no pain or rise of temperature occurred. Closure of the very extensive wound was effected in the same way as in the previous case. The wound, which was very deep, intricate, and large, healed rapidly.

Pathological Examination.—My colleague, Dr. Rolleston, reported that this remarkable cyst was quite simple, and had probably originated in a duct. The walls were lined with flattened epithelium, but no trace of growth could be discovered.

CASE IV.—A CYST EXACTLY SIMULATING CARCINOMA OF THE BREAST, DETECTED BY EXPLORATORY INCISION AND TREATED BY REMOVAL.

History and State on Examination.—The patient was a lady, aged 35, and had noticed a swelling in the left mamma for about four months. She was married, but childless. The greatest alarm was manifested, for the patient had lost two near relatives from carcinoma of the breast. I was inclined to fear that a similar affection was manifested in herself. The tumour, the size of a walnut, was very hard, and fixed in the mammary tissue, the nipple was deeply retracted, and, above all, there was a slight but distinct dimple in the skin over the swelling, which may well have been held to clinch the diagnosis. The axillary glands could not be felt. I have so often been deceived by these most deceptive cases that, fortunately, I was not positive; I mentioned the possibility of the affection being a cyst, but said I feared that cancerous growth would be found on exploration.

Operation.—The swelling was a simple serous cyst. Its walls were thick, and it lay at a great depth, and contained brownish fluid. It was dissected freely out, and the pectoral muscle was exposed at the floor of the wound.

The first case illustrates well many of the difficulties of cases of mammary cyst. In the first place, the diagnosis of carcinoma had been unhesitatingly pronounced, and I feel sure that it is these instances especially which give encouragement and reputation to quack remedies. These deeply-seated cysts vary in size, and sometimes spontaneously disappear. They have been rashly affirmed cancerous by one or more surgeons, whose names are quoted in proof of the accuracy of the diagnosis. They improve or disappear under some herb or coloured water, and the chain of evidence is naturally considered complete. The spontaneous disappearance also of large tumours simulating sarcoma in other parts should lead us all to weigh our words well before being dogmatic.

There are two important points in this case which are very significant of the diagnosis of cyst. The first is variation in size, the second variation in local tenderness. There is scarcely any breast swelling, which exhibits variations in size unless it be to some extent cystic. Pain and local tenderness are found with excessive secretion of fluid, and disappear with its exit. The more tense the cyst the more is the sensation of actual hardness simulated. The least escape or absorption of fluid will allow of the appreciation of a sensation of elasticity, which may be regarded as the leading symptom of a cyst. This important symptom is best elicited by lightly squeezing the swelling between the left thumb and forefinger, and pressing upon it with the pulp of the index finger of the right hand. Thus, by observing a case of this nature over several weeks, the diagnosis can usually readily be made. In none of the cases I have related was the escape of fluid from the nipple noticed. This symptom associated with the collapse of the breast swelling is quite characteristic of cyst, but in large and deeply-seated collections of fluids it may be absent.

Nothing is more deceptive than to argue of the nature of a breast tumour from the condition of the axillary glands. Cancerous infection may be present and yet it may be im-

sible to feel the glands from surrounding fat or deep situations. On the other hand, in those women suffering from cysts the axillary glands may easily be felt, and they may be enlarged also if the part has been much handled, or painted with iodine. It is only marked enlargement of the axillary glands with that peculiar hardness so well known to clinical observers, which can be looked upon as diagnostic of the invasion of the glands by cancerous growth.

With regard to the treatment of simple cyst after exploratory incision, the sac may be dissected out, or it may be rubbed with carbolic acid, or iodine, and stuffed with gauze. I infinitely prefer the dissection method, especially for large cysts, as leading to more speedy cicatrization and less subsequent deformity. Anyone who undertakes this operation will find it not easy. The walls of the cyst are closely incorporated with the breast substance. The cavity left is deep and irregular, and its walls bleed persistently. The leading principle to be here observed is the establishment of efficient drainage. One large tube should be brought out in a dependent part of the wound by a "counter-opening"; the other at its end. Unless drainage is very efficient, and well maintained, a collection of blood and serum will take place deep in the cavity. Nothing is more difficult to keep aseptic than a breast wound in this condition, and disasters only too readily occur. Want of efficient drainage, or prompt evacuation of collections of bloody serum, have been responsible for all the troubles I have seen in this variety of surgery.

The question of treatment leads us to a very important consideration well illustrated by the second case. Why in simple mammary cysts should not the treatment by injection be more regularly carried out? The operation of incision is laid aside, and a scar is also avoided—a matter of great moment in the upper classes. The answer lies in the question of diagnosis, for there can be no question that simple mammary cysts can be quite efficiently treated by the injection method.

The diagnosis of these swellings as being cysts at all is often exceedingly difficult, and an exact estimate of the nature of their contents is more difficult still. Coloured or bloody fluids indicate papillomatous or other growth in the wall of the cyst. The injection of a cyst of this nature would probably be disastrous, for the growth would be merely injuriously stimulated. The cases especially applicable for the injection treatment are the small or moderate-sized cysts so often found in association with a certain amount of chronic mastitis, and so frequently bilateral, and the contents of which are clear or straw-coloured serum.

