to cause serious obstruction to the passage of the child, we have a number of methods of delivery to select from, and the best choice is often very difficult to determine.

We know by experience that in such cases Nature unassisted will often succeed in overcoming an obstacle which seemed insuperable. This was well illustrated by a remarkable case reported to us by Dr. Kidd, in which a large tumour appeared to fill the pelvic cavity and to offer an insuperable obstacle to delivery. He performed a successful Caesarean section, yet in a subsequent confinement this same woman delivered herself spontaneously. We should therefore make it a rule to wait as long as spontaneous delivery is possible, but not so long as to render operative interference hopeless.

Efforts to drag the fetus past the obstruction by forceps version and extraction, or after perforation, are liable to cause irreparable damage, and are in general to be condemned.

As regards abdominal operation, Caesarean section alone is seldom sufficient. It is more generally advisable to combine it with enucleation of the tumours or extirpation of the uterus. As a rule, panhysterectomy has proved more successful than the supravaginal operation, because, after a prolonged labour, the uterus is often more or less septic, and the retention of a septic stump is not only in itself a source of danger, but its complete removal affords better drainage. Another reason for the complete operation is that the tumours which cause obstruction are always situated so low in the uterus that it is difficult to obtain a stump altogether free from disease.

When the fetus is known to be dead it is better to remove the uterus unopened.

After delivery it is scarcely necessary to point out that *post-partum* haemorrhage must be looked for, and free drainage of discharges secured. And in no other class of cases is complete asepsis from start to finish a more absolute necessity.

I shall now proceed to relate the case:

In September, 1903, I was consulted by a lady, who told me that she had been married eight years, but had no children. She complained of severe neuralgic pains in her breasts, especially at the intermenstrual periods, when they became swollen and painful. Menstruation was regular but very profuse, with expulsion of clots, and lasted a full week generally, but not always accompanied by pain.

The uterus was found to be enlarged, but no tumour was discovered. I diagnosed the case and treated it as chronic metritis.

A year afterwards, September, 1904, she became pregnant and the pregnancy pursued a normal course. Labour commenced on July 5th, 1905, the breech presented and pains were weak and inefficient. On the evening of the fourth day the membranes ruptured and I found the child lying obliquely with the breech in the right iliac fossa. I then made my first internal examination and found the os three-quarters dilated and a hand presenting. To the left of the cervix I also found to my surprise a tumour as large as my fist and which I could not push out of the pelvic brim. Having anaesthetized the patient I introduced my hand into the uterus and brought down a foot without difficulty, but extraction proved unusually tedious and the child died before it was completed. Ultimately, however, I succeeded in delivering the dead child without serious injury to the maternal soft parts. After the expulsion of the placenta the uterus contracted well and for some time there was no haemorrhage; but after a time the organ relaxed and enlarged and the discharge became more profuse. The uterus was rubbed and pressed, some clots expelled, and ergot administered with good effect; but after a time the haemorrhage recurred and I washed out the uterus with hot water. The benefit was only temporary, but at no time could the loss be called a flooding; there was no injury to the cervix nor was she at any time bad enough to suggest the advisability of plugging, but still her condition was so unsatisfactory that it was between two and three hours from the birth of the child before we thought it safe to leave the house.

On the fourth day after delivery the lochia became fetid and there was a rise of temperature, which on the following evening rose to 103° F., and the vagina was washed out with creolin lotion.

The following morning she was no better, so I douched the uterus with 1 per cent. formalin solution, after which the temperature sank to normal and remained so for two days. After that it rose again and on the eighth day it was so high and her general condition so unsatisfactory that I asked for a consultation, and Sir Arthur Macan saw her with me in the evening.

Having discussed the advisability of exploring the uterus to see if anything could have been left behind we finally decided to try the intrauterine douche again. Next day her temperature was normal and she gave me no further cause for anxiety.

