On extirpation of the entire uterus : a paper read at a meeting of the Obstetrical Society of London on March 4th, 1885 / by William A. Duncan.

ON

EXTIRPATION OF THE ENTIRE UTERUS.

A PAPER

READ AT A MEETING OF THE OBSTETRICAL SOCIETY OF LONDON ON MARCH 4TH, 1885.

BY

WILLIAM A. DUNCAN, M.D., M.R.C.P. LOND., F.R.C.S. ENG.,

ASSISTANT OBSTETRIC PHYSICIAN TO, AND LECTURER ON PRACTICAL MIDWIFERY AT, THE MIDDLESEX HOSPITAL; OBSTETRIC PHYSICIAN TO THE ROYAL HOSPITAL FOR WOMEN AND CHILDREN; EXAMINER IN MIDWIFERY AND DISEASES OF WOMEN TO THE ROYAL COLLEGE OF SURGEONS.

[*From Volume XXVII of the 'Transactions of the Obstetrical Society of London.'*]

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Extirpation of the entire uterus being an operation still *sub judice*, it becomes the duty of everyone who has performed it to publish the result, whether favorable or not. Having excised the uterus twice *per vaginam*, I propose in this paper first to describe each case separately, and then to review the whole subject, discussing the respective merits of the different operations, then the various diseases for which extirpation has been undertaken, more especially with regard to the forms of malignant disease which render the operation advisable or even justifiable.

Hysterectomy or partial removal of the uterus (leaving more or less of the cervix), which is now a well-established procedure, will not be dwelt upon here.

Case 1. *Fungating epithelioma of cervix uteri; removal of the whole uterus per vaginam; recovery.*—Mrs. H—, æt. 37, was admitted into the Royal Hospital for Women and Children on December 11th, 1883, suffering from an attack of pelvic cellulitis. Patient was a well-nourished, but pale woman, complaining of pain in lower abdomen. On examination, the vagina felt hot, uterus tender and somewhat fixed by a parametric exudation, involving especially the left broad ligament. Four days previously, I saw her for the first time in the out-patient department, which

she attended, complaining of emaciation, loss of strength, and a sanious discharge. Had one child eleven years ago and one miscarriage. The note then made on her condition was as follows:—"Uterus freely moveable and not enlarged on bimanual examination. On the anterior lip of the cervix is a fungating growth, about the size of half a walnut, which bleeds freely on being touched; it only slightly extends up the anterior surface of the

CHART 1.

cervix; the posterior lip is apparently healthy; sound not passed."

After admission.—She was ordered opium, effervescing salines with quinine, poultices to the abdomen, and hot water vaginal injections. The inflammatory attack lasted a fortnight, and then the patient gradually improved. (See temperature chart, No. 1.)

January 18th, 1884.—Examined in lithotomy position: uterus freely moveable, but a feeling of some abnormal

thickening in the left broad ligament. The growth has now increased in size and has extended all round the os uteri, involving the whole of the posterior lip, but the vaginal walls are quite free from disease. Sound carefully passed, shows uterine axis normal in length and direction : iodoform freely dusted over the growth.

Extirpation was proposed to the patient and its gravity explained. She readily assented to its performance.

22nd.—Operation at 2 p.m. ; æther ; lithotomy position ; vulva shaved and urine drawn off ; a specially constructed short and wide Sims's speculum was introduced (after the whole of the vulva and vagina had been well washed with a 1 in 20 carbolic solution). The cervix was seized with a strong volsella and pulled downwards and forwards, during which there was free oozing from the vascular growth, then Douglas's pouch was snipped across with scissors. Now (as well as during the whole operation) all bleeding was at once stopped by means of artery forceps, then the left forefinger (well carbolised) was passed into the peritoneal cavity and all round the uterus, which was found to be free from adhesions, but the broad ligaments (especially the left) felt thickened and shortened. Next, the cervix was drawn backwards, the vaginal mucous membrane divided all round and well away from the disease ; the bladder was separated up from the uterus by the finger, and it was then found that the whole uterus could be drawn down more. Some little difficulty was experienced in getting through the peritoneum, as it receded before the finger ; it was, however, caught up with toothed forceps and divided. Next, the lower part of each broad ligament was carefully snipped across and any bleeding points secured with artery forceps, of which there were now a good many in the vagina, so all were removed after the vessels they enclosed had been ligatured with silk. Then the uterus was retroverted and the fundus seized with a pair of strong clamp forceps, but even with much traction it was found most difficult to bring

the right broad ligament into view; with the aid, however, of a broad, flat retractor at the side of the vagina, it could be seen, and an aneurysm needle armed with a double ligature of very stout carbolised silk was passed through it from behind forwards, about three quarters of an inch from the uterus, and so as to include the upper third of the ligament. This portion was tied in two places and divided; the remainder of the ligament was transfixed in its middle, tied in the same manner above and below, then divided, and thus the uterus was freed on the right side. A piece of omentum now appeared, but it was at once replaced and kept up by a large sponge wrung out of hot carbolic solution. The left broad ligament (in the lower part of which a large artery was felt strongly pulsating) was treated in precisely the same manner, tied in three portions, divided, and the uterus removed. There was no oozing from the stumps of the broad ligaments, which now receded from view, but the ligatures on each were left long and brought out on either side of the vagina in a separate bundle. Some more of the vaginal mucous membrane was snipped off in order to be quite away from any disease. The vagina was washed out with a 1 in 40 solution, the sponge removed from the peritoneal cavity, and the whole of the exposed surfaces freely dusted over with iodoform. Next, a double drainage-tube (consisting of two glass tubes a foot long, and separately covered with elastic tubing) was inserted into the vagina; the tubes lay along the posterior wall, one over the other, the upper ends lay in Douglas's pouch, to the lower one was attached a long piece of tubing which passed into a basin of carbolic water under the bed, whilst to the upper one was fixed a piece of tubing a foot long and clamped near the end; tapes secured the tube in position, and the vagina on either side was packed with balls of absorbent wool, dusted over with iodoform, and enclosed in gauze.

