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OVARIAN TUMOR COMPLICATING PREGNANCY.



*Read before the State Medical Society by title*

BY

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THE field of ovarian disease has been so often gleaned that the hasty observer may deem it impossible to cull anything new therefrom. While I do not, in this paper, make any pretence to special originality, I hope to be able to present what experience teaches to be the most successful method of treating "Pregnancy complicated by Ovarian Tumor."

It may be questioned whether this complication is frequent enough to render the subject of sufficient importance to occupy the time of this scientific body. Its frequency may be appreciated when I am able, from a very cursory investigation of the literature, to present tables of over one hundred and fifty cases.

Ovarian disease does not preclude the possibility of conception so long as the ovaries contain healthy ovarian stroma.

In Spencer Wells's first one thousand cases of ovariectomy over two hundred children have since been born. A woman upon whom I did ovariectomy in the Philadelphia Hospital in 1879, whose second ovary contained so many cysts that its removal was debated, has been treated in the same institution for abortion. Schroeder, with the knife, and Pippingskoeld, with the galvanic cautery, have destroyed the cystic tissue of the second ovary, and the woman subsequently became pregnant. Indeed, rare instances have shown that the removal of the ovaries is not an absolute safeguard against conception. In such cases there are undoubtedly rudimentary masses of ovarian stroma or supplementary ovaries.

This probability of subsequent conception is a strong argument for the preservation of the second ovary during the period of sexual activity. Instead of complete extirpation, we should follow the course of Schroeder and Pippingskoeld.

The investigations of Jetter have shown that any form of ovarian cyst may complicate pregnancy. Of his collection of one hundred and sixty-six cases, ninety-seven were cystomata, thirty-seven dermoid, eleven carcinomata, and twenty-one uncertain. In a majority of the cases the tumor had existed for a length of time before pregnancy.

It is frequently asserted that owing to the pelvic hyperæmia consequent upon pregnancy the growth of these tumors is greatly accelerated. This growth, however, is probably more apparent than real. The great distention and distress are due to the natural growth of the tumor, plus the accompanying development of the uterus. Wernich not only accepts the accelerated growth as an established fact, but asserts that benign cysts, during pregnancy, are more likely to take on malignant action. Ruge explains the latter by claiming that the malignant element was originally present.

The dermoid cysts, from their smaller size, are most frequently found in the true pelvis.

The situation and size of the tumor are of marked significance in determining the prognosis. Of seventy-five cases, including those of Playfair, the tumor was found in the recto-vaginal septum in forty-one, on the right and left sides each five times. When small, the growths may frequently be overlooked, and the hinderance to delivery remain undiscovered or be ascribed to pelvic narrowing. Grigg's post-mortem researches in puerperal septicæmia render it probable that many cases of this disease are due to injury of unrecognized ovarian tumors during parturition.

The diagnosis of the coexistence of pregnancy and ovarian tumor is of the greatest importance, and oftentimes a difficult problem, but the limits of this paper will not permit of its discussion.

The mortality of ovarian tumor complicating pregnancy treated by the expectant plan is frightful. In the seventy-five cases culled from literature, thirty-one, or forty-one per cent., were fatal, while but twenty-two children, or twenty-nine per cent., are quoted as having been saved. The maternal mortality differs but little from that given by Litzman,—maternal, forty-three per cent. ; foetal, eighty-three per cent.

Such a death-rate urgently demands the investigation of other plans of treatment. When we come to the consideration of ovariectomy during pregnancy, we find far better results.

In the accompanying table of sixty-one



cases, but seven, or less than eleven per cent., were fatal; thirty-nine went to full term, or reached the period when the child became viable. The comparison of the results of ovariectomy (maternal mortality twelve per cent., foetal mortality thirty-five per cent.) with those of the expectant treatment (maternal mortality forty-three per cent., foetal mortality eighty-three per cent.) unquestionably demonstrates the value of the former. It is seen that the presence of pregnancy does not materially enhance the danger of ovariectomy. Further, it is rendered prominent that after performing ovariectomy the prognosis is extremely favorable for mother and child.

