Cases of fibroma and fibro-myoma of the broad ligament / by Alban Doran.

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CASES

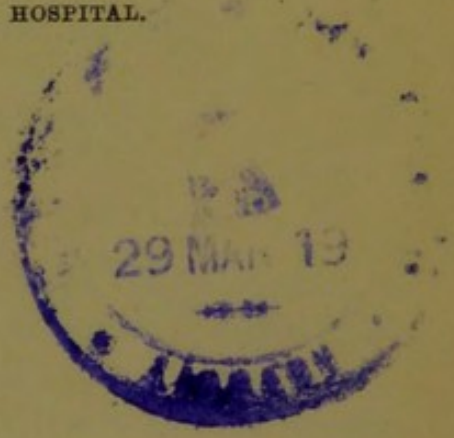
OF

FIBROMA AND FIBRO-MYOMA OF THE BROAD LIGAMENT.

BY

ALBAN DORAN, F.R.C.S.,

SURGEON TO THE SAMARITAN FREE HOSPITAL.



Read May 3rd, 1899.

[*From Volume XLI of the 'Transactions of the Obstetrical Society of London.'*] p. 173

LONDON:

PRINTED BY ADLARD AND SON,

BARTHOLOMEW CLOSE, E.C.

1899.

FIBROID OF THE BROAD LIGAMENT WEIGHING FORTY-FOUR AND A HALF POUNDS (TWENTY KILOGRAMMES) REMOVED BY ENUCLEATION; RECOVERY. WITH TABLE AND ANALYSIS OF THIRTY-NINE CASES.

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(Received November 13th, 1898.)

(*Abstract.*)

In this case, where the tumour seems to be the heaviest of its kind on record, the patient was 28, and her last confinement was six years before operation. Shortly afterwards a tumour developed in the left iliac fossa; three years later it became impacted in the pelvis. Dr. Ward Cousins succeeded in pushing it into the abdominal cavity; this gave great relief, but the tumour grew rapidly and albuminuria and anasarca set in. The catamenia remained normal throughout. The tumour grew in such a manner that the lower ribs were not stretched out, but pushed back behind it. In order to spare as much blood as possible, the ovarian and round ligament vessels were ligatured proximally and distally, the capsule divided between the ligatures, which were then tightened, and lastly the incisions in the capsule united, so that after its complete division horizontally, and the securing of the cervix uteri, the tumour was enucleated without loss of blood. The cut edge of the capsule was drawn together

with a purse-string suture, its cavity being packed with iodoform gauze. The serre-nœud was left on the cervix as it answered well its purpose, and lay separated by the capsule and its packing from the peritoneal cavity. Though very weak for a few days, the patient did well. The packing was removed in forty-eight hours; the deep cavity soon shrunk up.

The author, after reviewing earlier tables prepared by Sänger, Bayard Holmes, and Lang, brings forward a table of thirty-nine cases of "fibroid" (fibroma and myoma) of the broad ligament, with an analysis. In no less than six the patient was under thirty years of age, and in just as many over fifty. Menstruation seems unaffected, nor was flooding ever noted. In two cases, including the author's, there were renal symptoms, from pressure on one ureter. The growth is often rapid, but in Binaud's case, closely watched for two years, the tumour only attained the weight of 9 oz. The large tumours cause considerable discomfort, interfere with nutrition, but rarely prove painful. In twenty-seven cases, including all under 20 lbs. in weight, the tumour was sessile, embedded in the folds of the broad ligament. In eleven, possibly twelve, the tumour was pedunculated; in one the pedicle was twisted. In twenty-five cases the weight was given. The tumour weighed over 40 lbs. in one, the case here related; between 30 and 40 lbs. in two; between 20 and 30 lbs. in two; between 10 and 20 lbs. in ten; between 1 lb. and 10 lbs. in 8; and under 1 lb. in two. Of nine pedunculated cases, six or possibly seven recovered from an operation resembling ovariotomy. Six out of twelve simple "enucleations" of sessile tumours died, but all six date from before 1890. Vautrin, of Nancy, twice did pan-hysterectomy after enucleation, saving both patients. Pollosson, of Lyons, successfully enucleated the tumour, deep in the pelvis, from under the peritoneum ("para-peritoneal" method). In three severe cases the serre-nœud or elastic ligature was applied to the cervix. All recovered. When the tumour is small, and limited to the side from which it originated, it may sometimes be safely removed with its ovary and tube, the hypertrophied connective tissue uniting it to the uterus serving as a pedicle. When the tumour is large, the removal of both appendages and amputation of the uterus is usually unavoidable. Retro-peritoneal hysterectomy is probably the best procedure, if practicable. The chief duty of the

surgeon in enucleation of broad ligament tumours is to avoid loss of blood. The patients are nearly always sickly and anæmic (although flooding does not occur in this class of tumour), and they bear hæmorrhage badly. The author urges the method which he adopted as the best way of avoiding loss of blood. Pressure forceps on the distal side are untrustworthy.

THE tumour in the case which I am about to record is, I believe, the largest of its kind ever removed by operation.

The patient, J. B—, was 28 years old, and had been married nine years. A year later she was delivered of her first child, at the sixth month. Two years later her second and last was born at term spontaneously; but the labour lasted three days and three nights for reasons unexplained at the time. The period occurred regularly every fourth week, but latterly the show was less regular, recurring for a day or two after twenty-four hours' disappearance. It was never profuse. Of late the patient suffered from severe pain during menstruation.

More than five years ago, within a year after her second confinement, Mr. T. W. Mead, of Portsmouth, detected a swelling in the left iliac fossa. It grew slowly for two years. In October, 1896, when she was under the care of Dr. Ward Cousins, in hospital, the tumour reached nearly to the umbilicus. The cervix lay high up behind the symphysis, the pelvis being blocked by a growth continuous with the uterus. Dr. Cousins pushed the tumour out of the pelvis. A year later the patient was readmitted under Dr. Cousins with acute œdema and renal symptoms. According to a note which he kindly sent me "the tumour was then fairly out of the pelvis and the cervix scarcely within reach. It had much increased in size." The increase was rapid from then till her admission into the Samaritan Hospital on September 27th, 1898, under my care.

At that date she was greatly emaciated. A large tumour occupied the whole abdomen except the flanks.

It was specially remarkable for its extreme prominence. Superiorly it had grown forward in such a manner that, instead of stretching the lower ribs, they were, on the contrary, almost impacted behind it.* The girth of the abdomen at the umbilical level was 46 inches. The other measurements were as follows: ensiform cartilage to umbilicus 12½ inches; umbilicus to symphysis pubis 14¾ inches; right anterior superior spine of ilium to umbilicus 15⅛ inches; left anterior superior spine of ilium to umbilicus 14½ inches.

The parietes were thin, with dilated veins, but no sign of œdema. The inguino-femoral glands were not enlarged. The surface of the tumour was much lobulated, its substance felt very elastic; indeed, I fancied that I could detect obscure fluctuation.

The vagina was greatly stretched upwards, and it was impossible to reach the cervix. No part of the tumour, nor of the normal genital tract besides the vagina, could be felt either on vaginal or rectal examination. The catheter, passed into the urethra, could be pushed upward and to the right, till its point stopped a little above the middle of the right groin.

The legs, especially the left, were œdematous, but the œdema nearly disappeared after two days' rest. The urine was passed in abundance; it was clear, pale yellow, of low specific gravity, and distinctly albuminous. It remained of the same character six weeks after operation, and apparently had not altered for several years.

At the beginning of her illness, five years ago, the patient suffered for six months from vomiting after food; she was then very anxious, and drank great quantities of tea. The legs, she declared, were often swollen, even at that early stage. The vomiting at length ceased, never to return, nor did she ever suffer from headaches, nausea, or disordered vision. No casts were to be found.

The pulse was 108, small and regular. The tempera-

* This condition was perhaps the most remarkable feature in the case. I have never seen it in any other case.

ture was 99° on the evening of admission, but remained subnormal after the first day. The patient's condition was very bad and the tumour felt quite fixed, but she begged that an attempt might be made to remove it. I accordingly operated on September 29th, Mr. Targett assisting, and Dr. Butler administering the anæsthetic. The parietes were first washed with a strong solution of biniodide of mercury in spirit; the sponges were kept in a 1 in 2000 solution of that salt, and the instruments in a 1 in 40 solution of carbolic acid.

The patient lying at first in the horizontal position, I made a very free incision extending more than four inches above the umbilicus; then I succeeded in delivering a huge, solid, elastic tumour, firmly fixed below and laterally by its peritoneal relations. It had made itself a capsule of the whole of the pelvic peritoneum, opening up both broad ligaments to the level of the ovaries, and of the peritoneum of the right and left lumbar regions and the left iliac fossa. On the capsule lay the ascending colon, also part of the descending and sigmoid flexure, the bladder (in the right groin, as indicated by the catheter), the uterus, of which the fundus lay obliquely to the right, just below the umbilicus, the left cornu highest, the ovaries greatly elongated, and the tubes each with its mesosalpinx unopened.

The right ovarian vessels formed a short cord as thick as two fingers, running obliquely downwards; the left appeared as a great mass passing several inches upwards and outwards. I determined to secure as many vessels as possible before enucleation, so as to avoid hæmorrhage as much as possible.