I am aware that it is the practice of some surgeons to advise removal of the entire breast under these circumstances. This is an easy way out of a difficulty; but I doubt whether this operation is justifiable unless in the declared early advent of cancerous or sarcomatous disease. I have now treated a number of small cysts by injection. In one case, notably, the patient had three cysts in one breast, two in the other. These were injected at intervals with complete success. The mamma here feels tough and fibrous, and doubtless, could we inspect it, other tiny cysts would be found scattered about; but the patient is content to have her case watched, and the cysts injected if they get to a palpable size.

I may say I have always used the carbolic acid injections as related in Case II, and the smaller the cyst the more difficult to certainly lodge the injection within its cavity. A movement on the part of the patient may easily dislodge the needle, and the injection be unwittingly thrown into the surrounding mammary tissue. Hence, if the patient be highly nervous, I think a general anæsthetic is advisable, and an assistant to render the cyst tense by pressure is also very useful.

The third case is a very remarkable one, and I do not know that I have ever seen an exactly similar instance. Hæmatoma of the breast, with discoloration of the skin, a hardish margin of indurated tissue and direct history of a blow, is common enough, especially in hospital practice. But here the evidence of cyst formation was very clear, the parietes being smooth and glistening; and I have never seen previously bloody fluid in a cyst of the breast, unless some distinct growth, usually papillomatous, coexisted. In this case nothing of the sort was found, and, I doubt not, some vessel had accidentally ruptured into a large cyst, and the

blood slowly extravasated. The grumous, chocolate-coloured clot indicated that the hæmorrhage was of ancient date. I think the best term to apply to this case is that given in the title, "sanguineous cyst." In a similar instance, if the surgeon can assure himself that no growth coexists, the breast can be saved. But he must look upon such cases with great suspicion. In the present instance I completely everted the cavity, and sponged dry the wall of the cyst all over before determining to treat it by simple dissection.

The last case is an additional example, if such be needed, of the similarity between some kinds of cysts and cancer. In reference to this point, Sir W. Mitchell Banks's remarks are so apposite, that I will quote them. Speaking of the error of mistaking cysts for cancers, he proceeds:

I learnt to correct this first from seeing a surgeon of great experience proceed to cut out a breast for cancer. He gave his reasons for thinking that the tumour was malignant, but said that, as the growth was only small, he would cut into it before removing the breast in order to make assurance doubly sure. He did so. A tablespoonful of brownish fluid escaped and the tumour disappeared. I once afterwards did the same thing before a crowd of students, even though perfectly aware of the liability of mistaking a very tense cyst for a scirrhus mass. Many years elapsed, and I did not fall into the trap again until a few months ago, when I diagnosed a very deep-seated, tight cyst as a malignant growth. If the cyst is near the surface of the mamma the difficulty is not great, but if it is deep down its margins become obscured. The diagnostic features are that the tumour is round, smooth, sharply defined, unless it is very deep, and freely movable, while there is never any skin adhesion or glandular enlargement by any chance.¹

I have always hitherto believed and taught with Sir W. Mitchell Banks, that the skin over a cyst was quite free from "dimples" or depressions. In the case related there was a slight but distinct dimple in the skin. I do not mean to say that I can explain how this occurred. Some shrinkage or contraction must doubtless have taken place in the neighbourhood of the cyst, and the fibrous processes passing to the skin dragged upon. I was completely misled by this case, and though I mentioned the possibility of cyst to Dr. Forsyth, of Southend, under whose care this patient had been, I at the same time gave little hope that such was the case. "All the signs," I said, "are those of a deeply-seated nodule of cancer, and such I expect we shall find it." The case affords a striking instance of making assurance doubly sure. I feel certain, had I met with it at the outset of my surgical career, that I should have removed the whole mamma and committed a disastrous error.

I feel that the exploring trocar and cannula in these doubtful swellings is of great value. One objection is its painfulness. There are few patients in the upper classes who will submit to its employment without anæsthetics. If the surgeon does the little operation without previously warning the patient, he may give great offence, and be charged with roughness or even brutality! Provided, however, that the patient be sensible and tolerant, it is a diagnostic aid of great value. If a cyst be found and the contents are clear and devoid of the elements of blood, the injection treatment may be carried out. As I have already pointed out, the cases for this method of treatment must be selected with great care, or more harm than good may readily ensue.

REFERENCE.

¹ Lettsomian Lectures, *Med. Soc. Trans.*, vol. xxiii.

FEMALE MEDICAL PRACTITIONERS IN GERMANY.—One of the first ladies who have taken advantage of the recent relaxation of the rule excluding women from the study of medicine in Germany is Fräulein Mathilde Wagner, of Frankfort, who has just passed the final examination in medicine at Freiburg-in-Baden. She received her certificate of "maturity" in Berlin some years ago, studied medicine at Zurich, passed her first examination there, and was about to take her final one last autumn, when it became possible for her to obtain a licence in her native land. She is now at liberty to practise medicine in Germany. Six ladies graduated at German universities last winter, and others are about to follow their example.

It is proposed to erect a marble bust in memory of the late Dr. Mary Harris Thompson, founder of the Chicago Hospital for Women and Children, which now bears her name. The bust will find a place in the Art Institute of Chicago. Dr. Thompson is said to have been the pioneer medical woman of Chicago.