Finding that ovariectomy can give such good results, it remains then to be taken in consideration in each individual case.

The following points naturally present themselves for discussion:

1. Is ovariectomy the most secure and best proceeding for the removal of the complication?

2. Shall one in all cases do ovariectomy?

3. When is the most favorable time for its performance?

Those having large experience, as Spencer Wells, Tait, Cauchois, Olshausen, and the late Carl Schroeder, unite in commending ovariectomy as the most desirable proceeding. Most agree that it should be done at once in recognized ovarian tumor during pregnancy, on account of the danger of rupture of the cyst, twisting of the pedicle, exhaustion of the patient from the great abdominal distention, the possible complication of labor from the presence of the tumor, and the greatly increased mortality where ovariectomy is required during the period of puerperal convalescence. Its early performance is especially important when we take in consideration that Cohn has proved every sixth tumor to be probably malignant.

With the experience before us of the late Carl Schroeder, of fourteen cases and no deaths, Spencer Wells and Tait each eleven cases with one death each, the presence of pregnancy should hasten rather than retard the performance of ovariectomy.

The sixty-one cases of the accompanying table, with a mortality of eleven per cent., show that, while pregnancy does not improve the prognosis, it certainly does not make it worse.

Next to ovariectomy, tapping has always been more or less employed. Our first

table will show that it is just about as dangerous and as free from danger as ovariectomy, with the disadvantage that it is not a radical operation. It is still further unsatisfactory in that it increases the danger of subsequent ovariectomy, and that there is greater danger of wounding neighboring organs. Artificial labor is now but little performed, for the reasons that it does not preclude the necessity of ovariectomy and that it diminishes the chances of the foetus. Abortion and tapping do not preclude ovariectomy, but rather augment the necessity of its performance under unfavorable circumstances. If, then, in the complication of ovarian tumor with pregnancy, ovariectomy gives clearly better results than either the purely expectant treatment upon the one hand or tapping and abortion on the other, it is the most secure and best proceeding. But shall we do ovariectomy in all or only in isolated cases?

The answer to this question is the following: one must, in all cases in which ovarian tumor has been diagnosed, do ovariectomy, because—

1. Ovariectomy is unavoidable, and the prognosis is not made worse by the existence of pregnancy.

2. The labor and convalescence with the tumor offers a far more unfavorable prognosis than without it.

3. Many tumors are malignant, although we cannot certainly so diagnose them; and it is difficult to say how far the spreading of the malignant element is favored by pregnancy and the resorption in convalescence.

The most favorable period for operation, as recognized by all operators, is during the first half of the pregnancy. In the last months, the increased hyperæmia and engorgement of the broad ligaments render it less favorable. Then, too, there is more probability of the convalescence being complicated by premature labor. The experience of a number of operators, as quoted in the table, shows that the operation can be performed in advanced stages of pregnancy with good results. The case of Pippingskoeld, in which it was performed during labor, is eminently encouraging.

My own experience (limited to one case) has led me to question whether, in the last stages of pregnancy, it would not be better to follow the excision of the ovarian tumor

by removal of the contents of the uterus through Cæsarean section.

The history of the case to which I allude is as follows. April 4, 1886, I was called in consultation with Dr. George Mays, to see Mrs. N., aged 24 years. She had been married less than a year, and had ceased to menstruate August 15, 1885. The menstrual function had become established during her thirteenth year, and, while regular, had always been scanty. For the past year she had had considerable distress and sense of weight in the pelvis, with occasional attacks of difficult micturition amounting, at times, to retention. The sensation of weight was greatly increased after marriage, but very naturally was attributed to pregnancy. At the date mentioned she believed herself in labor. She was complaining of severe pain, and the doctor informed me that upon digital examination he could not find the os. He had also unsuccessfully attempted to catheterize her. Inspecting the abdomen, the uterus was seen distending it as high as the ensiform cartilage; below, reaching nearly to the umbilicus, was a second spherical tumor which fluctuated and was evidently the distended bladder. By the vagina was felt a moderately elastic mass, filling up the curvature of the sacrum and reaching to the symphysis in front. I first supposed it a case of pregnancy in marked ante-flexion of the uterus, in which we would find the os uteri situated high up; pushing the finger well up forward, I could reach the cervix just above and behind the symphysis. The os was undilated. The pressure of the cervix upon the neck of the bladder was the cause obstructing urination. By means of a male catheter nearly two quarts of urine were drawn off. The pelvis was filled up with a smooth round tumor which had pushed the bladder and uterus completely out of the pelvis. A rectal examination disclosed some projections from the cyst, showing that it was not a single cyst, although unmistakably of ovarian origin. Failing in the effort to push the tumor up while the patient was in the genu-pectoral posture, we were confronted by the necessity of relieving her of its presence to permit the expected delivery. She had now about reached the eighth month of pregnancy. Should we induce premature labor? This would not be possible unless the tumor was simultaneously reduced. Tapping was thought