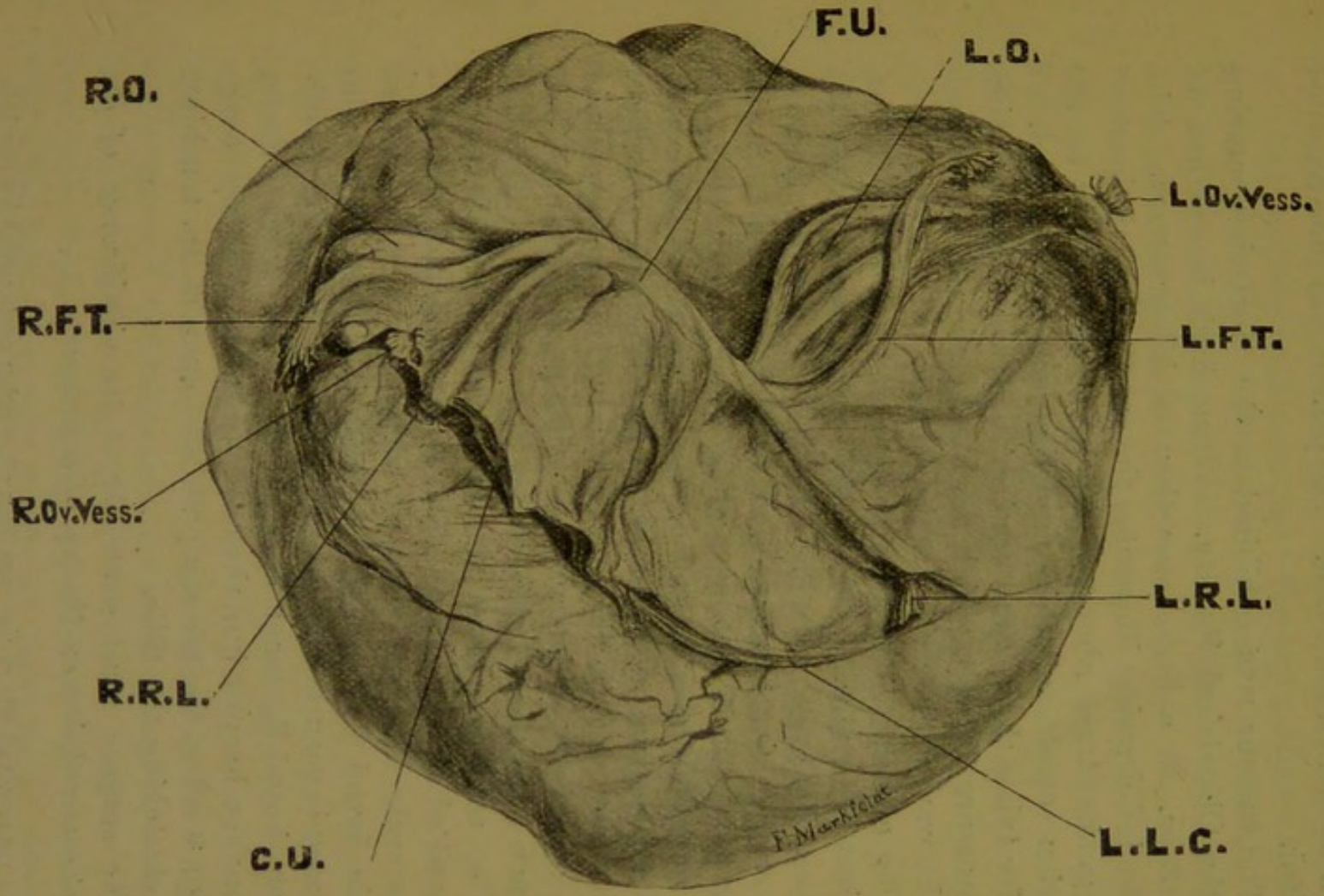
I passed a pedicle needle, armed with No. 4 silk, under the right ovarian vessels and tied them, then I passed another ligature about two inches higher up. I divided the vessels by a horizontal incision through the capsule, midway between the ligatures, which were then pulled tighter. The right round ligament, greatly elongated, was treated in the same way. I then torn

down the capsule, snipping horizontally from right to left, till I came near to the left round ligament. I found that the cervix uteri formed a thick cord or pedicle running for several inches downwards. I secured it and the uterine arteries with a serre-nœud, clamped it nearer to the body of the uterus, and divided it. The nature of the tumour was now evident. I divided and pushed down the capsule posteriorly from right to left from the ligatured right ovarian vessels to the left ovarian vessels. The ascending colon retreated backwards with the detached capsule. The left ovarian vessels, and also the vessels of the left round ligament, were now secured with great care just as on the right side. In a case of the same kind, in future, I shall, as in this case, secure and divide all the vessels on both sides before attempting enucleation.

I now enucleated the base of the tumour. In doing so, I saw the left ureter, greatly dilated, passing over the division of the common iliac artery. There was great shock at this stage as the huge tumour came away, but thanks to the precautions just described, hardly a drop of blood had been shed during the whole of the operation.

The pelvis was elevated, and thus I had a good view into the vast chasm in the peritoneum; the patient's condition at once improved. The serre-nœud answered well, and the cervix was really far from the peritoneal cavity; besides, I did not wish to lose time in dividing its tissues and sewing it up, securing the uterine vessels again. I therefore let it remain, after taking up the right ovarian vessels, already ligatured, in the wire loop. Sponges had been stuffed into the chasm, and I made a purse-string suture with No. 2 silk along the cut edge of the capsule. The upper part of the abdominal wound was closed, the parietal peritoneum was sewn to the outer side of the capsule, close to the lower angle of the wound, and the sponges replaced, after about three small bleeding points had been secured by iodoform gauze.

See "Perils of the Drainage Tube" Brit. Med. Journ. Vol II, 1885. p 1713. J. McCann tells me that he had a case (sp. hysterectomy cases) where he had to operate for volvulus during convalescence - the patient recovered.



Tumour of the left broad ligament, weighing 44 lbs. 8 oz. F.U. Fundus uteri. C.U. Cervix uteri. R.O., L.O. Right and left ovary. R.F.T., L.F.T. Right and left Fallopian tubes. R.OV.VESS., L.OV.VESS. Right and left ovarian vessels. R.R.L., L.R.L. Right and left round ligament. L.L.C. Lower limits of the upper part of the capsule, removed with the tumour.

The abdominal wound was dressed with alembroth gauze, the big concavity between the ribs and the pubes being filled up with a thick pad. The patient was then returned to bed.

The tumour was exhibited at the November meeting of the Obstetrical Society. When fresh it weighed 44 lbs. 8 oz., or a little more than 20 kilogrammes. The appended drawing illustrates the relations of the part of the genital tract removed with it. The ligatures on the ovarian vessels and the round ligament are depicted. I prefer tying those structures on the distal side to trusting to pressure forceps, which are apt to slip, and are much in the way of operative manipulations.

The circumference of the tumour was 3 feet 3 inches, or just 1 metre. Its vertical measurement was 14 inches, its greatest width 15 inches, and its greatest antero-posterior measurement 11 inches. It was ovoid, very pale red in colour, and indistinctly lobulated. It felt uniformly elastic, and on section appeared like a soft œdematous uterine "fibroid." Mr. Shattock reported: "The growth is a fibroma containing no muscle-cells in part examined, which was a portion at the depth of half an inch from the actual exterior."

The relations have already been described in the account of the operation. The tumour was entirely retro-peritoneal. On both sides the mesosalpinx or upper part of the broad ligament was entirely unopened. Just the contrary is seen in the common parovarian and other well-known broad-ligament cysts and in most ovarian cysts, when they burrow into the broad ligament, for they nearly always * select the mesosalpinx and open it up, touching and stretching the tube.

The surgeon must never forget the significance of an intact mesosalpinx on the top of a tumour.

* I once removed one of the rare class of ovarian cysts which burrow into the lower part of the broad ligament, leaving the mesosalpinx intact. (Case V, "Capsules, False and Real, in Ovariotomy: with Notes of Six Cases," 'Brit. Med. Journ.,' 1896, vol. i, p. 960.)

The uterus measured 4 inches, and was extremely flattened; the beginning of the cervix was deflected to the right. The fundus was 3½ inches wide. The mucous membrane of the canal was pale; the cut surface admitted a No. 8 catheter. The remainder of the cervix, left behind, formed a flat strap about one inch broad, running downwards on the capsule and curving from the right to the middle line, where it passed into the pelvis. The uterine tissue felt quite soft, without any trace of a "fibroid" growth. The whole uterus slid on the front of the tumour, to which it was only connected by the ligaments. The tumour had not invaded the uterine peritoneum.

The right Fallopian tube, 4 inches in length, was unobstructed, as was the left, which measured 5 inches. The right ovary, 2½ inches long, was greatly flattened. It contained three well-marked corpora lutea, one quite recent. The left ovary, 3½ inches long, bore no vesicles, nor corpora lutea; the stroma was uniformly loose. A small blood-cyst, ⅛ inch in diameter, lay close to the ovarian ligament.

The perfect ovulation on the right side and the regular menstruation in this case, where the uterus and ovaries were so misplaced, are of high clinical interest.