About an ounce of blood-stained urine was drawn off, a self-retaining india-rubber catheter introduced into

the bladder, and a half-grain morphia suppository into the rectum. The patient bore the operation very well, the pulse continuing good throughout. The amount of blood lost was trifling.

I would here express my indebtedness to Sir W. Mac Cormac for his assistance and advice during the operation ; also to Mr. William Henry Battle, and to the Resident Medical Officer, Mr. J. F. Briscoe, to whose care and skill, during the after-treatment, the favorable termination of the case is largely due.

10 p.m., patient is quite calm and comfortable ; smiles and says she has nothing to complain of. Pulse 106, resp. 24, temp. 97·6°.

23rd (1st day).—A.M. Had good night ; looks cheerful, complains of thirst ; was given a few small lumps of ice during night. Passed four ounces of clear urine. P.M. Irrigation was attempted this morning with a 1 in 80 warm solution of carbolic acid, but when a small quantity had passed in, the patient complained of acute pain in left ovarian region and her face became anxious, so irrigation was not persevered in, nor was it ever again attempted. No sickness ; tongue slightly dry, white coated ; to have nothing but ice, and one grain opium pill every four hours. Placed on a water pillow and propped up in bed. Slight discoloration of water under bed, in which drainage-tube hangs. Since operation has passed fourteen ounces of urine. Resp. 29, temp. 99·8°, pulse 120, rather running. Iodoform dusted over orifice of vagina, but plugs not interfered with. Ordered a nutrient enema every four hours containing beef tea with pancreatin and pepsin.

24th (2nd day).—A.M. In early part of night complained of pain over left side of abdomen ; there was a good deal of tympanites ; ice-bag applied by house surgeon gave immediate relief, and patient slept well. This morning she feels comfortable, but complains of pain in stomach after swallowing ice. Allowed small quantities of iced milk ; and enemata to be continued. No sickness ; tongue white

and moist. Pulse 148, resp. 32, temp. 99°. P.M. Has had good day, feels comfortable, slept well; pupils dull and contracted. Plugs removed from vagina this morning; no discharge whatever or offensive odour. Vagina syringed out with Condy's fluid and plugs renewed. Nutrient enemata continued, and patient has taken a pint of milk in the last twenty-four hours. Temp. 98°.

25th (3rd day).—A.M. Has been sick three times during the night; about three ounces of greenish fluid ejected altogether; face a little pinched, skin hot, abdomen tympanitic, with some tenderness over the hypogastric region; all liquids by the mouth stopped, only to have bits of ice and continue opium; passed sixteen ounces and half of urine in the last twenty-four hours. No further discharge through drainage-tube. Pulse 140, resp. 26, temp. 99·6°. P.M. Retched twice since morning, but was not sick. Had slipped down in bed, so was lifted up and made comfortable, but during this the drainage-tube slipped out of the vagina; there was no discharge, so tubes not reinserted; iodoform plugs passed gently within vulva. Temp. 99·6°.

26th (4th day).—A.M. Had good night; slightly sick at 7.15 this morning; feels and looks well. Pulse 120, resp. 32, temp. 98·2°. Nutrient enemata continued three times a day; only ice by mouth. P.M. No further sickness; abdomen very tympanitic; a good deal of flatus passed per anum, with much relief; ice-bags left off, still nothing but ice by mouth; kept well under the influence of opium by hypodermic injections. Passed thirty ounces of clear urine during last twenty-four hours. Pulse 140, resp. 24, temp. 99·8°.

27th (5th day).—Slept well, no pain or sickness; passed flatus several times with great relief; allowed half an ounce of milk with same amount of soda-water every two hours; ice to suck at intervals: enemata continued. Plugs removed, vagina syringed, and then dusted over with iodoform and fresh plugs inserted. Self-retaining catheter removed, and new one introduced; no lithates

on catheter or in urine. Pulse 144, resp. 28, temp. 98°. P.M. Has been somewhat excited during the day, face flushed: says she feels all right. Temp. 98·8°

28th (6th day).—A.M. Had rather a restless night; passed two loose motions, and wind several times. Patient expresses herself as being "able to do anything"; plugs removed; vagina syringed and new plugs inserted; no discharge whatever. Abdomen flaccid and not tender on manipulation. No sickness or pain. To continue enemata, and milk and soda-water by mouth. Ordered a small wineglassful of champagne with half a teaspoonful of brandy every three hours. Pulse 120, resp. 32, temp. 99·6°. P.M. Had good day, slept well; takes all that is given her and enjoys it. Temp. 100·2°.

29th (7th day).—A.M. Comfortable night; slept seven hours. To continue as before. From this date vagina daily syringed and iodoform plugs introduced. Urine clear, acid, no albumen. Pulse 120, resp. 32, temp. 98·4°. Ordered beef tea alternately with milk every three hours, allowed a little thin arrowroot; champagne and brandy discontinued. P.M. Feeling and looking well, had a slice of bread and butter with a cup of tea this afternoon. Is still being kept well under opium. Temp. 99·8°.

30th (8th day).—Continues to improve; slight cystitis. Pulse 120, resp. 32, temp. 99·2°. P.M. Reading newspaper, and feels quite comfortable. Temp. 100·4.°

31st (9th day).—Had good night; bladder washed out with a Condy's solution. Temp. 99·2°.

Feb. 1st (10th day).—Still progressing favourably. Bladder again washed out; asks for more food. Temp. 98·6°.

2nd (11th day).—Slight amount of discharge on plugs this morning; catheter removed. Allowed to lie on her side. Temp. 98°.

3rd (12th day).—Complains of pain on micturition; there is a good deal of swelling and redness round urethral orifice. Temp. 98·8°.