The numerous complications in this confinement were no doubt all due to the presence of the tumour. The

tedious labour was due to the difficulty in expanding the lower uterine segment. The change in the fetal lie was caused partly by the inability of the presenting part to enter the pelvic brim, and partly to the unequal expansion of the lower segment of the uterus, the left side remaining rigid, whilst the right, becoming overdistended and thinned, would yield to the pressure of the presenting part, which consequently became displaced in that direction.

The hand presentation was due to the lie of the fetus, and its death was caused by obstruction to its delivery and pressure on the cord.

Post-partum haemorrhage is, as I have already pointed out, a common occurrence in myomatous uteri, but is not quite so easy to understand in this case, where the body of the uterus was healthy, and I am inclined to think that it was due to the tumour acting as a ball valve, closing the os and obstructing the escape of discharge, which consequently accumulated in, and by distending the uterus acted in antagonism to its retraction. But whether this was the cause of the haemorrhage or not, it certainly must have been the cause of the retention and putrefaction of the lochia and the septic fever which accompanied it. I had therefore little difficulty in deciding what advice I should give when some months later this lady consulted me again. I explained to her that the tumour, which had then shrunk to about the size of a billiard ball, was at that time doing her no harm, and that unless she again became pregnant would probably cause her no inconvenience. But that in future pregnancies, unless it had been previously removed, she would probably encounter similar dangers to those which she had already passed through.

After some consideration she decided to submit to operation, and accordingly on October 28th, 1905, I opened her abdomen and found the tumour within the left broad ligament, which I incised on its anterior aspect, and enucleated the growth from the cellular tissue and uterine wall into which it was imbedded by about one-third of its bulk. Having closed the cavity with fine silk sutures, I closed the abdomen, and she made a good recovery.

In 1906 she again became pregnant, went to full term, and on April 17th, 1907, delivered herself of a fully-developed living child. Her labour was normal, and excepting a mammary abscess her convalescence was quite uneventful.

A Clinical Lecture

ON

ADENOMYOMA OF THE UTERUS.

DELIVERED AT THE MIDDLESEX HOSPITAL.

By J. BLAND-SUTTON, F.R.C.S.,

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ALTHOUGH the pathological condition of the uterus known as adenomyoma was carefully described in a monograph by Professor von Recklinghausen in 1896, and two cases were reported by Cullen in the same year, and many since that date, this disease has not received in Great Britain the adequate attention its importance demands. Cases have been described by Frank E. Taylor, S. Cameron, Tate, Leitch, Cuthbert Lockyer, and myself. One of the reasons, and perhaps the chief, which militates against the recognition of adenomyoma is the necessity for a microscopic examination of the tissue, and as this remarkable change in the endometrium is often associated with fibroids, and the symptoms caused by the disease are identical with those set up by submucous fibroids, the nature of the trouble in the uterus is often overlooked. Nevertheless, the tissue changes in the uterus in adenomyoma, in well-marked examples of the disease, are so characteristic that they cannot be mistaken, and the naked-eye features, though they cannot be relied on without the confirmation afforded by a microscopic examination, are often sufficiently marked to lead the surgeon to suspect the presence of this adenomyomatous change in the endometrium.

The specimen which I use to-day to illustrate my lecture is the best example out of fifteen which have come under my observation in the last five years. The

uterus was removed by the subtotal operation from a spinster, 43 years of age, on account of rebellious menorrhagia; the organ completely filled the pelvis, and at the time of the operation measured 40 cm. (16 in.) in circumference. When the uterus was exposed through the abdominal incision in the course of the operation (which was undertaken on the impression that the patient's trouble was due to a large submucous fibroid), I was struck by the peculiar vivid redness of the uterus, and the crown of the organ presented a number of short, ragged villous tufts like soft adhesions. This caused me to remark that I had doubts concerning the nature of the tumour. As soon as the operation was completed I divided the uterus in such a way as to expose the uterine cavity, and on inspecting the cut surface at once realized that this gross enlargement of the uterus depended on changes in the endometrium, and that in all probability we had in hand an exceedingly severe example of diffuse adenomyoma. The parts were carefully hardened, and in due course I made sections through the whole organ.