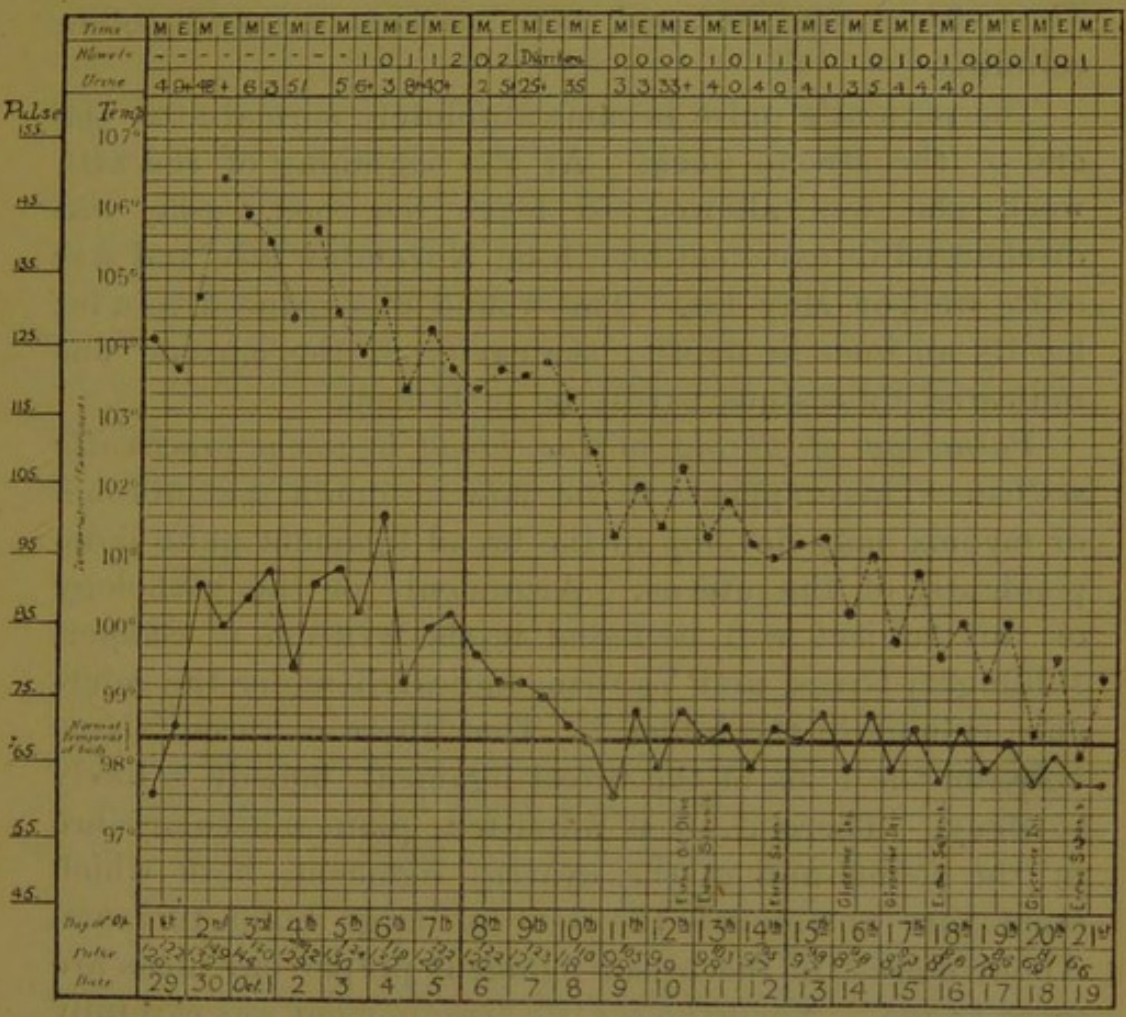
Convalescence after operation.—For two days the patient was in a state of great exhaustion. Stimulant and nutrient enemata were given freely, but milk and meat suppositories proved more satisfactory, as the enemata were not all retained. Twenty-two hours after the operation a severe attack of dyspnœa occurred. The pulse rose to 144, the temperature to 100·8°. On the other hand there was absolutely no restlessness, the patient slept frequently, and flatus passed freely. Urine was also excreted very freely, the catheter not being required after twelve hours. The urine was clear, pale yellow, of low specific gravity, and contained a trace of albumen, but it had been so before the operation and remains so. In forty-eight hours I removed the plug, which was deeply soaked, and

replaced it by a rubber tube and a strip of gauze. The stump of the cervix was kept dry with tannin and iodoform powder and packed around with sublimate gauze. The pulse was still weak and rapid; digitalis and nux vomica proved very beneficial. On the fourth day I removed the rubber tube. The capsule contracted with remarkable rapidity. On the sixth day the temperature rose to 101·6°; the pulse, 132, had been quick from the first. Next day diarrhœa set in and continued till the eleventh, causing much exhaustion, but the patient declared that she felt better, and when the attack ceased the temperature fell to normal, and for the first time the pulse fell to under 100.

The appended chart was carefully prepared by Miss Chater, who, together with my head nurse, Mrs. Phillips, took the greatest pains, and not in vain, to bring this most troublesome case to a successful issue. The chart is instructive, and would seem to indicate that the patient's critical condition was due to sheer exhaustion, and not to any sapræmic or septicæmic condition. At first sight the greater proportional rise in the pulse rate compared to the temperature would seem to imply that it was otherwise. But the patient's pulse was 108 before the operation. I agree entirely with Dr. Howard Kelly, who writes: "I have repeatedly seen patients recover whose pulse rate was as high as 140 or 150 for some hours; in one instance the pulse ranged between 150 and 162 for three days, after which the patient made an uninterrupted recovery."* For my own part I have seen high pulses persist for many days in feeble patients otherwise doing well. The sharp rise of temperature marked on the chart on the sixth day probably indicated some intestinal irritation. It will be seen that the pulse was then falling, and that both pulse and temperature continued to fall even on the ninth and tenth days, when the diarrhœa was very

* 'Operative Gynæcology,' vol. ii, p. 72. He further declares that he removed an ovarian cyst from a feeble old woman, whose pulse went up to 210 during the operation—at one time to 240; yet she made a good recovery.

severe. Perhaps absorption of iodoform accounted, to a certain extent, for the high pulse. On the ninth and tenth days the patient took two grains of quinine every four hours. This dosing caused no unpleasant symptoms, and the patient's strength quickly improved.



Fibroid of the broad ligament weighing 44 lbs. 8 oz. Pulse and temperature chart for twenty-one days after the operation.

By the twelfth day all the sutures had been removed. The parietes were so lax that there was absolutely no strain on the cicatrix. The cavity was now syringed out daily with antiseptic lotion (biniodide of mercury, 1 in 2000) alternately with lotio rubra. The serre-nœud came off on the tenth day, the last piece of slough from the cervix on the twenty-second. After that space of time I

dressed the cavity, now very shallow, with red lotion. The lotion, if syringed into the cavity, escaped from the vagina, and vaginal injections came out at the lower angle of the abdominal wound. The cervix was, I found on vaginal examination, a mere thin diaphragm ; it had come down low, and nothing could be felt in the fornices. The patient had escaped both perimetritis and pelvic cellulitis.

The patient's pulse became absolutely normal after the end of the second week. At the beginning of the fifth week she was allowed to leave her bed. She was discharged in excellent health on November 9th, and was quite well on May 1st. The wound was reduced to a pit hardly an inch in depth ; the cavity of the capsule was indicated by a sinus hardly an inch deep.

Pathology of fibroid of the broad ligament practically settled.—There appears to be now no doubt that fibroma or myoma may develop in the broad ligament quite independently of the uterus. Arguments on the pathology of this subject will be found in the writings of Sänger, Billfinger, Gross, and Vautrin, indicated under the reference column in the tables.* That there is fibrous tissue between the folds of the broad ligament nobody is likely to deny. There is, it is admitted, plain muscular fibre in the round and in the ovarian ligament, both which bands are sometimes the seat of large solid tumours. About muscle in the broad ligament proper our ideas are more vague. Nevertheless, its arrangement was carefully studied by Rouget forty years ago.† He found that the

* Since I prepared this communication, M. Griffon's note on a "Fibro-myome aborigène du ligament large" has appeared in the 'Bulletins et mémoires de la Société Anatomique de Paris' (January, 1899, p. 79). The tumour, found during the post-mortem examination of a woman aged thirty-two, had caused no symptoms. It was of the size of a duck's egg, and united to the ovary by a distinct mesentery, partly reflected on to the infundibulo-pelvic ligament. The uterus was absolutely distinct from the tumour, which had displaced it backwards. This case resembles Billfinger's (Tables, No. 14). Lang's tables include half a dozen cases of latent tumours of the broad ligament first discovered at the necropsy.

† "Recherches sur les organes érectiles de la femme, et sur l'appareil

muscular fibres in the broad ligament, when they come near the side of the uterus, interlace, some of the posterior fibres coming to the front, and some of the anterior passing behind. They thus form a dense muscular sheath in this region as they run into the uterine tissue. In woman, "as in other mammals, the uterus and its appendages are included in the substance of a wide muscular membrane of which the so-called peritoneal ligaments are mere dependencies." *

This sheath deserves further study. In any case it is clear that there is muscular tissue in the broad ligaments, so that a myoma may well develop in it independently of the uterus. A fibroma may certainly so develop. In my case the body and cervix were alike absolutely independent of the tumour. Doubtless the growth had its origin in the connective tissue close to the uterine part of the cervix, as others have already observed.