4th (13th day).—This morning two of the ligatures on

the left side and one on the right came away with the plugs, and each included a small slough. To continue same diet and to have some linseed tea to drink. Temp. 98·4°.

5th (14th day).—Had no sedative last evening so did not have a good night; complains of some pain and tenderness in left lower abdomen. Bowels have not acted since the 27th ult., so ordered an enema of 14 oz. of olive oil. Pulse 120, resp. 26, temp. 98·8°.

Chart 2.

6th (15th day).—Had very good night; bowels were open. Temp. 99·4.

7th (16th day).—Improving; slept well; bowels acted copiously this morning; no pain whatever.

8th (17th day).—Allowed a little mutton, potatoes and vegetables for dinner.

9th (18th day).—Still progressing satisfactorily.

10th (19th day).—Was restless last night until an opium pill was given; to have a pill each night if necessary, not otherwise.

11th (20th day).—Bowels rather relaxed; another ligature came away this morning.

15th (24th day).—Remaining two ligatures came away; very slight vaginal discharge; one iodoform plug to be daily inserted; complains of pain over left ovary.

18th (27th day).—Pain and tenderness over left ovary gradually disappearing.

20th (29th day).—Convalescent, sits up in bed; takes her food well; has no pain or discomfort of any sort.

24th (33rd day).—To be dressed and lie on a sofa.

28th (37th day).—Vaginal examination with Sims's speculum shows a perfectly smooth and healthy arched cicatrix in the vaginal roof; the finger can detect no induration of any kind whatever.

March 1st (39th day).—Discharged, feeling perfectly well in every way.

18th (56th day).—Patient has attended weekly at the hospital and has gained flesh; to-day she woke up with pain and tenderness in left ovarian region with slight nausea; there is some fulness over the site of the pain and decided tenderness on pressure; bimanually the ovary is indistinctly felt.

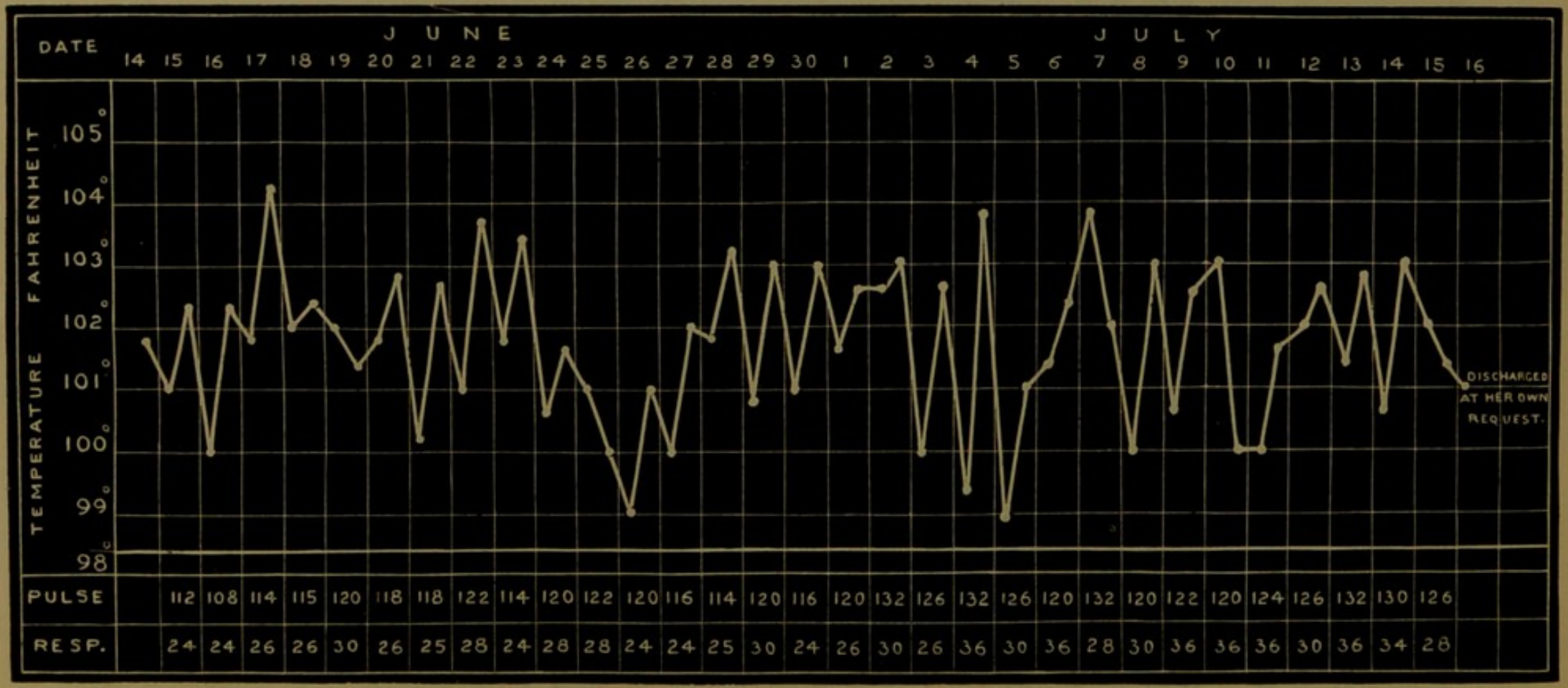
25th (63rd day).—The pain, which patient describes as being exactly similar to what she used to feel before her periods, has gradually disappeared.

April 18th.—A precisely similar attack to that experienced a month ago came on three days ago, is now subsiding.

May 29th (127th day).—Patient examined to-day; vagina feels perfectly healthy, the cicatrix has contracted, but there is no induration or tenderness around. Patient's general health is very good and she is getting stout.

June 14th.—Patient readmitted to the hospital, five months after the operation and three and a half months after her discharge (during my absence from town). Complaining from cough; pain in right side over lower ribs, with loss of appetite and weakness; has lately suffered from night sweats. On examining the lungs the breath-sounds over left apex are puerile; there is crepitation with dry rales to be heard scattered over both lungs in

Chart 3.