unwise, for the reason that the majority of these intra-pelvic ovarian growths are either dermoid or multilocular cysts, with very viscid contents. Our examination had shown the growth to be multilocular. The escape of its contents into the pelvic cavity would insure the development of peritonitis, and this would be still further aggravated by the bruising of the sac in the passage of the fetus over it. Accordingly, it was thought better to do ovariectomy.

After thorough disinfection of the room, assisted by Drs. Mays, Warder, Eshleman, and West, the operation was performed, April 10, 1886. Beginning one inch below the umbilicus, an incision five inches long was made towards the symphysis. The left hand was passed between the left abdominal wall and uterus, behind and below the latter, until the cyst was reached. A small cyst projected above the pelvis and ruptured under the pressure of the hand. Dr. Mays introduced his hand into the vagina to facilitate the delivery of the larger cyst. It also ruptured under the pressure. The sac was raised up, and, having its origin on the right side, it was passed behind the uterus to the opposite side. Its pedicle was ligated with the Staffordshire knot, the tumor removed, the abdomen carefully cleansed, the wound closed with silk sutures. The wound was dressed with sublimated gauze and absorbent cotton. The operation was completed in forty minutes. The left ovary presented a cyst the size of an orange, but it was thought best not to remove it.

The night following the temperature was 102.2°, but soon subsided, not again reaching 102°, becoming normal on the fourth day. On the seventh day the sutures were removed and the dressing renewed. The central portion of the integument was ununited, the sutures having cut out. This was supported by adhesive plaster. A few hours later labor set in. This occurred during my absence. Dr. Mays, seeing serum oozing from the abdominal opening, applied the forceps and delivered a strong, healthy child. As the forceps were applied with the patient lying upon her back in the centre of the bed, the vulvar orifice was necessarily considerably lacerated. When I saw her about an hour after the labor, she was very much exhausted and had lost considerable blood. The second day following the temperature

began to rise, the lochia became offensive, the abdominal wound opened, and offensive serum was discharged. Intra-uterine injections were given, and the abdomen washed out with chlorinated soda and listerine, but despite all our measures the septic symptoms continued, and death occurred April 24, two weeks after the operation. It has since been a regret that while the abdomen was open I did not remove the contents of the uterus and

close the uterine wound with sutures, after Sanger's method. I am encouraged to believe such a course would have been successful from those cases of Wells and Byford in which the uterus was injured during ovariectomy and emptied of its contents. In Byford's case the pregnancy had reached the eighth month. My patient showed no septic symptoms until after the delivery, and by the course suggested this source of origin would have been avoided.