On looking at the parts, as represented in Fig. 1, it is seen that the walls of the uterus are thickened in a fairly uniform manner, but when the cut surface is critically examined the new material can be distinguished from the strictly parietal or muscular tissue of the uterus; and although it lacks a capsule there is, nevertheless, such a marked distinction between the adventitious and the true tissue of the uterus that the naked eye can fairly well define its limits, and it is possible to trace the line of the endometrium over that portion of the new tissue where it bulges towards the cavity of the uterus. The cut surface of the adventitious tissue differs from that represented by the common hard fibroid in another particular, for instead of forming the well-known vortex arrangement, the muscular tissue is disposed in an irregular manner, and on the freshly-cut surface it produces a pattern not unlike that of the fabric known as "watered silk." When this tissue is examined microscopically, the harder bundles, as already mentioned, consist of unstriated muscle tissue and connective tissue, and the spaces enclosed by these bundles are filled with the peculiar stroma characteristic of the endometrium, and contain gland tubules lined with columnar epithelium of the same type as that which lines the normal tubular glands of the uterus. When isolated sections are examined, the glandular elements appear as islands, but when a consecutive series is examined it is easy to observe that the various glandular tracts are continuous with each other, and, if the investigation involves a sufficiently large tract of tissue, it is possible to follow up the gland tracts until they become continuous with the normal endometrium.

The example just described shows very well the condi-

tions produced when the endometrium is uniformly involved in the adenomyomatous change. In some cases the disease may be restricted to one wall and produce a local enlargement of the uterus. The specimen represented in Fig. 2 illustrates this very well. Here the adventitious mass is formed in the posterior wall of the uterus, and a small nodule which looks like a fibroid projects from the subserous surface of the uterus, and another is embedded in the wall itself. To the naked eye these may be easily mistaken for ordinary hard fibroids, and they often are; but it occasionally happens when such isolated nodules are examined microscopically, they contain the peculiar tissue characteristic of "diffuse adenomyoma," and they are, as it were, the terminal buds of out-runners from the endometrium which have crept through the muscular wall of the uterus, and blossomed under its serous capsule. Pedunculated processes of this kind are more common immediately in the neighbourhood of the cornua of the uterus, and this is explained by the anatomical fact that the walls of the uterus in this situation are thinner

than elsewhere because they are tunnelled by the terminal section of the Fallopian tubes. In reference to this, it may be mentioned that the adenomyomatous tissue in the specimen represented in Fig. 1 had involved the endometrium in the left uterine cornu, and had also implicated the mucous membrane of the tube.

The localized patch of adenomyoma which occupied the uterus, represented in Fig. 2, is interesting in another way. When the specimen was first removed, and the thick mass divided, we could at once discern, even with the naked eye, that the gland spaces in the mass were dilated and filled with colloid material. In some specimens the cystic spaces measure a centimetre or more in diameter.

A sufficient number of uteri affected with diffuse adenomyoma has been examined to show that there is a large variation in the proportions of the two tissues concerned in the pathological formation—namely, the adenoid or glandular element and the myomatous tissue. Judging from my own observations, when the myomatous tissue is in excess, the uterus will be but slightly enlarged and hard, sometimes very hard. In this condition the surgeon will be apt to regard the change as being due to fibrosis unless a very painstaking microscopic examination of the uterine wall is made throughout its whole thickness, in

order to determine the presence of isolated gland spaces, which in some of these hard specimens lack the usual stroma. I am quite certain that some specimens classed as examples of "fibrosis uteri," a diseased condition of the uterus which I described in this JOURNAL in 1899, were really examples of diffuse adenomyoma. When the glandular elements predominate the uterus is much larger than usual, and the fundus of the organ will sometimes

Fig. 1.—Uterus in section, showing diffuse adenomyomatous disease. The polypoid process contains glandular elements. From a spinster 43 years of age.