DATE
JUNE
JULY
14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
TEMPERATURE FAHRENHEIT
105°
104°
103°
102°
101°
100°
99°
98°
DISCHARGED AT HER OWN REQUEST.
PULSE
112 108 114 115 120 118 118 122 114 120 122 120 116 114 120 116 120 132 126 132 126 120 132 120 122 120 124 126 132 130 126
RESP.
24 24 26 26 30 26 25 28 24 28 28 24 24 25 30 24 26 30 26 36 30 36 28 30 36 36 36 30 36 34 28

front and behind; no marked dulness. Pulse 112, resp. 24, temp. 101·8°; ordered a saline expectorant mixture, Quiniæ Sulph. grs. iij ter die; beef tea and soda-water.

17th.—Continues to have high temperature, especially at night; looks flushed at night, very pale in day; cough better the last few days. There is no hæmoptysis nor any expectoration whatever. Chest signs the same. Has had some diarrhœa the last two days.

25th.—On my visit to-day I find the patient much altered in appearance from what she was when last I saw her a month ago, is very pale, decidedly emaciated, tongue red, dry, glazed with white aphthous patches; movement of chest walls impaired; scattered crepitation over lungs. On vaginal examination the cicatrix feels healthy, but above the vaginal roof there is a hard indurated mass the size of a small orange; pelvic glands distinctly enlarged. The patient's temperature since admission has been (as seen by Chart 3) very high, with marked intermissions. Neither quinine nor salicylate of soda have had any effect in reducing it. Ordered nourishing diet, stimulants, and a cough linctus.

July 1st.—Has had severe diarrhœa for several days, this is now controlled by sulphate of copper and opium pills, after starch and opium enemata and other astringents had been tried in vain.

7th.—Looks very cachectic; lips rather blue, skin very dry, tongue dry and glazed; cough better, no pain, appetite very bad.

15th.—Continues much the same; persistent high temperature; physical signs the same; begs to be allowed to go home, feeling sure she will get better there.

16th.—Discharged at her own request.

September 18th.—Has been visited at intervals by the resident medical officer, who found she remained much the same except that she got thinner; has been taking a cough linctus and a quinine mixture.

14th.—On calling to see the patient to-day I find her terribly emaciated, there is still crepitation with patches

of dulness over both lungs. She says for the last few days there has been a discharge of "blood and matter" per anum and per vaginam. On making an examination the pelvis is found to be filled by a mass of indurated growth, and in one place the vaginal roof is ulcerated, leading into a cavity with irregular walls.

November 1st.—Died.

Autopsy.—Body emaciated, rigor mortis well marked. Thorax: Right lung slightly adherent to parietes by a few old adhesions. On section it is somewhat œdematous, collapsed at base, otherwise normal. Left lung much more fixed by old and firm adhesions at upper part. On section appearances similar to those in right lung. Heart and pericardium normal. *Abdomen:* Liver large, pale, fatty. Spleen rather large and very soft. Kidneys normal. Pelvic cavity completely filled by a large mass of new growth, the centre of which had broken down into a cavity opening into vagina and discharging fetid *débris*. Bladder fixed to mass, but on section its inner surface was quite healthy. Ureters intact. Left ovary incorporated with growth, reduced in size to about one third, section firm and glistening. No trace of right ovary to be got anywhere.

Case 2. *Ulcerating epithelioma of cervix uteri; vaginal extirpation; death from shock twelve hours after operation.*—Mrs. P—, æt. 54, admitted into Royal Hospital for Women and Children on February 4th, 1884. Family history good.

Previous history.—Always had good health. Married thirty-two years, has had eight children, youngest fifteen years old; no miscarriages. Menopause ten years ago, quite well from then until eight months ago, when discharge of blood followed coitus; hæmorrhage recurred at intervals without any apparent cause; no offensive odour, no pain, but gradual emaciation. Patient had a severe loss of blood in Christmas week, so applied for relief at the out-patient department. My note then was:

"Thin, healthy-looking woman. Vaginal examination shows the os uteri to be nearly flush with the vaginal roof. It is seated in the middle of a shallow ulcer of about the size of a florin, with pinkish granulations which readily bleed; the margin of the ulcer is of a pinkish colour, slightly undermined and not indurated; the uterus on bimanual examination feels rather bulky and freely moveable; sound not passed."

Not feeling certain whether this was a case of malignant disease, or of the so-called "corroding ulcer of the os uteri," I determined to carefully watch its progress. The patient came weekly to my out-patients' department; the ulcer seemed to get gradually larger until February 2nd, when a profuse flooding took place *suâ sponte*, so she was admitted into the hospital. Liq. Ferri Perchlor. was applied to the ulceration, and an ergot and iron mixture given internally. No more hæmorrhage occurred; the vagina was daily syringed out with chloralum lotion.

The patient's general condition having improved, I proposed extirpation of the uterus, and both she and her husband agreed to its performance.

This was done on February 26th, the steps of the operation being precisely similar to those of the previous case, but when the uterus had been freed from the bladder in front, and an attempt made to drag it down with the clamp forceps, it was found that the disease had extended into the fundus, rendering it so friable that it tore into pieces when traction was made; this of course rendered the operation much more difficult and prolonged, and constant free oozing went on from the lacerated surfaces until the broad ligaments were tied; this was done as speedily as possible and the uterus removed. There was no further oozing, but the patient was collapsed, and, in fact, her pulse became very feeble from the moment the peritoneal cavity was opened. No drainage-tube was inserted into the vagina, which was freely dusted over with iodoform. Half an ounce of blood-stained urine was drawn off. Brandy and ether were administered hypo-

dermically, but the patient never rallied and death took place twelve hours later.

