# FIBROID TUMOURS OF THE UTERUS: A RETROSPECT.

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Fibroid Tumours may be best defined as being of the same structure as the Uterus: fibrous; and have been variously named Myoma, Fibro-Leio-Myoma (English Fibroid) and Hysteroma. (P. Broca.)

They are always benign, and as a general rule, do little harm, though occasionally they prove fatal.

Hystogeny. Velpau said: "That they arose from the formation of a blood clot in the uterine tissue."

Klebs: "That they are due to a proliferation of connective tissue in the muscular layers of certain vessels, different nodules thus formed, uniting to form one tumour."

Kleinwächter on the other hand asserts: "That they are due to a round cell found along the capillaries, which causes a partial obliteration of them. These cells get uniform, and produce nodules, which gradually become agglutinated."

In my experience in women suffering from fibroids the paretic nerves, when excited, increase the blood pressure In menstrual life, the uterus is already engorged, and during this period, there must be additional engorgement; and just as the uterus enlarges symmetrically in pregnancy, may it not be that the whole nourishment from this "Abnormal" engorgement expends itself on one portion of the uterus, and so produces in time

a localized thickness, which gradually increases until it rises above the level of the uterine tissue, and finally forms a nodule of fibrous tissue. I would also further venture to say, that it is in these cases that we find the multiple fibroma, and oftener in the body of the uterus than in the cervix, and which, as a rule, give little trouble.

Bayle "1813" on this point says: "That one-fifth of all women above thirty five years of age have fibromata, the size of which varies from a small nodule to one having a weight of 135 lbs."

Hunter of New York records one of 140 lbs.

Almost every author has his own classification of fibroids, although the most commonly accepted is the division into Interstitial, Submucous and Sub-Peritoneal.

Tait on the other hand, says; "This classification ought to be done away with; because fibroma often pass from the uterine tissue into the substance of the broad ligament."

But whatever may be the seat of these tumours, they always set up a certain amount of Hypertrophy, notably round the walls of the tumour, and by means of which it forms a distinct capsule round the whole tumour, and may even, as has been said, pass into the broad ligament accompanied by a large vascular supply. This increase in size might be compared to what takes place

in the first month after fecundation, to which the name Fibrous pregnancy "Grossesse Fibreuse" has been given by Guyon. Some writers say: "That small fibroma can produce this condition; the cavity of the uterus being increased both by the weight of the tumour and the eccentric hypertrophy". In fibroids the muscular fibre, and connective tissue is most abundant in the Capsule, where also the vascularity is large, and which, running into the interior of the tumour increases in proportion to the size of the tumour. Thus, true fibroids differ from Myoma in which the vessels are not only large and numerous in the pedicle, but get tortuous all through the tumour. The development in Myoma is more even, and is thus similar to the pregnant uterus.

Symptoms. May be conveniently described as of two kinds - "Rational and Physical".

Rational. Haemorrhage is the chief symptom in most cases, and occurs in the form of Mennorrhagia, or Metrorrhagia due to the Metritis, which accompanies the tumour. If this Metritis be glandular as well, we have always excessive Leucorrhoea. The nearer the tumour is to the cavity of the uterus, the readier are we to have haemorrhage, which rarely, however, causes death. The late Matthews Duncan, however, has reported one such case. Sometimes the Leucorrhoea becomes changed and a Hydro-

rrhoea forms, which is easily distinguished from Cancer in having no odour and being intermittent.

Pain. This symptom varies very much, Reflex Neuralgia causing dragging pains in the Lumber region, and Abdomen which are also common in other uterine complaints.

If the tumour be invading the uterine cavity, we may be able to detect uterine contraction at the time of bleeding.

Kydd says: "That they sometimes press upon the Sacral nerves, and cause Sciatic pains, which are worse at the Menstrual periods".

Jude Hue had one such case, and on applying an Air Pessary Sciatica disappeared.