Fig. 2.—Uterus in section, showing a localized patch of adenomyoma in the posterior wall. From a spinster 32 years of age. The gland spaces were cystic, and filled with gelatinous material. (From the author's work on Tumours.)

rise high in the hypogastrium, and then the nature of the disease is scarcely likely to be overlooked when the uterus is removed, unless it be associated with submucous or interstitial fibroids.

In some specimens the glandular tissue may so preponderate over the myomatous that a tumour-like mass is produced with tubular spaces lined with a double row of epithelium; such are sometimes erroneously described as adeno-carcinomata. The naked-eye characters of the organ in such a case further resemble cancer in the fact that polypoid processes project from the free surface of the endometrium into the uterine cavity.

The early investigators of adenomyomatous disease of the uterus, especially Recklinghausen, held the opinion very strongly that these glandular formations could be explained from an embryological standpoint. After an elaborate research, Recklinghausen expressed the opinion that uterine adenomyomata, and especially those about the tubal angle of the uterus, were mainly derived from vestiges of the Wolffian (mesonephritic) and the Müllerian ducts. Cullen has studied the disease with great thoroughness, and has worked out more than seventy specimens, a larger amount of material than has fallen to the lot of any other investigator; he believes that the epithelial elements are solely derived from the normal glands of the endometrium. Cullen somewhat picturesquely describes the changes in this way:

In cases of adenomyoma of the uterus we usually find a diffuse myomatous thickening of the uterine muscle. This thickening may be confined to the inner layers of the anterior, posterior, or lateral walls, but in other cases the myomatous tissue completely encircles the uterine cavity. This myomatous tissue contains large or small chinks and into these chinks the normal uterine mucosa flows. If the chinks are small, there is only room for isolated glands, and where the spaces are of goodly size, large masses of mucosa flow into and fill them. We accordingly have a diffuse myomatous growth with normal mucosa flowing in all directions through it. The mucosa lining the uterine cavity is normal.

There is another side of the question. Now that this disease is more widely recognized, several observers have drawn attention to the frequency with which inflammatory complications of the Fallopian tubes are associated with diffuse adenomyoma of the uterus. It is true that tubal inflammations are fairly common accompaniments of the ordinary forms of fibroids, especially the submucous variety, but the inflammatory complications of diffuse adenomyoma are not only very frequent, but they are by no means confined to the tubal tissues, they involve the peritoneal investment of the uterus also. This is a

matter of great interest, because it may ultimately come to pass that bacteriologists will prove that the tissue changes which lead to fibrosis uteri and diffuse adenomyoma have a microbic origin. Some important evidence in relation to this view of the disease is afforded by the observations of Archambault and Pearce in New York, and by Grünbaum in Berlin. These observers have recorded cases in which adeno-

myomatous uteri have become infected with tubercle. In both cases the women had a tuberculous focus in the lung, and in Grünbaum's patient a few tubercle bacilli were found in sections prepared from the adenomatous tissue in the uterus. Although tuberculous endometritis is rare, the clinical symptoms which accompany it so closely simulate a degenerating submucous fibroid or a mass of adenomyoma that it is extremely likely to be overlooked. In 1904 I removed the uterus from a spinster 46 years of age,

which was enlarged, and its fundus appeared as a rounded body in the hypogastrium. The patient had become profoundly anaemic in consequence of very profuse and frequently recurring uterine bleeding, associated with an elevated temperature. The irregularity of the haemorrhages and the fever led me to attribute these troubles to the presence of a degenerate submucous fibroid. In due course I performed subtotal hysterectomy. The uterus had firm and troublesome adhesions to the rectum and bladder.