*Cases of Ovarian Tumor complicating Pregnancy Treated Expectantly.*

No.	Reference.	Position of Tumor in Pelvis.	Left to Natural Powers.	Punctured.	Embryotomy.	Pushed above Brim.	Turning.	Forceps.	Rupture of Uterus.	Results.		Remarks.
										Mother.	Child.	
1	Hewlett, Med.-Chir. Tr., vol. vi.	Recto-vag.pouch.	I	...	...	...	...	...	...	D.	D.	Tumor flattened by pressure; extensively adherent.
2	Merriman, Ibid., vol. iii.	"	...	I	...	...	...	...	...	D.	D.	
3	Ibid., vol. x.	"	...	I	...	...	...	...	...	R.	D.	Preceded by puncture.
4	"	"	...	...	I	...	...	...	...	R.	?	
5	"	"	...	...	I	...	...	...	...	R.	D.	
6	"	"	...	...	I	...	...	...	...	R.	D.	Preceded by puncture.
7	Parks, Ibid., vol. ii.	"	I	...	...	...	...	...	...	R.	A.	
8	"	"	...	I	...	...	...	...	...	R.	A.	Same patient as No. 7.
9	"	"	...	...	I	...	...	...	...	R.	A.	
10	"	"	...	...	I	...	...	...	...	R.	A.	
11	"	"	...	...	I	...	...	...	...	D.	?	} Ovarian origin somewhat doubtful.
12	"	"	...	...	I	...	...	...	...	D.	D.	
13	Lever, Guy's Hosp. Rep., 1842.	Left side of pelv.	...	...	I	...	...	...	...	R.	A.	
14	"	"	...	...	...	...	...	...	...	R.	A.	
15	"	Recto-vag.pouch.	...	...	...	...	...	...	...	D.	D.	Cyst ruptured spontaneously.
16	"	Left side of pelv.	I	...	...	...	...	...	...	R.	A.	
17	"	Recto-vag.	I	...	...	...	...	...	...	R.	A.	
18	Ingleby, Facts and Cases in Obst.	"	I	...	...	...	...	...	...	R.	?	
19	"	"	I	...	...	...	...	...	...	D.	?	
20	"	"	I	I	...	...	...	...	...	R.	D.	Embryotomy on account of child's death.
21	"	"	...	I	...	...	...	...	...	R.	A.	
22	Denman, vol. ii. p. 102.	"	...	...	I	...	...	...	...	D.	D.	
23	"	"	...	...	I	...	...	...	...	R.	A.	
24	"	"	...	...	I	...	...	...	...	R.	D.	
25	Jackson, Lond. Med. Rep., vol. ii.	"	...	...	I	...	...	...	...	R.	A.	
26	Behrend.	?	...	...	I	...	...	...	...	R.	A.	
27	Beclard, Bulletin Lond., No.	?	...	...	I	...	...	...	...	D.	D.	Puncture followed by version.
28	Meissner, Dict. de Med. et Chir.	?	...	...	...	...	...	...	...	R.	?	Cyst ruptured spontaneously.
29	"	?	...	...	I	...	...	...	...	D.	D.	Arm - presentation; spontaneous evolution.
30	Herbinaux, Sur les Accouch.Lab.	...	I	...	...	...	...	...	...	R.	?	
31	Baudelocque, Traite de l'Accouch.	Recto-vag.pouch.	...	...	I	...	...	...	...	D.	?	
32	Moreau, Nouveau J. de Med., 1820	Right side.	...	...	I	...	...	...	...	R.	A.	
33	Steir (Puchelt).	"	...	...	I	I	...	...	...	R.	D.	Perforation only on account of child's death.
34	Davis, Op. Midwif.	Recto-vag.	I	...	...	...	...	...	...	R.	A.	
35	Huper, Grafe, and Walter, Jour. de Chir.	"	...	...	...	I	...	...	...	D.	D.	
36	Shuzer (Puchelt).	Right side.	...	...	...	I	...	...	...	D.	D.	
37	J. G. Baker, Rev. Med., vol. vii.	Left side.	...	...	I	...	...	...	...	R.	D.	
38	La Chapelle.	?	...	...	I	...	...	...	...	D.	A.	
39	Greenhalgh, Guy's H. Rep., vol. i.	?	...	...	...	I	...	...	...	D.	D.	Cases 35 to 40, inclusive, were of malignant disease.
40	"	Posteriorly and laterally.	I	...	...	...	...	...	...	D.	D.	
41	"	Recto-vag. attached to bones.	...	...	...	...	...	...	...	D.	A.	Spontaneous premature labor. Caesarean section.
42	"	Recto-vag.	...	...	...	...	...	...	...	R.	A.	Premature labor induced.
43	La Chapelle.	"	I	...	I	...	...	...	...	R.	A.	" " spontaneous.
44	Perfect, vol. ii. p. 347.	"	...	...	...	...	...	...	...	D.	D.	
45	Lees, Clinical Midwif., Case 46.	"	...	...	...	...	...	...	...	R.	D.	
46	"	"	...	...	I	...	...	...	...	D.	D.	