Autopsy.—Abdomen only examined. Slight extravasation of blood into the anterior abdominal wall; intestines in pelvic cavity injected and showing commencing peritonitis; uterus has been removed at its junction with the broad ligaments, on which are ligatures. Fallopian tubes, ovaries, and pelvic glands normal. On opening the bladder its mucous membrane was seen to be deeply injected, with extravasations of blood into its muscular coats. Ureters were intact.

Microscopical examination of the diseased uteri in both the cases recorded showed the characteristic structure of epithelioma.

Remarks.

A. *Comparison of methods of operating.*

Extirpation of the entire uterus through the abdominal wall was first recommended by Guthberlet in the year 1814, and Langenbeck operated unsuccessfully after this method eleven years later (1825). Von Sanuter removed a cancerous uterus per vaginam in 1822, as did also Blundell in 1828 and Recamier in 1829, both patients recovering. Although Delpech in 1830 recommended a combination of the abdominal and vaginal methods, the operation of total extirpation fell into disrepute until 1878, when it was revived by Freund, and since then it has been performed many times. The various methods of operating are, then:

(*a*) Abdominal.

(*b*) Vaginal.

(*c*) A combination of the two.

Practically we may ignore the third (which has seldom been done, although Corradi (1)* of Florence and others forcibly recommend it), and need only compare the abdominal and vaginal methods, each of which has certain advantages and disadvantages.

* The numbers apply to the list of references at the end of paper.

In the *abdominal* operation the uterus is easier of access, the vessels can be controlled better, the bladder and ureters more easily avoided, the uterus removed even where considerable adhesions exist, and the pelvic glands, if enlarged, can be (as Freund advises) removed, added to which, after the removal of the uterus the opening into the vagina can be carefully closed, the peritoneum thoroughly cleansed and maintained aseptic; but, on the other hand, by this method the peritoneum and intestines may be seriously injured and cooled by prolonged exposure, and if the patient be very stout the operation will be extremely difficult, and perhaps impossible.

In the *vaginal* operation the peritoneum and intestines are not exposed as in the other method, but its disadvantages are:

(*a*) The small space to work in.

(*b*) The great difficulty in securing vessels should there be bleeding.

(*c*) The great liability to injure the bladder and ureters.

(*d*) The impossibility of rendering the peritoneum and wound aseptic.

The essentials for the vaginal operation are that the passage be capacious, or at all events capable of dilatation, and that the uterus be freely moveable and not much enlarged; if it be already in a condition of retroflexion the operation is thereby rendered much easier.

With regard to the comparative difficulty of the two methods, that by the vagina is generally considered the more easy of performance; much, however, depends on the existent conditions in each individual case. In the two I have recorded the operation was rendered extremely difficult; in the first case, by the inability to thoroughly draw down the uterus (owing to the previous cellulitis), and in the second, by the friable condition of the uterine tissue.

Operators will, however, not be guided in their choice by a consideration of the difficulties to be encountered in either of the methods, but will undoubtedly choose that

which promises the greater probability of a favorable result to the patient. In order to decide this point I subjoin the following tables, which, I think, give a fairly complete list of all the operations performed by each method, either in this country or abroad, and I would express my thanks to numerous correspondents who have so kindly and promptly answered my inquiries.

Abdominal Extirpation.

References.	Operator.	No. of cases.	Recovered.	Died.
2	Ahlfeld	2	—	2
3	Alexander	1	—	1
5	d'Antona	1	—	1
9	Bantock (G.)	1	—	1
10	Bardenheur	12	9	3
8	Baum	4	2	2
2	Baumgartner	1	—	1
3	Billroth	8	3	5
11	Bottini	1	—	1
12	Brandel	1	1	—
2	Crede (B.)	2	—	2
13	Czerny	2	—	2
2	Delhaes	1	—	1
17	Emmett	1	—	1
2	Frankenhauser	1	—	1
2	Freund	14	5	9
2	Fritzch	1	—	1
43	Garden	1	—	1
18	Golding-Bird	1	—	1
19	Gonner	1	—	1
2	v. Grunewald	1	—	1
3	Gussenbauer	1	—	1
10	Hegar	2	—	2
20	Helmuth	1	—	1
61	Jackson	1	—	1
60	Janvrin	1	—	1
2	Jaquet	1	—	1
43	Keith	3	3	—
63	Kispert	1	—	1
62	Kleinwachter	1	—	1
34	Kocher	1	1	—
2	Kochs	2	1	1
64	Krabbel	1	—	1
65	Kuhn	2	1	1
67	Lane	1	1	—
66	Lange	1	1	—

References.	Operator.	No. of cases.	Recovered.	Died.
2	Langenbuch	1	—	1
2	Leopold	1	—	1
2	Lowenstein	2	—	2
49	Mac Cormac (Sir W.)	1	1	—
68	Marcacci	1	—	1
40	Martin (A.)	6	—	6
2	Martini	2	1	1
2	Massari	1	—	1
49	Morris (Henry)	2	—	2
2	Muller	2	—	2
2	Oelschlager	1	—	1
2	Olshausen	2	1	1
2	Pernice	1	—	1
69	Pietrizikowski	2	—	2
2	Reyher	1	—	1
70	Rubio (F.)	1	—	1
10	Rydygier	1	—	1
43	Savage	1	—	1
2	Schadel	1	—	1
2	Schede	2	—	2
3	Schramm	1	—	1
45	Schroeder	8	3	5
2	Shepherd-Haslewood	1	—	1
49	Smith (Heywood)	1	—	1
71	Solovieff	1	—	1
72	Spiegelberg	6	2	4
43	Tay (Waren)	1	—	1
9	Thornton (Knowsley)	1	—	1
2	Tillmans	1	—	1
2	Viet	1	1	—
73	Warren	1	—	1
74	Wells (Sir Spencer)	1	1	—
55	Willett	1	—	1
43	Williams (John)	1	—	1
75	Wylie	1	—	1
	Total	137	38	99

Vaginal Extirpation.