On opening the uterus, after its removal, we saw at once that the trouble did not depend on a fibroid, but on a rounded, unencapsuled mass projecting from its anterior wall into the uterine cavity; the diseased tissues extended into the uterine cornua and the terminal sections of the Fallopian tubes. The manner in which the abnormal tissue involved the endometrium is well represented in Fig. 4. I perceived at once that the disease was of an uncommon kind, and Dr. Gabbett kindly undertook the microscopic investigation of the uterus, and found the new tissue to be a tuberculous mass arising in the endometrium. It contained giant cells, epithelioid systems, and

detached pieces of the uterine glands. He also succeeded in finding tubercle bacilli. Reconsidering this specimen in the new light afforded by Grünbaum's observations, it appears to me extremely possible that this was in all probability an adenomyomatous uterus which had become infected with tubercle bacilli. Cuthbert Lockyer has described in detail an adenomyomatous uterus removed from a spinster 48 years of age in which both Fallopian tubes were tuberculous.

It has been already remarked that this diffuse adeno-

Fig. 3.—A magnified section of endometrium showing the peculiar stroma in which the gland tubes are embedded.

Fig. 4.—Uterus laid open by a vertical incision. The endometrium on the anterior wall is occupied by an unencapsuled mass of tuberculous adenomatous tissue. From a spinster 46 years of age. The patient was in excellent health four years after the operation.

myomatous disease of the endometrium lacks a specific symptomatology. The leading clinical features may be summed up thus: It is most common between the thirtieth and fiftieth years, but it has been observed in patients of 20 and in women of 60 years. It occurs in spinsters and in barren married women as well as in those who are fertile. In regard to this matter, Cullen examined the clinical histories of 49 cases of diffuse adenomyoma of the uterus: "Nine patients were spinsters and 40 were married; of these, 6 were sterile, 2 had had miscarriages, and 32 had had children." Among the 16 cases observed by Grünbaum, 6 had borne children. Of the 15 cases under my own care, 7 of the patients were spinsters; and of the 8 married women, 4 were mothers, and 1 had been delivered of fourteen living children.

The symptoms of which the patients complain are profuse menorrhagia, and in severe cases sanguineous fluid may flow from the vagina, sometimes for five or six weeks without intermission. Pain at the menstrual period is fairly common.

On physical examination the uterus is found to be bigger than normal, and in some cases the enlarged fundus may rise high in the hypogastrium. The contour of the uterus may be quite smooth, but in many instances it is irregular. This unevenness may be due to the localization of the adenomyomatous tissue to one wall of the uterus, or the disease may be complicated by the presence of subserous or interstitial fibroids.

It will be seen that these signs and symptoms are those which commonly accompany a submucous uterine fibroid, and it is under this impression that operative treatment is most commonly recommended and undertaken. These are also the signs furnished by fibrotic uteri. When adenomyomatous changes in the uterus are complicated by chronic bilateral infections of the Fallopian tubes, the nature of the affection is very liable to be overlooked, especially when the uterus is only moderately enlarged.

Occasionally a shrewd and experienced observer may suspect adenomyomatous disease before operation; even then the use of the microscope is indispensable for its identification.

TREATMENT.

The only effectual mode of dealing with this disease is removal of the uterus, either by the vagina, or preferably by the abdominal route. Subtotal hysterectomy with conservation of an ovary gives admirable results, immediate and remote. Even in those cases in which the adenomyomatous mass was complicated with tubercle the patients made excellent recoveries, and the condition of these women many months after operation is stated in the reports to have been excellent. It is also worthy of note that no instance is recorded in which hysterectomy has been performed for this disease and the patient has again come under observation with recurrence.

In order to show the uselessness of drugs against diffuse adenomyoma of uterus I will mention the case of a patient who suffered from profuse menorrhagia. An obstetrician of repute thinking she had a submucous fibroid recommended her to take thirty drops of the liquid extract of ergot three times each day. She continued regularly to swallow this stuff for fifteen years. The menorrhagia became so profuse that at the end of this time I was asked to remove the uterus. It was adenomyomatous. The prolonged use of ergot had caused the tip of her nose to become blue and dry, indeed it resembled the nose of a mummy.

