herent uterus, with a small fibroid in the anterior wall just above the neck and between the uterus and bladder. Vaginal operation was advised, with the idea of removing the fibroid, freeing the uterus from its adhesions, and shortening the round ligaments to cure the retroversion. The attending surgeon, who is a surgeon of note, was desirous of doing the operation himself under my supervision. The operation was performed as described in the two previous cases, but the tumor was removed previous to delivering the fundus into the vagina, by lifting up the bladder on a strong retractor and dragging down the uterus with vulsellum forceps. The tumor was brought into full view and two smaller tumors were revealed, one at the side and the other a little higher on the anterior wall. The three neoplasms were removed in the usual way, the fundus was delivered into the vagina, and the round ligaments were shortened. The other steps in the completion of the operation were carried out as usual. There were no untoward symptoms in the patient's convalescence, and I am informed that she made a most satisfactory recovery.

It will be noticed that these cases followed the general rule that uteri presenting small fibroid tumors are usually found retroverted; there are exceptions, but I think the rule will hold. In this fact lies a suggestion bearing upon the origin of these neoplasms, viz., the interference of circulation and consequent nutrition subsequent to the displacement. The question at once arises: which is the cause and which the effect? Do the tumors produce the displacement or does the displacement afford occasion for the development of the tumors? I believe the latter is the case and that we must look to the interference in the circulation and the subsequent nutrition as the occasion for the development of these growths. Competent pathologists are of the opinion that these growths arise from a proliferation of the muscularis of the arterioles. This would indicate that their origin lies very close to interference with the circulation as a cause. The facility afforded by the vaginal method of approach for the cure of the retroversion is an additional factor in favor of it; for even if, as some claim, the presence of several small growths implies a multiplicity of foci, their development may be retarded by a restoration of normal circulation and metabolism by restoring the uterus to its normal position.

The superiority of the vaginal method over the abdominal in meeting this condition is the same as that which attaches to all vaginal work; the dangers are less, incomparably less; the convalescence is smoother and simpler, the patient being relieved of the annoyance of stitches, adhesive plaster, bandages and dressings; there is no visible scar to constantly remind her of her experiences, and above all there is no danger of hernia. The question arises: what shall be the upper limit to the size of fibroids that can be dealt with in this way? Experience and facility of operation on the part of the operator can alone determine this question, although the location of the tumor plays a large part in its solution. The traumatism, so far as the patient is concerned, is of so slight a character, that even if the effort in this direction must be abandoned and the abdominal incision made, very little detriment attaches to it, except the loss of time. After the incisions are made, opportunity is afforded to decide whether a myomectomy or a hysterectomy is indicated; if the latter, all the steps already taken are essential to the procedure and no time is lost.

During the past three months I have dealt with two private cases in this way, deciding upon vaginal hysterectomy after the tumors had been carefully located and

the impracticability of myomectomy ascertained. In both these cases the tumors weighed something over two pounds, and occupied so much of the fundus that it seemed impossible to enucleate them or morcellate them without destroying the openings of the Fallopian tubes. The desirability of retaining a reconstructed uterus of that character was not apparent and a hysterectomy was done in each case.

MYOFIBROMA UTERI.*

HERMANN J. BOLDT, M. D.

NEW YORK CITY.

The greater number of solid neoplasms of the uterus are fibromyomata; tumors, consisting of fibrous connective tissue only—fibroids—or of muscle only—myoma—are comparatively rare. It is the preponderance of one or the other of these tissues in a tumor on which the consistency depends, and to some extent the rapidity or slowness of its growth.

The original seat of such neoplasms is, strictly speaking, interstitial; that is, the growth takes its starting-point in the parenchyma of the uterus, and subsequently grows in the direction of least resistance; thus subserous and submucous fibromyomata are formed. Real subserous tumors are freely movable, unless they become incarcerated in the true pelvis. They rarely cause symptoms, except when they attain a large size, or become incarcerated or twisted.

Interstitial tumors are of two varieties: 1, the greatest number are encapsulated and may, therefore, be readily enucleated, if the capsule be incised; 2, those which are diffuse—adenomyomata—and blended with the uterine wall. There are instances of interstitial fibromyomata situated in the corpus, which produce torsion at the junction of the uterine body with the cervix, and an instance has been reported in which complete separation from the cervix took place.