Previous Records.

For the clinical history and surgery of fibroids of the broad ligament it were best perhaps to rely more or less on experience. Tabulation greatly assists us in such study. After Sänger had drawn up his tables, some more were carefully prepared in 1888 by Dr. Bayard Holmes of Chicago,† and a yet more complete set by Lang of Nancy in 1892; ‡ since they were published a number of cases have been recorded, especially by French

musculaire tubo-ovarien dans leurs rapports avec l'ovulation et menstruation," 'Journal de la Physiologie de l'Homme et des Animaux,' vol. i, 1858, pp. 320, 479, and 735. This treatise deserves further study.

* Loc. cit., p. 735, Waldeyer ('Das Becken,' 1899) divides the broad ligament into "mesosalpinx" and "mesometrium;" the latter, beginning below the level of the ovary, contains muscular fibre as well as the well-known parametric connective tissue.

† "Primary Tumour of the Broad Ligament; with a Table of Seventeen Cases," 'Journal of the American Medical Association,' vol. x, 1888, p. 191.

‡ "Les Tumeurs solides primitives des ligaments larges," 'Thèse de Nancy,' 1892.

authorities. I have succeeded in collecting thirty-nine * cases selected as most probably genuine from a pathological and surgical view, and have studied the original reports, excepting in the case of Nos. 2 † and 6.‡

* See note at end of tables, relating to a fortieth case by Jacobs of Brussels.

† The earlier volumes of the 'Prager medicinische Wochenschrift, seem rare in our libraries.

‡ Sänger admits that there were no precise anatomical notes in the original report.

TABLE OF CASES.

Table of Cases of Fibroma and Fibro

N.B.—These tables do not include (1) pure sarcoma of broad ligament (Péan's cas… tables, 'Archiv f. Gyn. und Geburts.,' Bd. xxi, p. 279), nor (3) fibroma of ovaria… p. 206; and Briggs, "Fibroma of the Ovary and Ovarian Ligament," 'Brit. Me…

No.	Age.	Children; catamenia.	Symptoms.	Character of tumour.	Weight.
1	47	Multipara	Spherical elastic tumour; 2 years in development	Sessile myoma of right broad ligament, partly cystic; adherent intestine; uterus and left appendages distinct	—
2	35	Unipara	Tumour noticed after delivery, 1¼ years before operation; rapid growth following symptoms of peritonitis; prolapse of uterus and vagina	Pedunculated elastic fibro-sarcoma (? œdematous fibroma) of right broad ligament; uterus separate	17 lbs. 10 oz.
3	22	Nullipara; never menstruated	Swelling 6 years	Pedunculated fibro-myoma of right broad ligament; dermoid cyst same side; ascites; infantile uterus	11 lbs.
4	42	Nullipara	Swelling 7 years	Sessile myoma of left broad ligament, closely applied to uterus (not evident how far it was cystic)	—
5	19	Unipara; amenorrhœa 7 months	Abdominal swelling; amenorrhœa; prolapse	Pedunculated, bilobed, œdematous fibro-myoma of left broad ligament; left ovary separate	18 lbs. 11 oz.
6	—	—	—	Sessile myoma descending into pelvis, whence it could be pushed up to a certain extent	—
7	35	4-para; regular	Abdominal swelling 3 years	Sessile fibroma in left broad ligament; uterus and both ovaries normal and separate from tumour	39 lbs. 8 oz.
8	—	Multipara	Emaciation; ill 8 years	Sessile fibro-myoma of right broad ligament; ovary and uterus quite distinct	30 lbs. 8 oz.
9	32	Nullipara; regular	Pregnancy suspected; good health; then sudden abdominal enlargement and emaciation	Pedunculated tumour (œdematous fibroma?) connected with left broad ligament; ascites (author not certain it was not ovarian in origin)	12 lbs.

oma of the Broad Ligament.

7 in Bayard Holmes's tables), nor (2) fibroma of round ligament (see Sänger's ment, duly recognised (see author's tables, 'Trans. Obstet. Soc.,' vol. xxxviii, rn.,' 1897, vol. i, p. 1083).

Operation.	Result.	Operator.	Reporter and reference.
one	Died of general chronic peritonitis; pus found under the intestinal adhesion	None	Schetelig, Archiv f. Gynäk. u. Geburts., Bd. i, p. 425 (age given incorrectly, 41, in Sänger's and B. Holmes's tables).
gature and division f pedicle	Recovered	Schmid	Schmid, Prager med. Wochenschr., 1878, p. 260.
gature and division f pedicle, including vary (pedicle was lmost sloughy)	Recovered	Mikulicz	Mikulicz, Wiener med. Wochenschr., 1879, p. 576.
rtial enucleation; ase of "cyst" (capule) sewn over	Death 4th day; sloughing of parametric tissue	Gayet	Gayet, Lyon médical, vol xv, 1874, p. 542.
t stated; evidently gature and division f pedicle	Recovered	Sänger	Sänger, Archiv f. Gyn. u. Geburts., Bd. xvi, p. 258.
ucleation; rectum rn and sewn up	Died 2nd day; hæmorrhage from some vessel in parametrium	Bardenheuer	Bardenheuer (see Sänger, loc. cit., No. 5, p. 281).
ucleation; left kidey and supra-renal psule lay in pelvis; moved with tumour	Death 5th day from peritonitis	Billroth	Buschmann, Wiener med. Wochenschr., 1880, No. 28, p. 799 (age wrong in some tables).
ucleated; capsule nd peritoneum drainl separately	Recovered	Rydygier	Rydygier, Deutsche Zeitschr. f. Chirurg., Bd. xv, 1881, p. 279.
dicle ligatured and ld in lower angle of dominal wound by ns (no serre-nœud)	Death 13th day; retraction of pedicle 10th day	Chénieux	Chénieux, Archiv. de Tocologie, 1880, p. 439.

No.	Age.	Children; catamenia.	Symptoms.	Character of tumour.	Weight
10	—	—	No clinical notes	Sessile fibro-myoma of left broad ligament; cyst of right ovary	—
11	32	4-para; menorrhagia	Swelling in left fornix, 5 years under observation; very small at first, rapid enlargement; dysuria	Sessile fibro-myoma of left broad ligament, partly cystic; uterus separate, moveable	23 lbs.
12	30	Nullipara	—	Sessile myoma, left broad ligament (a submucous uterine tumour had been enucleated previously)	"As big as pregnant uterus at 5th month"
13	32	Nullipara	Detected a fortnight after removal of small submucous myoma	Sessile myoma, left broad ligament; separated by a groove from the uterus	"As big as a child's head"
14	56	Multipara; menopause at 46	No clinical history of tumour; died of apoplexy; tumour discovered at necropsy *	Pedunculated fibro-myoma of right broad ligament, entirely distinct from ovary and tube	"As big as a fist"
15	39	4-para	Tumour noted after delivery, a year before operation	Sessile, bilobed, œdematous fibroma, involving both broad ligaments	11½ lbs.
16	47	Nullipara	—	Almost sessile fibro-myoma, left broad ligament; right ovary, tube, and uterus free	2 lbs.
17	29	Multipara	Mistaken for pregnancy	Sessile fibroma of left broad ligament; uterus and ovaries separate	4 lbs.
18	35	Unipara	Tumour recognised 11 months before operation	Sessile myoma of right broad ligament; uterus free	10 oz.
19	47	—	Rapid recent enlargement of abdomen; frequent retention of urine	Sessile myxo-fibroma of left broad ligament; uterus separate, pushed to right	—

* Lang ('Des Tumeurs solides primitives des ligaments larges") adds six and perhaps was sessile. In Konrad's case (Lang's tables, No. 34) the tumour was probably Millot-Carpentier's (ib., No. 37) was believed by the operator to be a fibro-myoma

Operation.	Result.	Operator.	Reporter and reference.
nucleation; also ova-iotomy	—	Schröder	Schröder, Berliner klin. Wochenschr., No. 8, 1881, p. 112.
nucleation; 4½ inches f left ureter had to e dissected off tu-nour	Recovery; secondary hæmorrhage; tetanus 6th day (from inflamed hypodermic puncture, or burn on right tro-chanter from hot water bottle)	Freund	Freund, Gynäk. klin., 1885, p. 289.
nucleation; capsule ewn up	?	Freund	Ibid., p. 292.
one	—	None	Freund, ibid., p. 292.
one	Tumour discovered after death	None	Billfinger, Ein Beitrag zur Kenntniss der primären desmoiden Geschwülste in der breiten Mutterbänd-ern, Inaug. Dissert., Würz-burg, 1887.
nucleation; supra-aginal hysterectomy; erre-nœud to cervix	Recovery; acute mania during convalescence, but had suffered from mania before operation	Bantock	Bantock, Brit. Gynæc. Journ., vol. iii, 1887, p. 493 (figured).
emoval after ligature f short broad pedicle left ovary not found)	Recovery	Meredith	Meredith, Trans. Obstet. Soc., vol. xxix, 1887, pp. 249 and 514.
aucleation; drainage y gauze	Death 3rd day ("sep-sis")	Fenger	Bayard Holmes, Journ. Amer. Med. Assoc., vol. x, 1888, p. 191.
aucleation; capsule ewn up	Recovered	Streeter	Bayard Holmes, loc. cit., and Amer. Journ. Obstet., vol. xxi, p. 211.
ucleation; ovary re-oved with upper art of capsule; va-inal drainage only	Death 10th day; puru-lent peritonitis	Martin (Berlin)	Langner, Zeitschr. f. Ge-burtsh. u. Gynäk., Bd. xiv, 1888, p. 275.

en cases where the tumour was discovered after death. In all these cases the tumour o-peritoneal lipoma; in Le Dentu's (ib., No. 32) a papilloma of the broad ligament. ovary.