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THE Orient Company's *Ormuz* will make a cruise to Montenegro, Sicily, and various Mediterranean ports in March, and to Athens and Constantinople in April.

REMARKS ON A SERIES OF CASES OF ADENO-CARCINOMA OF THE BODY OF THE UTERUS.

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It is very often stated in textbooks that carcinoma of the body of the uterus only occurs in some 2 or 3 per cent. of cases of malignant disease of that organ. This, I believe, is a quite incorrect estimate and has misled the general practitioner into the belief that the disease is very rare.

Within the last year amongst the cases of malignant disease of the uterus upon which I have operated there have been five in which the disease was an adeno-carcinoma of the body. All these cases occurred in my private practice, and in every case the uterus was examined microscopically in the Pathological Institute of the Glasgow University, and the tumours pronounced to be adeno-carcinoma.

In three of the cases adeno-carcinoma was suspected. In these the uterus was curetted and the tissue removed was sent to the pathologist. In two of the cases, however, the diagnosis of fibromyoma of the uterus was made, and the true nature of the condition was only recognized after the uterus had been extirpated. I shall refer to these cases later.

In three of the cases the disease had become diffused over the whole endometrium, but in two it was circumscribed. In one of the latter (Case I) it was so limited that I had almost completely removed the disease with the curette.

The following is a brief summary of the cases:

CASE I.

Miss K., aged 52, was sent to me by Dr. J. S. McKendrick. Patient stated that the menopause came on when she was 49. The only symptom in this patient's case was irregular uterine haemorrhage, which had been going on for three months before she consulted Dr. McKendrick. Suspecting carcinoma of the body of the uterus, I curetted the uterus and had the scrapings examined by Dr. Teacher, who pronounced them to be adeno-carcinoma. I performed abdominal hysterectomy, removing the entire uterus and upper part of vagina, in St. Elizabeth's Home on October 18th, 1907. Upon examining the uterus after operation a small cavity, about the size of a finger-nail, was observed just inside the internal os. On cutting sections through the part it was found that the curette had almost removed the whole of the malignant tissue. The patient made an uninterrupted recovery.

CASE II.

Miss McH., aged 52, was seen by me in consultation with Dr. McMillan, Pollokshields, on November 3rd, 1907. She stated that the menopause had not occurred, and that for fully sixteen months she had been having uterine haemorrhages. These were sometimes very excessive. During the previous four months she was seldom free from a haemorrhagic discharge. She never had any pain, and, indeed, had no other symptoms but haemorrhage. Upon bimanual examination the uterus was found enlarged to about the size of a fetal head. Both Dr. McMillan and I considered the condition a diffuse fibromyoma. Upon November 7th, 1907, in the Park Nursing Home, I performed abdominal hysterectomy, leaving a portion of the cervix behind. After the operation I opened the uterus which had been removed. I suspected the tumour was malignant because of its being so diffuse and friable. My surmise proved to be correct, for Dr. Teacher reported it to be an adeno-carcinoma. I therefore removed the cervix per vaginam a few days later. The patient made an uneventful recovery.

CASE III.

Mrs. E., aged 54, was sent to me by Dr. Gemmell of Coatbridge on March 10th, 1908. The patient informed me that she had three children, and that the menopause occurred when she was 52. Eighteen months later a haemorrhagic discharge began to occur. This continued almost constantly until she consulted Dr. Gemmell a few days before he sent her to me. During the three months before I saw her there was abdominal pain; prior to this she had no pain. Upon bimanual examination an irregular nodular swelling about the size of a fetal head was felt in the pelvis; the uterus appeared to form part of the swelling. I diagnosed the condition as a fibromyoma. She went into the Linedoch Nursing Home a few days after I saw her. Considering the case to be one of fibromyoma I performed abdominal hysterectomy, leaving only a small portion of cervix. I sent the specimen afterwards to Dr. Teacher, who reported that the myoma had become invaded by an adeno-carcinoma. I consequently removed the cervix per vaginam a few days later. The patient made an uneventful recovery.