"Vesical Compression". West found Dysuria in thirty-five cases out of eighty-six; but Gallard did not regard this as simply mechanical, though he gave no explanation. "May it not just possibly be due to irritation at the neck of the bladder; sympathetically from the uterus".

Budin says: "If compression be great at the neck, vesical distension may be so great that it may simulate an Ovarian cyst."

Compression of the Rectum may cause dyspeptic symptoms, Haemorrhoids and constipation.

Barnes says: "That absorption from the constipated matter gives rise to what he terms a "Copraemia" which is a true "Toxaemia".

Later research on this point lend great weight to his opinion, which like all other great improvements in this field was treated at first with scant courtesy.

Jude Hue and Dolbeau say: "That fibroids situated in the lesser pelvis may cause internal strangulation and death".

Murphy first described ureter and renal troubles arising from fibroids, and in all probability this is the secret of a greater number of deaths after Hysterectomy than from the operation.

Skene of Brooklyn, whom I have witnessed operating, saw three such cases.

Wallis reports a similar case: "The woman, who was 40 years of age, complained of dorsal pain. At the Autopsy the Ureters were found thickened and dilated, while, on the other hand, Albuminuria and Uraemia had disappeared after removal of the tumour".

As is well known, these tumours cause an increase of blood pressure, which, if continued, often give rise to heart affection, nay more, fatty degeneration is very common." "Hoffnuêr, Fehling, Fenwicke, etc."

Sometimes as a result a distinct murmur is detected by means of the stethescope from which we should conclude that immediately on the recognition of a tumour an operation, if patient's condition admits, should take place; for if this is not done, and it is allowed to go on, it is not only more dangerous to the patient; but

also adds greatly to the "prognosis".

By local examination, we find the most constant sign to be an increase in the size of the uterine cavity. This is easily determined by means of the sound, which, unless used with great care, may prove a source of danger.

Tait says with regard to the sound "It is a useful instrument; but at the same time, a dangerous one, and further on he adds that he often wishes it had never been invented."

Although one would hardly think of corroborating the last portion of the above; yet it cannot be denied that in some cases, it is a dangerous instrument.

Sometime ago I had occasion to use a sound for diagnostic purposes, and found the cavity of the uterus so enlarged, that when gently pushing in the instrument, I found that it would have disappeared. I withdrew it, and tried a second time with a like result. Of course the patient, being under chloroform, was insensible to pain. The question I then asked myself, was,"Surely this is an enormous cavity?" Yes it was enormous in a way; but it was due to a Metro-Peritoneal fistula being formed, the Sound having penetrated the thin uterine wall at the fundus. The diagnosis of Metro-Peritoneal fistula was doubted by one of the attending physicians when to prove the correctness of my diagnosis, I, three

days after, again passed the Sound, and had some little difficulty in getting it in further than three and a half inches; but after a little manipulation against the fundus it passed completely up to the hilt. On this occasion the patient was not under the influence of chloroform, and felt nothing beyond that uneasiness which would be found in any ordinary case of passing the Sound. I was now, as at first, clearly convinced that there was a Metro-Pritoneal fistula. What troubled me was. Would the patient develope peritonitis and probably die? To my great relief, no peritonitis set in, and the patient never exhibited one bad symptom as the result. I have now met with such an occurrence twice, and am quite convinced that it must have happened with others; - and further, that if the Sound is aseptic, no harm will follow.

On looking over the literature on this point, I find the late Sir J. Y. Simpson recording one such case in Edinburgh Royal Infirmary.

Examination of the tumour should also be made bi-manually aided by rectal touch. This is best done under an anaesthetic; and if possible, always after a bleeding; because the size of the cavity then varies according to the amount of blood lost.

Diagnosis. Ovarian cysts are the most difficult from which to differentiate fibromata.