No.	Age.	Children; catamenia.	Symptoms.	Character of tumour.	Weight
20	48	2-para; regular, scanty	Abdominal swelling 7 years; latterly very rapid	Sessile fibroma, right broad ligament; smaller pedunculated tumour and several small solid tumours in both broad ligaments; uterus quite separate	15 lbs. 6 oz., 13½ pints fluid
21	—	—	—	Sessile tumour, like a soft œdematous myoma of uterus	11 lbs.
22	—	—	—	As in No. 21	3 lbs.
23	55	Menopause 7 years	Noticed swelling 3 years; ultimately it grew rapidly	Pedunculated œdematous fibro-myoma, left broad ligament	2 lbs.
24	66	—	Pelvis never explored in patient's lifetime; for a few years anasarca; symptoms of arterial sclerosis; no albuminuria	Sessile spherical fibro-myoma of left broad ligament, blocking pelvis and obstructing opposite (right) ureter	—
25	42	Nullipara	No clinical history	Sessile lobulated fibro-myoma, left broad ligament	22 lbs.
26	33	—	—	Pedunculated lobulated fibroma, right broad ligament, undergoing sarcomatous degeneration; quite distinct from ovary and uterus	"Volminou
27	31	Nullipara	Abdominal pains 3 years; swelling 1 year	Pedunculated tumour of right broad ligament	5½ lbs.
28	23	Nullipara; regular, scanty, painful	Hysterical fits, vomiting; paralysis 2 years; hypogastric tumour, very sensitive to touch, noted about same time	Pedunculated fibro-myoma of right broad ligament; pedicle thin, broad, and independent of ovary and tube. Left ovary cystic	9 oz.

Operation.	Result.	Operator.	Reporter and reference.
nucleation ; severe æmorrhage	Death in 20 hours	Tédenat	Pozzi, Traité de Gynéc., ed. 1, p. 795, foot-note (in all later editions).
—	—	Lawson Tait	Tait, "The Pathological Importance of the Broad Ligaments," Edin. Med. Journ., vol. xxxv, 1890, pp. 1 and 97.
—	—	„	Ibid.
nucleation ; stump of apsule secured by erre-nœud	—	„	Ibid. (N.B.—Mr. Tait states in his Diseases of Women and Abdominal Surgery, vol. i, 1889, p. 221, that he has had 4 cases of this kind [no details].)
o operation	Died of uræmia, hydronephrosis, and atrophic interstitial nephritis of right kidney ; left kidney normal	None	Gouget, Bulletins de la Soc. Anat. de Paris, 1892, p. 222.
nucleation ; tissue between tumour and terus served as a edicle ; uterus not emoved ; capsule rained with gauze	Recovered	Rouffart	Rouffart, Bulletin de la Soc. Belge de Gynéc. et d'Obstét., vol. iii, 1892, p. 119.
Removed by laparo-omy;" evidently liga-ure and division of edicle	—	Breisky	Gross, "Contributions à l'Histoire des Tumeurs solides, &c.," Congrès Français de Chirur., 6e Session, 1892, p. 249.
emoval by ligature nd division of pedicle; ight tube and ovary ft behind	Recovered	Gross (Nancy)	Gross, loc. cit., No. 26, p. 244; and Lang, Des Tumeurs solides primitives des ligaments larges, p. 86.
emoval by ligature nd division of pedi-le ; left ovary re-oved	Recovered	Demons (Bordeaux)	Binaud, Bulletins et Mémoires de la Soc. de Gynéc., &c., de Bordeaux, 1893.

No.	Age.	Children; catamenia.	Symptoms.	Character of tumour.	Weight
29	32	Nullipara; married 13 years; regular	Lumbar pains extending to right thigh 1 year; tumour as big as an orange in right fornix; uterus pushed to left; exploratory operation 5 months before removal	Sessile fibroma of right broad ligament quite separate from uterus. (N.B.—Its upper limits were too low to allow of enucleation after usual manner)	—
30	51	Menopause 3 years	Solid tumour and ascites 6 months	Eight pints of ascitic fluid	—
31	49	Nullipara; menorrhagia 3 years	Abdominal swelling over 1 year; rapid development	Sessile fibro-myoma; cystic cavities full of blood; uterus myomatous	17 lbs. 10 oz. and much fluid
32	About 28	Nullipara; married 2 years	Colicky pains, followed by rapid growth of tumour	Sessile fibro-myoma, chiefly cystic, undergoing sarcomatous degeneration (possibly deciduoma in a tubal sac.—Pilliet)	—
33	38	—	—	Large sessile fibroma of right broad ligament; right ovary cystic; adherent intestine	—
34	47	Catamenia more abundant after appearance of tumour	2 years abdominal enlargement; dysuria; pain on defæcation	Sessile fibro-myoma, irregular, lobulated; descended into pelvis; uterus behind tumour	15 lbs. 6 oz.
35	51	Menopause 3 years	8 years abdominal enlargement; 5 years swelling, size of cricket ball, right iliac fossa; two sudden attacks of severe abdominal pain	Pedunculated fibro-myoma (with twisted pedicle) of right broad ligament, unconnected with ovarian ligament, ovary, or uterus; intestinal and omental adhesions	7 lbs. 5 oz.
36	35	—	Swelling of 2 years' growth, recently rapid; felt like a thick-walled cyst	Sessile, soft, lobulated fibroid of left broad ligament; cystic left ovary	13 lbs.
37	70	Multipara	No history of tumour; died of cerebral disease	Well-pedunculated, deeply-lobed myosarcoma of left broad ligament, partly calcified; quite distinct from left ovary and ovarian ligament	5½ lbs.

Operation.	Result.	Operator.	Reporter and reference.
nucleation (peritoneum on right of and behind bladder turned up, then tumour was drawn out from under peritoneum "with the greatest facility")	Recovered	A. Pollosson (Lyons)	Pollosson, Lyon médical, vol. lxxiii, 1893, p. 366.
—	Recovered	Handfield-Jones	Handfield-Jones, Trans. Obst. Soc., vol. xxxv, 1893, p. 239.
nucleation; supravaginal hysterectomy; elastic ligature; capsule drained by iodoform gauze	Recovered	Monod	Jeannin, "Fibromyome kystique du Ligament large," Bulletin de la Soc. Anat de Paris, 1894, p. 351.
nucleation; capsule drained by iodoform gauze after partial closure of its edges by suture	Recovered	Thiéry	Pilliet et Thiéry, ibid., p. 682.
emoved with uterus and appendages (retroperitoneal hysterectomy)	? Report published a day or two after operation	Nélaton, jun.	Funck-Brentano and Robineau, ibid., p. 901.
n-hysterectomy and emoval of tumour; aginal and abdominal drainage of capsule; bladder badly wounded, sutured	Recovered; calculus formed in bladder; successful lithotrity	Vautrin (Nancy)	Vautrin, "De l'Extirpation des Fibromes des Ligaments larges," Congrès Français de Chirurgie. 9me Session, 1895, p. 894.
emoval (with ovary) by ligature and division of pedicle	Recovered	Cullingworth	Cullingworth, Trans. Obst. Soc., vol. xxxvii, 1895, p. 222.
ariotomy, then enucleation of tumour; then removal of upper part of uterus (retroperitoneal)	Recovered	Harrison Cripps	Harrison Cripps, Ovariotomy and Abdominal Surgery, p. 491.
one	Tumour not discovered till after death; believed by reporter to be a supernumerary ovary (see text under "Definition," footnote, p. 198)	None	Schultz-Schultzenstein, "Intraligamentäres Myosarcom bei gleichzeitigem Vorhandensein zweier Ovarien," Archiv f. Gyn. u. Geburts., vol. liv, 1897, p. 412.

No.	Age.	Children; catamenia.	Symptoms.	Character of tumour.	Weight.
38	32	1 child at 19; 1 abortion at 22; catamenia regular; dysmenorrhœa and menorrhagia 6 months	—	Sessile fibroma of left broad ligament impacted in pelvis; uterus pushed to right backwards and downwards; bladder drawn up halfway to umbilicus	7 lbs. 11 oz.
39	28	2-para; regular; recently dysmenorrhœa; never menorrhagia	5½ years swelling, first seen in left iliac fossa; 2 years tumour impacted in pelvis, pushed up; then rapid growth; renal symptoms	Sessile fibroma of left broad ligament, pushing up whole of pelvic peritoneum; uterus and ovaries high up in front of its capsule	44 lbs. 8 oz.

[Since these tables were prepared I have found the report of a fortieth case. A[fi]
on right broad ligament, weighing nearly 21 lbs.; uterus pushed to right (*sic*
Brussels (Jacobs, 'Annales de l'Institut de St. Anne,' No. 1, 1898, p. 11).]