2	Ahlfeld	2	1	1
4	Anderson	1	1	—
9	Bantock (G.)	1	—	1
7	Bardenheur	1	—	1
8	Baum	4	2	2
6	Bernays	1	1	—
3	Billroth	12	8	4
14	Boekel (Jules)	1	1	—

References.	Operator.	No. of cases.	Recovered.	Died.
26	Bolling	1	1	—
11	Bompiani	1	—	1
11	Bottini	3	3	—
15	Breisky	1	1	—
16	Brunner	10	7	3
27	Bull	1	1	—
22	Burke	1	1	—
23	Calderini	1	—	1
24	Caselli	1	—	1
1	Cole (B.)	2	2	—
25	Cushing	1	1	—
13	Czerny	11	8	3
21	Demons	4	2	2
21	Dudon	2	1	1
—	Duncan (William)	2	1	1
49	Edis (A. W.)	1	—	1
58	Engstrom (O.)	2	1	1
28	Esmarch	2	1	1
25	Fenger	1	1	—
29	Foreman	1	1	—
30	Freund	2	1	1
31	Hahn	7	5	2
33	Helferich	1	1	—
43 and 79	Hofmeier	9	8	1
32	Howitz	2	2	—
10	Kaltenbach	1	1	—
37	Kehrer	1	—	1
48	Keith	1	1	—
34	Kocher	1	1	—
38	Kottman	1	1	—
35	Kraussold	2	2	—
36	Kufferath	1	1	—
39	Johannovsky	1	1	—
59	Mac Cormack	1	1	—
49	Malins	1	—	1
21	Mandrillon	1	1	—
40	Martin	60	47	13
41	Netzel	1	—	1
43	Ogston (A.)	2	1	1
42	Olshausen	25	18	7
49	Purcell	1	1	—
44	Sanger	2	1	1
44	Sanger (Leipzig)	2	2	—
44	Schatz	10	7	3
10	Schede	2	—	2
51	Schramm	3	3	—
45	Schroeder	27	19	8
46	Simpson (A. R.)	1	—	1
47	Solowiew	1	1	—
48	Starck	1	1	—
50	Stewart	1	1	—
25	Tarsini	1	1	—

References.	Operator.	No. of cases.	Recovered.	Died.
80	Tauffer	5	4	1
52	v. Teuffel	7	4	3
53	Thiersch	6	5	1
9	Thornton (Knowsley).....	1	—	1
54	Viet	2	2	—
56	Wallace (John)	3	2	1
55	Willett..... ..	1	—	1
43	Williams (John)	3	1	2
57	Zweifel	3	2	1
	Total	276	197	79

So that there were 137 cases of *abdominal* extirpation with 99 deaths (being a death-rate of 72 per cent.), whereas of 276 cases of *vaginal* extirpation there were 79 deaths (being a death-rate of 28·6 per cent.).

B. *Details of Vaginal Operation.*

If, then, it be decided to extirpate the entire uterus, it is evident from the foregoing statistics that (unless there be some special contra-indication) the vaginal method should be adopted, and after the manner which Schroeder advises. There are, however, some points on which I should like to make a few remarks :

(*a*) Instead of tying the broad ligaments on either side with silk, it has been proposed by Sir Spencer Wells(74) that long-handled pressure forceps should be placed on them, and, after the uterus is removed, allowed to remain on until all fear of bleeding be past ; by this means it is considered that there is less risk of septic infection, that the forceps help to bring the edges of the wound together and at the same time promote drainage. Now, whilst this plan may be advisable in some cases where (as in mine) there is great difficulty in passing ligatures, I think it is far safer to secure the ligaments as recommended by

Schroeder and to allow the ligatures to separate in the ordinary manner, for there can be no difficulty (as I found) in keeping them aseptic by means of iodoform, whilst the forceps, instead of bringing the edges together, would have a precisely opposite effect.

(*b*) With regard to the open wound left after removing the uterus, some operators stitch the edges together with a view to shut off, as far as possible, the peritoneal cavity, and to prevent prolapse of the intestines; and, in order to obviate the latter possible complication, Bardenheur (7) has even proposed the use of a network. But these are quite unnecessary and, to my mind, prejudicial, for what happens is this: "the bladder, even when empty, falls down on to the posterior vaginal wall and contracts adhesions with it, thus shutting off the peritoneal cavity." There is danger, whilst stitching, of including the ureters, and in support of this Schatz, of Rostock (44), mentions a very interesting case where the patient was seized with severe pain in the hypogastrium, became delirious, and died. At the post-mortem examination it was found that one ureter was pierced by a stitch, and there was an abscess in the psoas muscle on the corresponding side. He thinks death was due to iodoform poisoning, but on reading the case its gives one the impression of being more likely the result of uræmic toxæmia.

(*c*) The after-treatment is very important; it appears to me that it is both unnecessary and harmful either to pass a drainage-tube into Douglas's pouch or to plug the vagina, because by either of these means we separate the edges of the wound and prevent the bladder from falling down on to the posterior vaginal wall, added to which, a drainage-tube is apt to cause adhesions to the intestines. The drainage-tube used in my first case was double for the purpose of irrigation, but on very gently attempting this, with a warm Condy's solution, the patient suffered severe abdominal pain and became somewhat collapsed (after the use of only a couple of ounces of fluid), so that I did not dare to repeat it, and the tube

fell out on the fourth day. Professor Martin, of Berlin (43), tells me that he lost a patient from collapse after irrigation. If I were to again perform this operation my treatment would be somewhat as follows :—"Having removed the uterus, I should freely dust iodoform over the whole of the cut surfaces, the ends of the ligated broad ligaments and the long ligatures hanging from them; I should then place one iodoform plug just within the vulva and renew this twice daily after irrigating the vagina only with an antiseptic solution. I should keep the patient well propped up in bed, as by this means the pressure of the intestines on the bladder will help to keep the wound closed and also facilitate the escape of any exuded fluid into the vagina. For the first ten days, maintaining this posture and keeping the patient well under the influence of opium, seem to me to be points of great importance.