Fluctuation is pathognomonic of an Ovarian cyst; but it must be recollected that if it be in advanced life, we are apt to meet with the Aedematous fibroid, which might lead one astray. In such a case an Anaesthetic would greatly assist one in determining the hard and soft parts of the latter.

Fibroma develope slowly, Ovarian cysts rapidly.

Thornton has, however, shown a certain pedicled fibroid which is so rapid in its progress that confusion is easy. Hence he says, "When we operate for an Ovariotomy, we should be prepared to do a Hysterectomy".

Exploratory puncture formerly used is dangerous.

Floating kidney is easily diagnosed by their absence from the uterus.

Cancer of the Peritoneum and Omentum might be mistaken for fibroma, if attached to the uterus; but ascitic fluid, situation, cancerus cachexia and uterus being free as evidenced by sound and fingers are sufficient to distinguish the two diseases from each other. When fibroids get intra-ligamentous, it is exceedingly difficult to distinguish them from Parovarian cysts.

The Submucous variety is easily diagnosed; the haemorrhage in this variety being generally free.

The Interstitial variety is difficult; because there is generally a small fibroid with a general enlargement of the uterus, which is often mistaken for cancer.

To obviate this difficulty, it is best to dilate the Os and Currette and place some of the scrapings under the microscope, when, if it is cancer, we shall see new cell formation; if a fibroid, Hypertrpphic Endomtritis Hysterical manifestations are common to this variety, and even expulsive pains.

Subserous, if projecting into the peritoneal cavity, are easily felt by bi-manual examination and rectal touch, if other conditions be excluded. If sessile,&on the anterior surface, they may grow and displace the bladder; the uterus then gets retroflexed, and a Sulcus may be determined, although this is not always so.

Pozzie records a rare accident which was first mentioned by Dull;- "Separation of the Linea Alba, and consequent eventration with the formation of a hernial sack in which the fibroma became lodged."

Prognosis A great many cases present nothing during life, others again are more serious until the Menopause after which they slowly atrophy and disappear. This is the general statement in text-books, and as my Thesis is based on this point, I shall endeavor to show, further on, that it is not always correct. Occasionally the capsule ruptures, contractions set in and expulsion takes place, as in the well-known case of "Mundé" which was a submucous one. Gangreene sometimes attacks them when portions may escape without affecting the

patient. Perforation of the bladder and rectum and even abdominal walls (Guyon) and strange to say, when it is the latter, it often ends in a recovery (Guyon). Death is generally due to exhaustion following hemorrhage and recurrent attacks of peritonitis.

Dohrn saw one case where death was due to an Embolism which is often favoured by repeated exploratory puncture.

Treatment may be divided into Medical and Surgical; and as my essay has reference to the latter only, I shall pass on to it at once.

Surgical. Surgeons, as a rule, only get such cases as the result of necessity, i.e.: because palliation has failed, or because there social conditions demand that they cannot afford to lie in bed and to undergo months of treatment. Occasionally, however, the physician from the nature of the tumour, sends at once for a surgeon, as, from former experience, he knows, that medical treatment would only be a waste of time. The operation of Hysterectomy has always been looked upon as a most serious operation; as, until lately, the mortality has been very high. This, however, was, in my opinion, not due to want of knowledge on the part of the operators; but rather to delay in operating, which was chiefly caused by the wrong idea which prevailed, and which, unfortunately, still prevails, that such tumours are quite harmless, and that no bad effects

result, if the patients are safely tided over the Menopause. While this may be so in some cases, experience proves that it is not always so; as, not only is the Meno-pause delayed by their presence, but also that they continue to grow, and even to undergo malignant degeneration after that period.

"Leopold draws attention to another danger, which is muscular degeneration of the heart due to long-continued Haemorrhage". It is such cases as these which generally prove fatal. I witnessed one such case last summer The tumour was an exceedingly large one, with adhesions all through the pelvis. The operation took a long time (nearly two hours) from the beginning of chloroform till the patient was put to bed. Now, I do not consider it fair to place the death in such a case to the credit of the surgeon; for I am perfectly certain that, if the woman had been operated on a year sooner, she would, in all probability, have recovered.