Under the term of submucous fibromyomata only those should be classed which have been born or extruded almost completely into the uterine cavity. Those still remaining mostly within the uterine wall should be classed as mixed tumors—a combination of submucous and interstitial situations.

The histogenesis of fibromyomata is still a disputed point. My own studies would lead me to believe, with Rösger, that they arise from the muscularis of the capillaries. This, too, would explain why in the earliest stages, we never find mixed tumors; from a histologic standpoint they are invariably pure myomata; fibrous connective tissue is absent until the tumors have assumed a greater size—for instance, a diameter of .25 cm. Yet the careful researches of Virchow and Cordes must be given due consideration. According to these observers, they are due to swelling and proliferation of the uterine muscularis.

A variety of desmoid tumor which has given rise to much controversy is that containing glandular elements—the adenomyomata. It was von Recklinghausen¹ who shed true light on the origin of the epithelial elements contained in these growths. He ascribes their origin to the endometrium, or the Wolffian body. When the epithelial bands are derived from the endometrium they resemble in construction those found in the uterine cavity, and the tumor is located centrally to the uterine wall. If the exit of the glandular formation toward the uterine

*Presented to the Section on Obstetrics and Diseases of Women, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

1. Centralblatt f. Gyn., vol. xx, p. 507.

cavity becomes obliterated, cystic dilatation of the gland cavity is apt to result. From this variety of adenomyomata we can readily conceive the coexistence of carcinoma, and hence his researches are a valuable contribution to the etiology of uterine cancer. The greater number of adenomyomata, however, have their origin in the Wolffian body. The clinical peculiarity rests on their fusion with the parenchyma of the uterine wall. T. S. Cullen² describes three instances of these tumors, and from his examinations corroborates the conclusion of v. Recklinghausen. Ludwig Pick,³ in a very instructive research, shows that some of the neoplasms found and considered under the head of adenomyomata have their origin from the Müllerian ducts.

If a fibromyomatous uterus is examined, we find that its endometrium usually is thickened, except in rare instances of large interstitial tumors, when the opposite condition may exist, as the result of tension or stretching of the tumor on the endometrium. This change, of course, does not take place in pedunculated subserous neoplasms. The muscular wall of the uterus undergoes hyperplastic changes, the connective tissue and muscular cells being increased as the result of an irritative process. We likewise find various pathologic changes in the tubes and ovaries of fibromyomatous uteri. In the tubes the most frequent change is an endosalpingitis, but we also frequently see interstitial salpingitis, hydrosalpinx and pyosalpinx. Fabricius⁴ makes known the findings in two cases which are worthy of careful consideration. The ovaries have usually been found to be enlarged, due to an increase of the interstitial tissue, and in the size and number of the follicles. In a number of ovaries studied by the writer the vessels had undergone hyaline degeneration, and their lumina quite frequently were found to be constricted.

Various changes may take place in a fibromyoma. I recall two instances of large tumors which disappeared entirely without any treatment, before the menopause. Both women had complained of the weight caused by the size of the growths. When seen two or three years later respectively, no trace of the tumor was found upon examination. Another instance of a large tumor complicating pregnancy disappeared entirely within a year after parturition. A still more curious phenomenon was recently observed by the writer. A woman pregnant in the fourth month, who had a myofibroma which filled the true pelvis and which could not be dislodged at the time, was directed to go to term and then have extirpation performed. She had an uneventful delivery, with seemingly complete disappearance of the tumor previous to the termination of gestation.

Such atrophic changes are presumably due to changes in nutrition, inexplicable, however, in the last case cited. Calcareous degeneration, which may also be looked upon as a form of atrophy, is another favorable change which may occur. It is rare, but one instance of such complete transformation has been observed by the writer, accidentally discovered on autopsy.

Sarcomatous degeneration must be classed among the most serious changes which such neoplasms may undergo. The myofibromatous structure is transformed into sarcoma cells and then the growth is apt to progress quite rapidly. The sarcomatous change becomes diffuse by infecting the adjacent structure similarly. The malignant areas have this peculiarity, however: they fre-

quently perish early by necrobiosis so that one is not apt to find a large uterine tumor degenerated into a single sarcomatous mass.