(*d*) In reference to my successful case, it was unfortunate that the patient developed an attack of cellulitis soon after being seen in the out-patient room, as before she was deemed in a fit condition for operation, not only had the disease made rapid strides, but also the broad ligaments were much shortened; on the other hand, the complete absence of pelvic inflammation subsequent to the operation, was very probably due, in great measure, to the altered condition of the peritoneum; for it is well known that this structure is much less prone to take on inflammatory action when it has previously been inflamed, than it is when in a virgin state. Respecting the woman's condition when readmitted (and during her stay in the hospital), the continued high temperature with the physical signs in the thorax, made one diagnose secondary infiltration of lungs with malignant disease; this, however, on post-mortem examination, proved not to be the case.

(*e*) With regard to the advisability of removing the Fallopian tubes and ovaries as well as the uterus, opinions are divided; some operators deeming it essential to do so, in order not only to make more secure against recurrence of the disease in them, but also to put a stop to the

monthly molimina, and to avoid the risk of peritonitis as a result of congestion of, or hæmorrhage from, the ovaries at periodical intervals ; whilst others consider that by this procedure more risk is run (owing to the shortness of the pedicle) of the ligatures slipping and causing fatal hæmorrhage. It appears to me that we must be guided by the facility or otherwise with which we can apply ligatures, for if we can safely remove the tubes and ovaries it is clearly better to do so, for the reasons just stated, and that the risk incurred from the recurring ovarian activity is not imaginary, is proved, I think, by my first case, for the patient suffered from three attacks of pain and tenderness over the left ovarian region, each attack corresponding to what should have been a menstrual period, so I concluded that she had hyperæmia of that ovary, resulting in ovulation, and possibly some extravasation of blood and localised peritonitis, which latter (seeing that there was no further recurrence) resulted in adhesions and probably cirrhosis of that ovary. But why, if this deduction holds ground, the right side was not affected either at the same time, or alternately with the left, I am at a loss to answer. At the post-mortem examination there was seen to be marked cirrhosis of the left ovary, but whether that was caused by the pressure of the new growth or previously it is impossible to say. It is remarkable that after a careful search no trace of the right ovary was found.

In Sir William Mac Cormac's patient a precisely similar thing occurred at a date corresponding with that in which (in the natural course of events) she should have been menstruating.

c. *Indications and contra-indications to the operation.*

The diseases for which it has been performed may be classed as follows.

I. *Non-Malignant*
1. Myo-fibromata.
2. Hæmorrhagic endometritis.
3. Prolapsus uteri.

II. *Malignant* . . { 4. Sarcoma. / 5. Carcinoma. { *a*. Scirrhus. / *b*. Encephaloid. / *c*. Epithelioma.

In none of the non-malignant affections can the operation (in my opinion) ever be justifiable.

(1) *Myo-fibromatous tumours* can be much more safely removed by the ordinary method of hysterectomy in which more or less of the cervix is left and the peritoneal cavity shut off altogether from the air. Keith (40), of Edinburgh, in three of his cases of hysterectomy for this disease found after removing the mass that he had placed the clamp on the top of the vagina *below* the cervix uteri, and thus performed extirpation of the entire uterus though not by the ordinary abdominal method; still I have added these cases to the list of abdominal extirpations.

(2) For *recurrent hæmorrhagic endometritis*, Prof. Martin removed the uterus per vaginam four times with one death, but I imagine few will feel inclined to follow his example by adopting such heroic treatment for this disease.

(3) For *prolapsus uteri* the same operator informs me that when all other means failed, he removed the entire uterus three times with no fatal result. Sanger, of Leipzig (44), records six cases, with two deaths, and Malins, of Birmingham, quite recently reported to this Society a fatal case. Now, the cases of prolapsus uteri must be very few indeed where we are unable to cure, or, at all events, greatly alleviate by one or other of the well-known plastic procedures, or by Alexander's operation on the round ligaments; but when such a case did occur, would it not be safer to push up the prolapsed organ, then open the abdomen and stitch the uterus to the abdominal wall, or perform hysterectomy as for myo-fibromata? At all events, it is certainly quite unjustifiable to entertain the idea of complete extirpation before, at least, all other means of cure have proved futile.

(4) *Sarcoma uteri* is a comparatively rare disease. According to Hart and Barbour (76) there are only about

seventy-five recorded cases. When diagnosed by the uterine enlargement, hæmorrhage, watery non-offensive discharge, and by microscopical examination of portions removed by the curette, the proper treatment is removal of the entire uterus, as its malignancy differs in no perceptible degree from that of carcinoma.

Martin tells me he has operated twice successfully.

(5) By far the greater number of extirpations of the entire uterus have been the subject of cancer. Now, cancer affects the uterus in various ways. Ruge and Veit (78) in their most valuable and exhaustive work on this subject ('Der Krebs der Gebärmutter') say that it commences in either of the following ways :

(*a*) Body of the uterus.
(*b*) Mucous membrane of cervical canal.
(*c*) Wall of the cervix proper.
(*d*) Portio vaginalis.

In each variety the disease spreads in a definite direction, and this (as we shall see presently) has a most important bearing on determining what operative procedure is best.

With regard to the comparative frequency of uterine cancer, Hofmeier, of Vienna (79), gives the following statistics : Of 26,200 women examined by Prof. Schroeder, 812, or 3 per cent., had cancer of the uterus; in 236 of these the *portio vaginalis* was attacked, in 181 the *mucous membrane of the cervical canal,* in 28 the *body of the uterus,* and in 367 the place of origin was *undetermined.*

It will be seen that none are given as originating in the wall of the cervix proper, and the reason of this is the great difficulty to diagnose it early, for the growth commences as tubercles in the substance of the neck, which either grow outwards on to the surface of the portio vaginalis, or inwards to the canal and then ulcerate. The subsequent progress is the same as that of the part (canal or vaginal portion) on which it first appears, so that, for operative purposes, we need only consider cancer

as it affects the body, mucous membrane of the cervix, or the portio vaginalis.