Operation.	Result.	Operator.	Reporter and reference.
Enucleation and pan-hysterectomy (as in No. 34 by same operator); vaginal drainage	Recovered	Vautrin (Nancy)	Vautrin, private communication, Oct., 1898.
Enucleation and removal of uterus and appendages by supra-vaginal hysterectomy	Recovered	Doran	Present communication.

, nullipara, catamenia regular; enlargement of abdomen over ten months; fibroma nucleation; pan-hysterectomy; vaginal drainage; recovery. Operator: Jacobs of

Having placed these tables before the Society, I will now proceed to their analysis.

Analysis of the Tables.

Definition.—I include in these tables all cases noted as fibroma, myoma, or fibro-myoma of the broad ligament, the type clinically and surgically termed "fibroid" when uterine. I also admit fibromas becoming sarcomatous or cystic. But purely cystic tumours and primary sarcoma (as in a case of Péan's) are excluded.

All reported as "sessile" are probably genuine. I suspect that many other such cases have been taken for uterine fibroids invading the broad ligament. When No. 16 was exhibited, I thought that it might be of ovarian origin, but ovarian fibroids are always pedunculated, whilst this was absolutely invested by the broad ligament, and lay deep down, very unlike an ovarian tumour invading the mesosalpinx. The ovary was never found, it is true, but was probably flattened out behind the capsule.

Of the cases reported as "pedunculated," some may be spurious. A fibroma of the ovary, strongly adherent to the broad ligament, might be taken for a primary tumour of the latter.* Fibroma of the ovarian ligament must be distinguished from fibroid of the broad ligament; this has not always been done. I have excluded my own case, where the tumour weighed 16½ lbs., though it has already been included by Gross, Vautrin, and Lang of Nancy. Cases of fibroma of the round ligament, on which Sänger, Duplay, and Guinard have written,† may have erroneously been placed under the present category.

* In Schultz-Schultzenstein's drawing (Case 37), the pedicle of the tumour is represented as anterior to the Fallopian tube. Hence his theory that it arose in a supernumerary ovary seems doubtful.

† See Guinard's important work on "Tumeurs extra-abdominales du Ligament rond," now appearing in the 'Revue de Chirurgie,' January, February, 1899.

Some authorities may have, on the other hand, been too particular. Terrillon's case ('Bulletins et Mémoires de la Société de Chirurgie de Paris,' vol. xvi, 1890, p. 35) was ruled "uterine" after a discussion, but the evidence is not convincing. Lebec's case (in Lang's tables) was held by Lucas Championnière to be independent of the broad ligament. Fordyce Barker's "large pediculated cystic myoma of the uterus simulating a fibro-cystic tumour of the broad ligament" ('Amer. Journ. Obstet.,' vol. xiii, 1880, p. 135) was also reckoned as uterine *because* "it was found by the microscope that the tumour was composed chiefly of smooth *muscular fibres*, and *therefore undoubtedly* was a cystic myoma of the *uterus* which had gradually become more and more pedunculated, *until the connection between it and the uterus had become so thin* as to *mislead* the gentlemen present at the autopsy to consider it a fibro-cyst of the broad ligament." There is no proof that the gentlemen were "misled." Fibroids of the broad ligament may be pathologically "myomas," as in Billfinger's case (No. 14), which, like other cases, shows that such tumours arise independently of the uterus, and that the pedicle doctrine, as expressed by Barker's pathologists, is an assumption.*

Age of patient.—In 5 cases (Nos. 6, 8, 10, 21, and 22) no age is given. Out of the remaining 34 the ages run thus: Nineteen years old, 1 case; twenty-two, 1; twenty-three, 1; twenty-eight, 2; twenty-nine, 1; thirty, 1; thirty-one, 1; thirty-two, 5; thirty-three, 1; thirty-five, 4; thirty-eight, 1; thirty-nine, 1; forty-two, 2; forty-seven, 4; forty-eight, 1; forty-nine, 1; fifty-one, 2; fifty-five, 1; fifty-six, 1; sixty-six, 1; and seventy, 1. Some allowance must be made for misprints, for in two tables already published the age of No. 1 is given as forty-one instead of forty-seven.

* See also Dr. Gow's remarkable "Cystic Intra-ligamentous Myoma with Double Uterus," 'Trans. Obst. Soc.,' vol. xl, p. 134. The uteri were removed with the tumour which occupied the right broad ligament. No weight is given.

No less than 6 out of the 34 patients were under thirty, or 17·6 per cent., a proportion far larger than in the case of uterine fibroids, though in fibroma of the ovary the patients are frequently young (Sir J. Williams, 18 ; Thornton, 20 ; Handfield-Jones, 21 ; Cullingworth, 19 ; Author, 24 ; Briggs, 22 : see reference at head of tables). In my own case (No. 39), the heaviest broad-ligament tumour on record, the patient was not twenty-three when it was first detected. Mikulicz's case (No. 3) could have been hardly sixteen when the tumour was first observed. Sänger's (No. 5) must have been yet younger, considering the size of the tumour. In Demons' and Binaud's (No. 28) the patient was twenty-one when the tumour was detected. Pilliet and Thiéry's (No. 32) is doubtful, but Fenger's (No. 17) is typical, and must have taken over a year to grow. In 3 of these 6 young cases the tumours were of great size and weight, in one no weight is given. This evidence is at variance with Mr. Bland Sutton's experience. "All (eleven) occurred in women over thirty-five years of age" ('Tumours, Innocent and Malignant,' p. 141).

The ages between thirty and fifty come out too irregularly to be instructive, for 5 patients were thirty-two, and 4 were forty-seven. But coming to the limits of the menopause we find no less than 6 patients over fifty, or 17·6 per cent., precisely as in patients under thirty. In the patient aged seventy (No. 37) sarcomatous degeneration seemed to be setting in. The case of the patient aged sixty-six (No. 24) is very important; it shows that women with such tumours are not safe after the menopause. The patients aged fifty (No. 23) and fifty-six (No. 14) had small tumours. No. 35, aged fifty-one, was remarkable for twisting of the pedicle, another proof that these tumours are dangerous. These elderly cases are more remarkable for the smallness than for the size of their tumours. In No. 30 (fifty-one) there was ascites.

Thus it is clear that broad-ligament fibroids are not

so restricted to the prime of life as are their homologues in the uterus.

Pregnancy and menstruation.—As in 13 of the 39 records there is no note about gestation or sterility, these tables are of no value in this respect. Twelve of the patients had never borne children, leaving 14 who had been mothers.

Still more unsatisfactory are the returns of the catamenial history. As there is no note in 18 of the 39 cases, an analysis of the remaining 21 would be worthless. In only 4 was menorrhagia noted. In No. 3, where the patient was twenty-two, the uterus was infantile, and she had never menstruated. As the tumour, it appears, was first detected when she was sixteen, it possibly played an active if not a primary share in the arrest of function.

Clinical history.—In 10 of the 39 cases there was no history published. Flooding between menstrual periods never seems to occur; the menstrual histories are, as has just been said, worthless. We may feel assured, however, under the circumstances, that bloody discharge from the vagina is not a prominent or even usual symptom of this kind of tumour. In 2 cases (Nos. 14 and 37) the patients were old subjects who had died of cerebral disease; both were multiparæ, but in neither could any history of pelvic disorder or abdominal tumour be obtained. No. 24 is of extreme importance; there was a clinical history of anasarca without albuminuria, and arterial sclerosis. The pelvis was never explored in lifetime, and the presence of a tumour was not suspected. The patient was old, and no attention was paid to the genital tract. She died of uræmia. The right kidney showed hydronephrosis and atrophic interstitial nephritis. The left kidney, on the other hand, seems to have been normal. Then a fibro-myoma of the left broad ligament was discovered, blocking the pelvis and obstructing the ureter of the right or diseased kidney. Primary renal disease is not rare at sixty-six, but in this instance it seemed to be secondary to obstruction of the ureter by

the tumour. This was markedly the case in my own patient (No. 39), who was only twenty-eight; in her, too, the renal disease was of old standing. The impaction of the tumour, relieved by Dr. Ward Cousins, is doubtless answerable for beginning the mischief, but the weight of the great tumour, after it had been pushed up, seems to have chiefly borne on the region around the left side of the brim of the pelvis, and the corresponding ureter was greatly dilated. Yet, judging from the histories, these tumours, it must be admitted, do not usually obstruct the ureter.

In the remaining 26, that is to say in two thirds of the cases, the tumour was detected by clinical investigation (this must, though not specified, have been the case in No. 8). Pregnancy was suspected in 2 (Nos. 9 and 17), but this was probably the case in more instances in this series. The time during which the tumour lay under the patient's and doctor's observation is seldom an accurate guide of its rate of growth; thus in No. 2 it was detected after delivery about fifteen months before operation, and weighed nearly eighteen pounds. It was seen to grow rapidly at last, but it was probably more than two years old. The long histories are the more reliable: in only 6 was the tumour as long as six or more years under observation (Nos. 3, 4, 8, 20, 35, and 39); in 1 of these (No. 4) no weight is given; in 1 (No. 35) it weighed but 7 lbs. 5 oz., but the pedicle had suddenly become twisted; in the remainder the range of weight was from 11 to 44½ lbs. In several, as is usual with tumours, the growth was ultimately very rapid. In No. 28 the growth was very slow.