According to Menge, in a discussion before the Obstetrical Society of Leipzig, Feb. 18, 1895, there is much danger of the walls of the lymphatics, in lymphangiectatic myomata, undergoing sarcomatous changes, and such tumors readily become myosarcomata. He presented two specimens to substantiate his belief. In the continued discussion, M. Säger expresses the belief that seeming fibromyomata which take on a rapid growth after the climacterium are probably all sarcomata. The presence in them of giant cells and myoblasts is positive proof of this. The long retention of the spindle shape of the cells in such changed tumors goes to show their origin from the former benign cell.

The change into carcinoma has been alluded to, and in some cases is based upon the proof adduced by v. Recklinghausen, which has previously been considered. In another way, carcinomatous changes in a myofibroma may take place from polypi, the mucosa of which has become carcinomatous, the malignant changes then invading the deeper structures of the myofibroma.

It would be of great value were it possible to diagnose the beginning of sarcomatous degeneration in a fibromyomatous tumor; unfortunately this can not be done; it may, however, be suspected, if a tumor which has been stationary for a long period without causing decided inconvenience to a patient suddenly begins to give rise to complex symptoms which can not be explained from the size or situation of the tumor. When such growth, therefore, begins to cause pains, a feeling of malaise, etc., associated, perhaps, with an increase in size, we should consider it a practical hint and strongly advise its removal, because of the probability that degenerative changes of a malignant character are in progress. A change in the symptomatic condition of such a patient should always be noted with suspicion, not only on account of possible degenerative changes, but also on account of other serious changes which may take place in the neoplasm, such as inflammation, gangrene and supuration, myxomatous and cystic degeneration, in any of which conditions, delay in operation is serious. There is, however, a physiologic condition, in which the sudden appearance of such symptoms as have been alluded to are apt to take place; I refer to pregnancy. The physician must be on the alert for such complications and endeavor not to commit an error in the diagnosis.

Taking for granted that the diagnosis of a fibromyomatous tumor of the uterus has been made, the question of treatment naturally arises. One must come to the conclusion, if a close observer, that the pendulum has made a swing toward quick and radical treatment. In fact, this tendency has gone even further with many, during the past few years, than the prognosis of the condition warrants. It is true that fibromyomata are not so benign as they were once thought to be, but it is also true that they are not as dangerous as some would have us believe in their writings and discussions. Many such tumors have been observed by the writer, for a goodly number of years, without a justifiable indication for operation, having in his opinion, become manifest. Others again were observed, in which an indication was considered present—mainly severe menorrhagia and metrorrhagia, yet the patients declined operation, and they seemingly got along fairly well on palliative treatment; in fact, with but few exceptions, the symptoms decidedly improved, and in some the size of the tumors diminished.

The reason for such radical change in treatment may

2. Johns Hopkins Hospital Reports, 1896.

3. Archiv f. Gynæk. vol. ix, p. 176, etc., ueber die epithel. Keime der Adenomyome.

4. Ueber Cysten und der Tube, am Uterus und dessen Umgebung. Archiv f. Gyn. vol. i, p. 383-402.

be found in the greatly improved prognosis which operation gives. Abdominal hysterectomy, in the hands of one who is a master of the technique, should not give a greater mortality than simple ovariectomy. At least, such has been my experience during the past few years, with by no means a moderate number, and these not all simple cases. Yet the unexpected sometimes happens, and, therefore, we should not indiscriminately advise radical operation for fibromyomata, not only for fear of the mortality—this being a minor consideration in view of the direct results obtained by an accomplished operator—but on account of the subsequent changes produced in a woman deprived of her pelvic organs during the period of active physiologic activity.

If by any measure adopted, we can produce a symptomatic cure, it should be done in preference to a radical operation. It must not be forgotten, however, that there are instances, although comparatively rare, in which nothing but undelayed operation should be advised; they have been mentioned among the degenerations of serious character.

The social position which a patient occupies must be considered first and foremost. This is obvious, because a woman of the laboring class can not observe the rules which are laid down for those in better circumstances, in regard to rest, diet and hygiene. Internal medication is variable. No specific has been discovered to check the size of the growth, or diminish it; to stop profuse bleeding or the pain sometimes associated with the neoplasm.

