are from scrapings removed from the uterus during life, and it is fortunate that these easily-obtained specimens give, in some cases at least, a result from which a diagnosis is possible.

The following points were characteristic in the case of Mrs. S.:

1. That the disease appeared in connection with pregnancy.
2. That the patient was a young woman.
3. That dangerous hæmorrhage was present; that it was intermittent, and occurred without warning after days of quiescence.
4. That nervous symptoms (lethargy and delirium) were present. In some recorded cases delirium has been a marked feature.
5. That metastatic new growths were found in the lungs and ovary.

I am greatly indebted to Mrs. Flemming, M.D., Pathologist to the New Hospital for Women, for the care with which she has conducted the pathological investigation.

REFERENCES.

The following is an incomplete list of references, but will probably suffice, as some of the articles mentioned contain more complete bibliographies: ¹ Gottschalk, *Arch. f. Gyn.*, vol. xlv, p. 1. ² Marchand, *Monats. f. Geb. u. Gyn.*, 1895. ³ Dr. J. Whitridge Williams (of Baltimore), *Trans. Amer. Gyn. Soc.*, 1895. ⁴ Communications from various authors in recent numbers of *American Journal of Obstetrics*. ⁵ Winter and Ruge, *Lehrbuch der gynäkologischen Diagnostik*, 1896.

A CASE OF SO-CALLED PROLAPSUS UTERI (CERVICAL HYPERTROPHY) IN A VIRGIN, TREATED SURGICALLY AFTER A NEW METHOD.

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THE questions of the causation and pathology of what is known as prolapsus uteri in virgins and nulliparous women have given rise to much discussion, and very opposite opinions are held by different writers. By some it is stated that enlargement of the cervix is always secondary to prolapse, while by others it is held that cervical hypertrophy may precede and cause prolapse. In all cases of prolapse of the uterus in multiparæ we find enlargement of the cervix, but not in all cases of hypertrophy of the cervix do we find descent of the uterus. In many cases of simple hypertrophy of the portio vaginalis, a condition by no means uncommon in nulliparæ, the fundus uteri is found in its normal position, that is, there has been no descent or prolapse of the uterus as a whole; in such cases, the hypertrophy takes place below the level of the attachments of the vagina to the uterus, and these attachments are not interfered with, so that uterus and vagina preserve their normal relations to the pelvis. In other cases, hypertrophy occurs in that part of the cervix which lies above the vaginal attachments, so that in the process of its growth the cervix pushes downwards the vaginal wall or walls and the vagina comes to hold an altered and abnormal relation to the pelvic structures while the uterine fundus may still be at its normal level. That this really does take place has been proved by the researches of Huguier.

Schroeder describes the cervix as consisting of three portions, in any one of which hypertrophy may occur. The vagina is attached to the cervix in front at a lower level than posteriorly, that part below the attachment of the anterior vaginal wall lies wholly free in the vagina (Fig. A 1.); the next or intermediate portion is free on its posterior aspect, bounded above by the attachment of the posterior vaginal wall, but in front it is attached by loose connective tissue to the bladder (Fig. A 2); the third or supravaginal portion lies wholly above the vagina (Fig. A 3).

When hypertrophy attacks the intermediate portion, the anterior vaginal wall alone is displaced downwards; when the supravaginal portion hypertrophies, both anterior and posterior vaginal walls are displaced, and, while the hypertrophy goes on, the position of the fundus is not necessarily at first affected; but at a later period, when the hypertrophy has

become considerable, especially if there is much hypertrophy of the vaginal portion, it seems to me hardly possible that the fundus can continue to maintain its normal level, that on the other hand there must necessarily be a certain degree of descent of the uterus as a whole for two reasons: (1) the weight of the enlarged cervix will drag the whole uterus downwards; (2) the presence of the hypertrophied cervix within the cavity of the vagina will set up contractions of the vaginal musculature, and these will bring about further descent of the uterus. While recognising that this descent does occur, it seems to me that it must be looked upon as secondary to the hypertrophy which is the preceding and leading cause of the descent.