Table of Cases in which Ovariectomy was Performed during Pregnancy.—Continued.

No.	Reference.	Operator.	Months Pregnant.	Result.	Remarks.
*8	Abdominal tumor.	Spencer Wells.	4	R.	Delivered of a living child at full term.
9	"	"	3	"	" " " " " "
10	"	"	3	"	" " " " " "
11	"	"	4	"	" at sixth month.
12	"	"	7	"	" next morning after operation.
13	"	"	5	D.	Previous rupture of cyst; peritonitis and moribund when operation done; delivery nine hours later; death fifth day.
14	"	"	4	R.	Delivered at full term.
15	"	"	7	"	Child born twenty-five days later.
16	"	"	4	"	" at full term.
17	"	"	3	"	Abortion six days later.
†18	"	"	4½	"	Uterus opened by mistake; contents removed.
19	Austral. Med. Gazette, 1883-4, iii. p. 169.	Fortescue.	4	"	Accidental puncture of uterus; Porro's operation.
20	Berl. K. Wochenschrift, 1876, p. 172.	W. Baum.	4½	"	Aborted two days later.
21	Am. Journ. Obstetrics, 1886, xix. p. 1272.	Mundé.	5	"	Uninterrupted pregnancy.
22	Ib., p. 525.	Thornton.	3	"	Both ovaries removed; delivered eighth month; healthy child.
23	Canada Lancet, 1886-7, xix. p. 161.	Gardner.	3	"	Delivered at full term; living child.
24	Centralbl. f. Gynäk., 1887, xi. p. 139.	Barony.	6	"	" twenty-one days later.
25	Medical Record, 1882, xxi. p. 22.	Bennett.	3	"	Abortion ten days later.
26	London Lancet, 1885, ii. p. 985.	Stony.	3	"	Delivery at full term.
27	Am. Journ. Obstetrics, 1880, xiii. p. 304.	Pippingskoeld.	8½	"	" seven hours after.
28	Trans. Am. Gyn. Soc., 1880, v. lxxxii. p. 100.	Wilson.	4	"	Continuation of pregnancy.
29	"	J. M. Sims.	4	"	Delivery at full term.
30	"	W. L. Atlee.	2	"	Died a month later from exhaustion.
31	"	"	?	"	Went to full term.
32	"	F. Bird.	?	"	Abortion two days later.
33	"	Gabahin.	6	"	Delivered at full term.
34	"	L. Tait.	7	D.	Labor sixth day after, and death in a few hours.
35	"	W. Baum.	6	"	Miscarriage day following; peritonitis resulted.
36	"	T. G. Thomas.	?	"	"
37	"	J. G. Kimball.	3	"	Peritonitis.
38	"	"	3	"	"
39	Am. Journ. Obstetrics, 1879, xiii. p. 31.	W. H. Byford.	7	R.	Pregnancy unsuspected; uterus punctured; contents removed.
40	Austral. Med. Gazette, February, 1875.	Thomas Hillas.	8	"	Uterus accidentally wounded; opened; contents removed; living child.
41	Unpublished.	Montgomery.	7½	D.	Premature labor seventh day, followed by septicæmia; death thirteenth day.
42	Stratz Zeitschr. f. Geb. u. Gynäk., 1887.	Schroeder.	4	R.	At full term; convalescence normal; child living.
43	"	"	3	"	" twins; child living.
44	"	"	8	"	" forceps delivery; child living.
45	"	"	3	"	" child living.
46	"	"	3	"	"
47	"	"	6	"	"
48	"	"	6	"	"
49	Unpublished private letter.	E. Y. Beall (Texas).	3	"	Operation May 12, 1887; course of gestation undisturbed.

\* Winckel (Parvin's edition) operated twice; both recovered; no miscarriage.

† Tait (Disease of the Ovaries, fourth edition, p. 293) reports ten additional cases; all recovered.