I have watched a number of patients who were placed on thyroid extract and mammary extract, the latter so strongly recommended by Shober and Polk in this country, and by Bell in England. I have seen three instances of undoubted improvement in every respect, even a slight diminution of the tumor. All of the patients alluded to have used the remedy one year or longer, but so far as the size of the tumor is concerned, it is doubtful if any permanent diminution has taken place; we know that the tumors change in size with the menstrual period, and also that the amount of adipose tissue in the abdominal walls, during the use of these remedies, diminishes in many instances, so that the medicaments are at best rather uncertain; absolute measurements are impossible in any case.

Among remedies for local use which I consider palliative, electricity has held a prominent position. I say held, because the enthusiasm with which it was accepted has died out, and among its former strong advocates equally firm condemnation is heard. Its indiscriminate use is justly condemned. When first introduced according to the technique devised and advised by Apostoli, nearly every woman who had a fibromyoma, or was thought to have one, was subjected to a course of galvanism, and hence the remedy, which was intended to be of benefit, did more harm than good. The matter stands thus, in my opinion: There is a limited field for its use, but only for palliative treatment. Not a single instance of disappearance of the growth has been observed, but some tumors have seemingly diminished in size. This treatment is indicated only in interstitial growths of moderate size, up to or below the umbilicus, when there is no other serious lesion in the pelvis—as pyosalpinx, for instance—and when the patient can bear it without causing subsequent distress, such as increased pelvic pain or neurasthenia.

From this it is apparent how exceedingly small the field is when the use of electricity may be expected to prove beneficial to the patient. In the class of cases

just mentioned as suited for electrical treatment, the bleeding, though previously profuse, becomes lessened and the pain associated therewith diminished greatly; in some instances it entirely disappears, so that in this class, but only in such cases, symptomatic cure can frequently be established. Treatment should not be continued if evidence of pelvic inflammation follows its use, or if subsequent to or during the treatment much pain is experienced in application of a moderately strong current—50 to 100 milliamperes.

The use of the curette has been abandoned almost entirely by the writer for the purpose of stopping the bleeding due to the accompanying hyperplasia of the endometrium. Two instances of tumors causing profuse menorrhagia and metrorrhagia in women, aged 42 and 45 years respectively, who declined long treatment as well as a radical operation, were cured of their bleeding by the use of the galvanocautery. The cervix was thoroughly dilated, and the dome-shaped electrode of Byrne was rapidly carried through the canal. The interior was thoroughly charred, as in malignant disease, but the process was not carried to such depth. It is now six and eight months, respectively, since this was done, and both patients report themselves cured.

Various other forms of local treatment to stop the bleeding have been used with variable success; as local applications of ferripyrine; liq. ferri sesquichlorati; zinc chlorid and iodine.

Some years ago, I was, with others, favorably impressed with an operative palliative treatment, consisting in ligation of the uterine arteries. Unfortunately, the continued observation of the patients thus treated showed that the method did not bear the test of time; it has, therefore, been abandoned.

ARRHYTHMIA CORDIS COMPLICATING FIBROMATA UTERI.*

J. WESLEY BOVÉE, M.D.

Clinical Professor of Gynecology, Columbian University; Fellow American Gynecological Society, Etc.
WASHINGTON, D.C.

The study of the life history of uterine fibromata, with their multiplicity of combinations, has been patient, persevering and full of vexations. At first, considered perfectly benign, we have come to recognize the probability of their producing great harm and even of taking on malignant degeneration.

Their complications are becoming constantly more numerous. Sorel¹ has found they have a close relation to glycosuria. He demonstrated this relation in some marked cases of glycosuria, extending over a period of years, complicated by uterine fibroids, and in which a quick and decisive cure of the pathologic discharge of sugar followed hysterectomy.

What etiological relation, if any, exists between arteriosclerosis and uterine fibroids is still a matter of conjecture. La Force² considers it a potent cause of fibroids of this organ, and many believe a condition of arteriosclerosis is usually present in most cases of these growths. It would seem but rational to find such condition present, but thus far I am not aware of its positive demonstration in any instance, except in advanced life. Certain conditions of the nervous system in the formative stage of fibroids have been noticed. Insomnia, headache and hyperesthesia of the sensory organs are present in a marked degree, according to Grace P. Mur-

*Presented to the Section on Obstetrics and Diseases of Women, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.