This condition is illustrated in the following case:

A. B., aged 21, a short thick-set and squarely-built young woman, came to me at the Clinical Hospital because of a falling of the womb. Menstruation began at 17, was of the twenty-eight day type, lasting seven days but of small quantity; one year later, she began to be troubled with a sense of pelvic discomfort and bearing down, but menstruation was regular; leucorrhœa commenced and she had to pass water frequently, and her bowels were constipated. Some time later, but the patient does not exactly remember the time, she noticed something between the labia, but not till two and a half years ago did she tell her mother, who then found the "womb was outside."

In October, 1895, the condition was as follows: The cervix, much enlarged and thickened with a transverse diameter of $1\frac{1}{2}$ inch, is seen projecting about $\frac{3}{4}$ inch through the vulvar cleft. There is no prolapse of the lower part of the anterior or posterior vaginal wall. Both anterior and posterior fornices are persistent, but both anterior and posterior vaginal walls are shortened, the anterior measuring about $1\frac{1}{4}$ inch. On the anterior surface of the cervix $1\frac{1}{4}$ inch from the os externum is a prominence of the vaginal covering, and, on passing the bladder sound, this prominence is found to limit the attachment of bladder to cervix; the level of the anterior fornix is still $\frac{3}{4}$ inch higher. The exact measurement of the posterior wall was not taken, but the posterior fornix reached quite $\frac{1}{2}$ inch higher than the anterior. There was, moreover, a bulging of the vaginal covering on the posterior aspect of the cervix similar to that on the anterior aspect but there was no trace of rectocele or other deviation of the rectum from its normal position.

By bimanual examination, the fundus of the uterus is felt behind the pubic symphysis apparently a little lower than its normal level. The sound passes forward $4\frac{1}{2}$ inches. The cervix can be pushed back into the vagina and remains there so long as the patient is recumbent, but on getting up into the erect posture and straining or walking about, the cervix again appears through the vulvar opening.

An examination of the relations of the cervix to the vulvar outlet and the vaginal fornices shows that there is hypertrophy of the cervix in each of its three divisions: the vaginal portion is hypertrophied, from say $\frac{1}{2}$ inch, to $1\frac{1}{4}$ inch and the intermediate measures $1\frac{1}{4}$ inch; together these measure $2\frac{1}{2}$ inches, leaving above them an internal measurement by the sound of $2\frac{1}{4}$ inches ($4\frac{1}{2}$ minus $2\frac{1}{2}$); deducting from this the length of the normal uterine body, which averages in its internal measurement above $1\frac{1}{2}$ inch, we have left $\frac{1}{4}$ inch, which probably represents the hypertrophied supravaginal portion of the cervix.

With the patient lying in bed, the external os reaches just beyond the vulvar opening, and the fundus is felt at or about its normal level; taking $2\frac{1}{2}$ inches as the normal measurement of the anterior vaginal wall and $2\frac{1}{2}$ inches as the normal internal measurement of the uterus, of which $\frac{1}{2}$ inch projects into the vagina below the anterior fornix, we get a length of $4\frac{1}{2}$ inches—that is, the normal distance from vaginal aperture to inner surface of fundus uteri. In the present case the whole of this distance is occupied by the uterus and its cervix, when the patient is lying in bed, so that the fundus is lying at its normal level (Fig. B). When, however, the patient moves about in the erect posture the os externum projects $\frac{1}{2}$ inch or more through the vulvar opening; there is, therefore, a descent of the whole uterus—that is, there is a secondary prolapse, due to the weight of the hypertrophied cervix. (Fig. C.)

In this case, then, we have, I think, undoubted evidence

that prolapse of the uterus may occur secondarily to hypertrophy of the cervix, and independently of any preceding prolapse of the vaginal walls. The relations of the vaginal walls and fornices to the cervix show there has not been a prolapse of the uterus secondarily to prolapse of the vaginal walls, which have dragged upon the cervix and so produced a subsequent hypertrophy, but that there has been a primary hypertrophy of the cervix in all its parts, altering the relations of the vaginal fornices, together with subsequent or secondary prolapse from increase in weight of the whole organ. The microscopic changes I must leave to another occasion.

The treatment adopted was carried out with a twofold object.

1. Removal of the hypertrophic tissues—to reduce the uterus to its normal length.

2. Cutting off of the blood supply to the cervix to prevent recurrence of over-growth—that is, dissection of the broad ligaments and ligature of the uterine arteries.