Cancer of the body of the uterus constitutes about 3½ per cent. of all the cases, and is, obviously, the most suitable kind for treatment by extirpation, as the disease may remain localised a long time in this organ with its thick walls; when, however, it has spread far over the cervix, or into the broad ligaments, then there is little chance of a lasting result from any operation; hence the great importance of making an early diagnosis from the pain, hæmorrhage, offensive discharge, and emaciation, but, above all, by the examination microscopically of small portions removed by the curette, the value of which, *in all cases of uterine disease,* I feel it impossible to overrate. But with regard to "cancer of the neck of the womb," the case is very different; the vast majority of women suffering from uterine cancer are (as seen from the foregoing statistics) attacked by the disease in this form. Now, these are the cases about the treatment of which there is such a divergence of opinion: shall we remove the whole organ, or shall we merely perform amputation of the cervix? We must, I think, answer this question somewhat as follows: "If we can promise our patient that, by removing the entire uterus, the danger of recurrence of the disease will be so very much less than after amputation of the cervix, that it more than counterbalances the far greater immediate risks incurred, then and then only are we justified in having recourse to it." Now, in order to determine whether we can give such a promise, we must first know in what direction the disease extends, and then compare the immediate and ultimate results after the two operations respectively. According to Ruge and Veit, *cancer of the portio vaginalis* has a very slight tendency indeed to spread into the cervix, but almost invariably spreads out *laterally* into the fornices of the vagina and the ligaments. What possible advantage then, I would ask, can be expected in these cases by removing the uterine body (which is unaffected) over that

gained by supra-vaginal amputation which gets rid (as far as the uterus is concerned) of the disease? On the other hand, *cancer of the mucous membrane of the cervical canal* spreads up along the canal and into the uterus, whilst it only at a late period (or even not at all) attacks the os uteri.

Now, with regard to the comparative death-rate we have seen that after vaginal extirpation it is 28 per cent.; whereas after supra-vaginal amputation of the cervix it is, according to Hofmeier, nearly 8 per cent.; and Pawlik (77) had a mortality of only $7\frac{1}{4}$ per cent. after amputation of the cervix with the galvano-cautery in 136 cases.

In respect of the *ultimate result*, it is, unfortunately, impossible to obtain it in all the successful cases of vaginal extirpation, because some patients do not take the trouble to report themselves afterwards, and others (when a recurrence takes place) seek advice elsewhere; however, through the kindness of Professor Martin, I am able to give the results of his operations. There were 60 cases of total extirpation, 38 of which were done for carcinoma; of these latter 27 recovered from the operation, but only 8 (or 30 per cent.) were free from recurrence one year after.

On the other hand, of Pawlik's 136 cases of amputation of the cancerous cervix 126 recovered from the operation and 33 (or over 26 per cent.) were free from recurrence after the same length of time, as may be seen from the following list:

1	was alive	19	years	after operation.
2	were „	12	„	„
3	„ „	8	„	„
3	„ „	7	„	„
3	„ „	5	„	„
2	„ „	4	„	„
5	„ „	3	„	„
7	„ „	2	„	„
7	„ „	1	„	„
33				

So that whilst extirpation was four times more fatal than amputation, the ultimate result was only slightly more favorable after the more dangerous operation (30 per cent. compared with 26¼ per cent.).

Hofmeier gives statistics of 12 cases of vaginal extirpation and 52 cases of vaginal and supra-vaginal amputation in which the *immediate* result of the latter was not quite so good, being three instead of four times less fatal; but the ultimate result was much better, seeing that the number of cases free from recurrence *two* years later was precisely alike after either operation (viz. 33 per cent.). But if such good results be obtained by performing supra-vaginal amputation of the cervix, may we not reasonably expect and hope to obtain much better results by applying either chloride of zinc paste or the thermo-cautery to the *stump?* Hofmeier gives particulars of 13 cases treated by amputation followed by the hot iron, of which only 7·7 per cent. died from the operation, and 42 per cent. were well and free from recurrence two years later.

Seeing then, what a comparatively safe operation supra-vaginal amputation of the cervix is, how often it is followed by long immunity from recurrence of the disease, and how impossible it is (even when the disease appears strictly limited to the cervix) to be certain that the parametrium or even the pelvic glands be not already implicated, is it not our bounden duty to discountenance extirpation of the entire uterus for carcinoma of the portio vaginalis? For my own part I shall never again perform the operation for malignant disease commencing in this part of the uterus. The advocates of extirpation liken the opposition to it to that with which ovariotomy was at first received, but the two operations are totally dissimilar; in ovariotomy the tumour is usually a benign one, the treatment by complete removal is in most cases the safest, and if the patient recover she has every prospect of living for many years, and even being able to procreate. Whereas, in extirpation of the uterus *for malignant disease* (the only condition, as I hope I have proved, for which it may even be con-

templated) this operation is in the majority of cases certainly not the safest, and the outlook after it, with respect to prolonging the patient's life and making it one of comfort and usefulness, is indeed dismal. Weighing all these facts, dispassionately and unbiassed, I would urge, in conclusion, the paramount importance in all cases of doubtful uterine disease, of making an early examination with the curette and microscope, and if cancer be detected in the body of the uterus or in the mucous membrane of the cervix then extirpation may be resorted to with a reasonable prospect of prolonging life, and as no other procedure is possible; but in *all cases* of cancer affecting the portio vaginalis, and *à fortiori* when there is the least implication of the vaginal walls, it appears to me to be an unjustifiable proceeding for us to subject our patients to the immense immediate risks which total ablation of the uterus entails, when we can positively gain quite as good ultimate results from an operation (*i. e.* supra-vaginal amputation) the *immediate* risks to life from which are four times less.

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