In 2 the tumour was discovered accidentally during the treatment of some other pelvic malady; in No. 13 a small submucous myoma had been removed; in No. 28 the pelvis was explored for suspected uterine disease in a very bad case of hysteria.*

Coming to other symptoms, prolapse is noted in 2

* See note on Case 28 under head "Operation."

cases only (Nos. 2 and 5), hence it must be rare, as it is not likely to be overlooked. I have occasionally observed it in patients with ovarian cysts with or without ascites, but never felt sure of the precise relationship of the tumour to the displacement.

Besides the 2 cases where the ureter was pressed upon, retention of urine was reported in 3 (Nos. 11, 19, and 34), and was probably more frequent.

Pain is not a marked symptom, as a rule the larger tumours involve great discomfort and sickliness from malnutrition due to pressure rather than acute or dull pain. Thus Rydygier (No. 8) describes his patient as "miserable-looking," and this was the case with mine (No. 39). In No. 2 there was pain, but from peritonitis. The pain in No. 27 was probably due to the movements of the small, well-pedunculated tumour. Colicky pains were a marked feature in No. 32, but Pilliet here believed that the tumour was possibly *deciduoma malignum* developed in a recent tubal sac.

Here I may note a few cases where the entire history is incomplete, so that they could not be included in these tables. Dr. William Duncan exhibited a large myoma of the left broad ligament in 1889 before the Obstetrical Society ('Trans. Obst. Soc.,' vol. xxxi, p. 309), but no details are published.* Reclus ('Annales de Gynéc. et d'Obstét.,' vol. xxxiii, p. 219) "removed from the broad ligament an enormous fibroma; enucleation gave rise to profuse hæmorrhage, which ceased spontaneously directly the tumour was set free." Dagron and Lucas-Championnière's "voluminous pedunculated extra-uterine fibro-myoma," successfully removed, is not clearly defined; as the authors refer to a "similar" operation by Nicaise for a moveable pedunculated fibro-myoma with ascites, it would seem that by "extra-uterine" they do not imply that it was not connected with the uterus. (See 'Annales

* See also heading (with no details), "A Large Soft Broad Ligament Fibro-myoma weighing Fourteen Pounds," shown by Ewen Maclean, M.D., 'Trans. Obstet. Soc.,' vol. xl, p. 134.

de Gynéc. et d'Obstét.,' vol. xxix, p. 136.) On Terrillon's case I have already dwelt.

Character of the tumour.—In 1 amidst the 39 nothing more is recorded than that there was a solid tumour of the broad ligament and much ascitic fluid (No. 30). Fortunately in all the remaining 38 it is specified whether the growth was sessile or pedunculated. The 27 cases noted as "sessile" are in all senses the most reliable, as far as their right to be included in the present series is concerned. There remain 11 cases of "pedunculated" broad-ligament fibroids.

Of the 27 "sessile" cases it is not stated in 6 on what side the tumour had developed. In 1 (No. 15) "both broad ligaments" were involved. I assisted at the operation, which was performed at the Samaritan Hospital, and examined the tumour. It is quite possible that fibroids may have developed in both ligaments and coalesced, though it is more probable that, as in mine, the tumour originally grew in the left broad ligament. In no less than 14 it is distinctly stated that the fibroid was in the left broad ligament, leaving but 6 specifically noted as right-sided. Hence we may fairly conclude that fibroids of the broad ligament are more frequent on the left than on the right side.

The limits between a solid and a cystic "fibroid" are indefinite. Six only of the 27 "sessile" tumours are specified as "partly cystic" (Nos. 1, 4, 11, 20, 31, 32). No. 32 may be put aside as suspicious; it is the only case in the 27 suspected to be undergoing malignant degeneration. No. 31 is worth studying in the original report. There was extensive hæmorrhage inside the tumour, but whether into pre-existing cysts or into the parenchyma of the tumour we are not informed. The nature of the "cysts" is not explained in Cases 1, 4, 11.

Very indefinite is the precise pathological character of the tumour in these 27 "sessile" cases. It is for that reason that I speak of "fibroids" of the broad ligament. Six are described as "myoma," eleven as "fibro-myoma,"

one (No. 19) as "myxo-fibroma," six as "fibroma;" under these I might include my own (No. 39), but here, as in any of the remaining five, muscle-cells might have existed in a portion whence no section was taken. Of the remaining 3 cases, Nos. 21 and 22 were like a soft œdematous myoma of the uterus, and No. 36 was simply ranked in a series of hysterectomies for "fibroid."

The 11 "pedunculated" cases resemble in character and variety the "sessile" cases; at least they were attached to the broad ligament by a pedicle.* Surgically they are much the same as "fibroids" of the ovary and ovarian ligament, with which they are so liable to be confounded, nor can our suspicions be excluded from some of the 11.

Weight and size of tumour.—In 10 of the 39 cases no weight nor even any distinct idea of the size of the tumour is given. In 4 (Nos. 12, 13, 14, and 26) some notion of the size is recorded. In 25 the weight is stated in figures. I have reduced all to English measure (1 kilogramme = 2·2 lbs. avoirdupois).

The weights may be thus tabulated:

One case over 40 lbs.: No. 39, the subject of the present paper (44 lbs. 8 oz.).

Two cases between 30 and 40 lbs.: No. 7, 39 lbs. 8 oz., No. 8, 30 lbs. 8 oz.

Two cases between 20 and 30 lbs.: No. 11, 23 lbs.; No. 25, 22 lbs.

Ten cases between 10 and 20 lbs.: No. 5, 18 lbs. 11 oz.; No. 31, 17 lbs. 10 oz.; No. 2, 17 lbs. 10 oz.; No. 20, 15 lbs. 6 oz.;† No. 34, 15 lbs. 6 oz.;‡ No. 36, 13 lbs.; No. 9, 12 lbs.; No 15, 11½ lbs.; No. 3, 11 lbs.; No. 21, 11 lbs.

* Possibly some of these cases were really sessile, the reporter meaning that he succeeded in making a pedicle out of the tissues connecting the tumour with the uterus.

† With over thirteen pints of fluid.

‡ Dr. Ewen Maclean's tumour ('Trans. Obstet. Soc.,' vol. xl, p. 134, no notes) weighed fourteen pounds.

Eight cases between 1 lb. and 10 lbs.: No. 38, 7 lbs. 11 oz.; No. 35, 7 lbs. 5 oz.; No. 37, 5½ lbs.; No. 27, 5½ lbs.; No. 17, 4 lbs.; No. 22, 3 lbs.; No. 16, 2 lbs.; No. 23, 2 lbs.

Two cases under 1 lb.: No. 18, 10 oz.; No. 28, 9 oz.

Let it be noted that all the tumours over 20 lbs. were sessile, embedded in the folds of the broad ligaments.*

Of the tumours between 10 and 20 lbs., 6 (Nos. 15, 20, 21, 31, 34, and 36) were sessile, leaving 4 (Nos. 2, 3, 5, and 9) pedunculated. As in my own case of fibroma of the ovarian ligament the tumour weighed over 16 lbs., I on that account alone believe that some of these pedunculated tumours ought strictly to be included under that class, and excluded from the category now under consideration.

Of the tumours between 1 lb. and 10 lbs., 4 were sessile (Nos. 16, 17, 22, and 38) and 4 pedunculated (Nos. 23, 27, 35, and 37).

Of the class under 1 lb., 1 was pedunculated (No. 28) and 1 (No. 18) sessile.

The sessile fibroids seem to be allowed to grow biggest; they are naturally taken for uterine fibroids, and it is certain that they are not necessarily painful. In my own case, the largest, the patient declares that she felt no pain, but suffered severely from its enormous bulk.

On the other hand, the pedunculated tumours were often taken for ovarian tumours or for uterine "fibroids" readily removable. Again, they doubtless may cause pain. In No. 35 (Dr. Cullingworth's case) there was twisting of the pedicle with intestinal and omental adhesions.

Operation.—In five cases (1, 13, 14, 24, 37) no operation was performed. No. 14 is of pathological interest as showing that the tumour, though only "as big as a fist," was completely separate from the uterus. No. 28,

* Since the above was written my attention has been turned to Jacobs' case, where the tumour weighed twenty-one pounds and was sessile. The patient recovered.

the smallest, is of clinical interest, for it was closely watched for two years, the patient being a troublesome, hysterical girl, always seeking for treatment. The neurotic symptoms reappeared after convalescence from the perfectly justifiable operation. In two years the tumour had only grown to a weight of nine ounces.

Nine cases where the tumour was pedunculated underwent operation. In 1 (No. 9) the pedicle was held in the lower angle of the wound by pins, and this case ended fatally; but this occurred in 1880. In 7 the pedicle was treated as in ovariotomy; 6 are reported as "recovered" (Nos. 2, 3, 5, 27, 28, and 35), in 1 (No. 26) the result is not stated.

In 1 (No. 23) the root of the capsule was secured by the serre-nœud, after enucleation, and the patient recovered.

Thus removal of a pedunculated fibroid of the broad ligament by ligature of the pedicle is a distinctly successful operation. So it is with removal of a large fibroid of the ovarian ligament.