It seemed to me that simple amputation of the cervix would not be sufficient: the tendency to over-growth would probably reassert itself, and to counteract this the best method would be to ligature and cut off the greater part of the blood supply of the cervical region.

I may shortly indicate the steps of the operation as follows:—

1. Circular incision of the vaginal covering of cervix at the level of the vesical attachment.

2. Prolongation of this incision along the lateral fornices.

3. Separation of cervix from its attachments in front and behind.

4. Dissection of broad ligaments and ligature of both uterine arteries and their cervical branches.

5. Drawing down of the cervix within the vaginal tube and its antero-posterior transfixion by silver wire.

6. Circular amputation of cervix.

7. Bilateral division of cervix.

8. Formation of anterior and posterior cervical flaps in front and behind.

9. Union of vaginal and cervical mucous membranes.

10. Apposition of lateral cut surfaces of cervix and vaginal covering.

The operation was a complete success, the cervix healing by first intention. The stitches were removed on the ninth day, and the patient went home on the twentieth day. Three weeks later I examined the patient again, and found the vaginal roof healthy, the cervical canal freely patent, and the fundus

uteri at its normal level. The sound passed forwards $2\frac{3}{4}$ inches. (This patient has since menstruated normally, the flow, which was unaccompanied by any pain, lasting four days.)

CASE OF HYDATIDIFORM DEGENERATION OF THE PLACENTA.

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On July 26th, 1896, I was called to see Mrs. T. B., aged 27, who had been married 5 years and had three children, the youngest born December 5th, 1895; she had to discontinue suckling this child when one week old, owing to deficiency of breast milk. She had had no miscarriages. She stated that she had been "flooding" for hours, and believed she was about ten weeks pregnant. The menses had returned about three months after the birth of the last child and had reappeared for one day only two months afterwards. Since then she had had about five slight "floodings" at varying intervals, the present one being the worst.

I found a large hard tumour in the centre and lower part of the abdomen, reaching to within an inch of the umbilicus. The cervix was thick and unyielding, its anterior lip being thickened and elongated. The os uteri was undilated, and there was no shortening of the cervix. Some recent blood was present in the vagina, but no clots. *Ballotement* was absent. The temperature and pulse were normal and her general condition good. I ordered her small doses of opium, and enjoined absolute rest in bed.

During the next fortnight she had three slight attacks of hæmorrhage, each at night time, but otherwise her condition continued fairly satisfactory. The uterus was now level with the umbilicus.

On August 9th she had another flooding and complained of "labour pains." The os was found sufficiently dilated to admit the point of the finger. I therefore decided to remove the contents of the uterus, which procedure was, however, rendered somewhat difficult, owing to some considerable anteversion, the great enlargement and elongation of the anterior lip of the cervix, and the neurotic temperament of the patient. On dilating sufficiently to admit two fingers no solid portions of a fetus could be made out, but a large number of broken down blood clots were removed. "Pains" came

on regularly, being assisted by a hypodermic injection of ergotinin. During the next three hours 24 ounces of clot came away, followed by a considerable quantity of small pieces of semi-fleshy *débris* which measured 20 ounces more. No fragments of bone, cartilage, skin, or foetal flesh came away. As there was evidently a mass of adherent material still remaining, I obtained the assistance of Dr. F. J. Newman, of Geelong, and under chloroform thoroughly dilated the cervix, and removed with fingers and curette the remaining contents of the uterus. These were extremely friable, and broke down under very slight pressure. The whole inner surface of the uterus was then thoroughly curetted, and afterwards irrigated with hot carbolised water. Iodised phenol was then injected by Baum's intrauterine syringe, and the uterus left well contracted.

The patient had a rigor immediately afterwards, but subsequently had a quiet night; she was then put on a mixture of quinine, ergot, and digitalis. The next morning her temperature being 103° F., and pulse 160, the uterus was again irrigated, and a small quantity of *débris* cleared away. The same evening her temperature was 100.6° F., and pulse 130. Next morning her temperature was normal, and pulse 100. Afterwards her recovery was uninter-

A.—Outline of normal uterus and vagina. (Half-size.) B.—Outline of uterus, etc., in present case showing position when patient has been for some time recumbent. C.—Ditto, when patient has been walking or straining. 11—Vaginal portion of cervix. 22—Intermediate portion. 33—Supravaginal portion.