Operation on a sessile fibroid is a much more serious matter, yet recently results have been good. In 2 (Nos. 21 and 22) enucleation was presumably done and all recovered, but there is no distinct note of that operative procedure, and it is not stated whether the uterus was left or removed. No. 30 (perhaps pedunculated) recovered.

Pan-hysterectomy after enucleation was done successfully in both Vautrin's cases (Nos. 34 and 38). The damage to the bladder in No. 34 occurred during enucleation.

In 2 (Nos. 16 and 25) a pedicle was made of the tissues connecting the tumour with the uterus. Both recovered. (Enucleation was done in No. 25.)

In 1 (No. 29) the tumour filled the pelvis, its uppermost part only just reaching the pelvic brim. Pollosson dissected up the peritoneum behind and to the right of the bladder, and succeeded in drawing out the tumour from under the serous membrane with ease. The patient recovered—a brilliant operation, no doubt, and worth

attempting when the tumour is similarly placed. He terms it "para-peritoneal enucleation."

In 2 (Nos. 33 and 36) retro-peritoneal hysterectomy was performed after enucleation. No. 33 was reported a few days after the operation, so the result is unknown. No. 36 recovered.

In 3 (Nos. 15, 31, and 39) extra-peritoneal supra-vaginal hysterectomy was performed. In No. 31 (tumour 17 lbs. 10 oz.) the elastic ligature was applied to the uterine stump. In No. 15 (tumour 11 lbs., enucleation very difficult, acute mania during recovery) and in No. 39 (tumour 44 lbs. 8 oz.) the serre-nœud was used to secure the uterine stump. Let it be noted that all three of these grave cases recovered. I have given my reasons why in No. 39 I applied, or rather did not take off, the serre-nœud.

In 12 (4, 6, 7, 8, 10, 11, 12, 17, 18, 19, 20, 32) "enucleation" was performed presumably, but not, evidently, without hysterectomy. No less than six died, and in 1 (No. 10) no result is given. But all the fatal cases occurred before 1890. No. 4 (1894) was incomplete; No. 6 died of hæmorrhage—the rectum had been torn and sewn up; No 7 (which should be studied from the original report, as the earlier tables contain errors about age, &c.) was exceptionally difficult, for the left kidney lay displaced in the pelvis and had to be removed with the tumour, as hæmorrhage was set up during attempts at separation; No. 17 died "from sepsis on the third day;" No. 19 perished from purulent peritonitis; No. 20 from hæmorrhage.

Thus the operation is certainly perilous, but it is not fair to rank the older with the newer cases. As for weight, my own, No. 39, recovered. No. 7, the next in weight, died. No. 8 recovered, and Nos. 11 and 25 were saved, No. 11 recovering from tetanus. In all these cases the weight exceeded 20 lbs.

Conclusions.

From the above tables it may be concluded that when a fibroid tumour of the broad ligament is detected, its removal by operation is desirable. It is not usually painful, but nearly always causes much discomfort and tends to press on the ureters. In a young subject the propriety of operative interference seems indisputable.

The diagnosis, it must be admitted, is not always easy. Ovarian fibroma is relatively frequent in youth, generally quite moveable, and often associated with ascites. Uterine fibroids are rare in youth * and not likely to burrow in a young subject. Fibroma or myoma of the broad ligament is relatively frequent in youth, quite fixed and seldom complicated with ascites. In any case the diagnosis from a uterine fibroid burrowing in the broad ligament is not difficult if the uterine cavity can be measured by a sound and proves to be short. This step, however, is not always practicable—such was my experience. From malignant tumour diagnosis is usually easy.

The extirpation of a fibroid of the broad ligament is in some respects not so dangerous as the removal of a burrowing uterine fibroid. The cervix is seldom much enlarged, and after enucleation is separated more or less completely from the peritoneal cavity by the chasm left in the capsule, which can be kept dry with gauze-packing. On the other hand enucleation is often difficult.

Let not a drop of blood be lost if possible, that is the first principle in enucleation. The rapid shelling out of one of these huge tumours is brilliant operating but faulty surgery. Blood streams from the mass for several minutes. Robust patients with burrowing fibroids of uterine origin tolerate the loss, but women with large broad ligament fibroids are nearly always sickly and anæmic, although they rarely, if ever, suffer from flood-

* See Herbert Spencer, "Uterine Fibroids in Young Women," 'Trans. Obstet. Soc.,' vol. xl, 1898, p. 228.

ings. They bear loss of blood badly. So prevention, the ligature, is better than cure, transfusion.

For these reasons I believe that the method which I adopted is safest. Let the ovarian, uterine, and round ligament vessels be secured by ligatures distally as well as proximally. Then the capsule should be divided between the ligatures, horizontally for two or three inches, the ligatures being afterwards drawn tight. When all the vessels have been thus secured, the incisions in the capsule must be united, so that the lower part of the tumour can be enucleated. I consider now that I departed from this rule, leaving too much to chance, when I divided part of the capsule before tying the left ovarian vessels. Fortunately no bleeding occurred, and at least I secured the vessels before I reached them. Pressure forceps on the distal side are untrustworthy.

Pollosson's "para-peritoneal operation" is no doubt good when the top of the tumour lies low, but in such a case the growth can usually be extracted with a volsella through an incision made on its surface.

What should be done with the uterus? When the broad ligament tumour is small and limited to its own side, it may often be removed with its ovary and tube only, after a little enucleation. The hypertrophied connective tissue uniting it to the uterus may serve as a pedicle. When the tumour is large the removal of both appendages and the amputation of the uterus becomes almost imperative for evident reasons.

Vautrin strongly urges us to perform panhysterectomy. But this operation takes up much time after a tedious enucleation, when the cervix is abnormally situated, and the risk to the ureters is then great, as they are often much displaced. In enucleation itself, these ducts are, it appears, seldom damaged, but in the separation of an abnormal cervix they are less likely to remain unscathed. Still, there are cases where M. Vautrin's counsel might advantageously be followed.

Altogether, retro-peritoneal hysterectomy is the best

method if practicable. My case was exceptional, owing to the cervix being stretched like a band. A serre-nœud was at hand, so I used it to hold fast the cervix and uterine arteries until after enucleation. When that process was completed it seemed best to leave the serre-nœud where it was, as explained on p. 178.

When the tumour is pedunculated, the operation resembles an ovariotomy. A thick stump requires caution in ligature. Sometimes it is safest to ligature the broad ligament internal to the pedicle, taking away the ovary and tube with the tumour.

Brewis. Trans. Obst. Soc. 1897. Hawkins 'Intraligamentary Growths.' Amer. Gyn. & Obst. Journ. 1908

Dixon. American Society I. Lancet Feb 7. 1903

Stöckel. 'Fibromes du Ligament large.' Paris, Masson

Mould 'Large fibroma of right broad lig.' p. 61. Tube & ovary removed separate. Bulletins et mém. de la Soc de Chir. de Paris. Vol XXVIII Feb 12 p. 207. See Pethread's case. p. 206

Erdmann. 'Intraligamentous Fibroids' Amer. Journ. Obstet' 1908 Vol 58 p. 861.

Amand Routh Eden Intraligamentous Tumours of the Uterus. Obstet Soc. Oct. 1906 (Trans Obst. Soc Vol. 47 p 264.)

Haenel 'Beitrag zur Lehre von den retroperitonealen Geschwülsten' Archiv f. Gyn. Vol 125 Feb 1907 p 166

O.O.

Fibro-myoma of Broad Ligament

Pelvic Kidney (as if a tumour). Dr Douglass Bissell
"A Successful Transplantation of a Pelvic Kidney in the
Female, with remarks on the Surgical Treatment of
Kidney misplacements in the Pelvis" Trans. Amer.
Gynaec. Soc. Vol 35, 1910, p 33. It had impeded
labour, & threatened to do so. 4.4.1. 2 ch youngest 14.
1 miscarr. Labour 3rd preg. induced. 31st week. Then
1 mo later Op. ... Kidney held down by vessels running
to internal iliac. When the vessels were divided the kidney
was raised to normal level in loin (it was extraperitoneal
& the posterior pariet. perit. was split & the kidney
sewed up in the loin.)

Delaunay. Fibrome du ligament large
Paris chirurgical No 8, 1911, no 8, p 812. Revue de
Gynéc. Vol XIX no 4 (Oct 1912), p. 397. (abstract)

re Case of Retroperitoneal Fibro-sarcoma

TELEPHONE 2206.

65, GT. VICTORIA STREET,

BELFAST.

Dec 6. 1905.

Dear Sir

I beg to thank you very much for your kind letter and for the copy of your paper in which it was enclosed. I have re read it with much interest, and only regret that I did not do so before preparing my notes on my own case. It would have saved my memory from playing on me the stupid trick which it did, as from my recollection of your contribution I was under the impression that you had dealt with all forms of benign, as opposed to malignant retro-peritoneal tumours. It is, I suppose, another warning of the necessity of veri-

fying one's references. I shall also take an early opportunity of reading your paper on lipomata which I have not yet had the pleasure of seeing.

Believe me, with many thanks for your consideration

faithfully yours

R. J. Johnstone F.R.C.S.

* Author of a case of removal of a retro-peritoneal fibro-lipoma (Brit. J. II. 1905. p. 1452) (recurred 1906) In March 1907 read a "recurrent" lipoma, no trace of malignancy (Brit. J. II. 1907, p. 950)