Operations practised for radical cure are shortly:-

I. Vaginal Hysterectomy.

II. Removal of appendages (Tait)

III. Abdominal section & Enucleation (Martin)

IV. Supra-pubic Hysterectomy, done by Sanger & others.

The question now naturally arises: When is the Vaginal and when the Abdominal method to be preferred? In some cases it is not difficult to decide, while in others

it is extremely so. I have watched various operators and am quite convinced that it is entirely wrong to attempt vaginal operations on tumours in the body of the uterus.

Hysterectomy, or the operation for the removal of fibromata through the abdominal walls, as is well-known, arose as the result of a wrong diagnosis.

Lizars. (1825) closed up the abdomen for an ovariotomy. Duffenback (1826) Altee and E. Brown we find doing the same; fourteen such cases being recorded with five deaths.

In 1837, Granville ventured on a Subserous extirpation; but his patient died. Then followed Altee and Lane, whose cases both recovered.

Partial extirpation was first successfully done by Clay in 1843; while Kimball was the first to operate for Interstitial fibroid, which was causing violent haemorrhage; his patient recovering. Then followed Köeberlé whose report to the professional world caused Hysterectomy to be a recognised operation.

In 1866 Caternault, Koeberlé's pupil published a series of forty two cases of amputation of uterus.

After this Pean of Paris was very successful, and laid the foundation of the Extra-peritoneal method.

In this country, the name of Keith will be ever remembered in connection with Hysterectomy.

Martin and others follow with the intra- peritoneal method, and it is in this form that I wish to make a few remarks on what I think is something new. We are told and taught by our seniors that the great secret of success in Abdominal Hysterectomy depends very much on the treatment of the peritoneum.

"Schroeder" with his great acuteness, devised and laid special stress on the end of the stump being carefully covered in with the peritoneum by means of stitches. Now, I do not think such stitching necessary; for if the ligatures be passed throughthe broad ligament, and separated from the uterus, Fallopian tube and Ovary, on both sides without constricting the uterine tissue; and constricting then the uterine arteries, when cervix is cut through and dropped, it is nearly all covered with peritoneum, as if it were sown up with ligatures directly. This absence of constriction is of great benefit, as it is dreaded by surgeons, and often causes them to take to the extra-peritoneal method. I do not think it wise, in such cases of Hysterectomy, not to leave a pice of the cervix, and for this reason. If the whole uterus be removed, the vaginal walls in the course of time lose their natural form and shape and the upper portion becomes more relaxed. Some surgeons object to leaving a portion of the cervix in doing a Hysterectomy,with the idea that it will in time become malignant. Well, perhaps it might; but I have yet to

see it, and I have watched such cases, both in France and America, as well as operations at home, and I have never yet met one who has seen it, unless there had been cancer in the fundus, and then I do not think that it would have been wise to have left any. If vaginal examination is made sometime after complete extirpation, the vagina is found narrowed and shrunken, whereas, if the cervix is left, it is difficult to tell by the vagina, that an abdominal Hysterectomy has been done.

In conclusion I would add, that the mere diagnosis of a fibroid ought not to suffice; but that the symptoms should be closely watched; location, if possible, made, and above all its character determined as early as possible; also, that the social bearings, age etc. should be taken into consideration, with the view of determining whether Medical or Surgical treatment will most benefit the patient.

The above History, Course & Treatment of Fibroids (with my own addenda) up to the present time now brings me to the important part of my Thesis, viz:- "To fibroid tumours (as a whole) with special reference to Drainage after Hysterectomy and its results".

Fibroid Growths. Fibroid disease is not confined to the uterus; but is found in the walls of the heart and other organs and muscles generally. Rarely, however, does the Gynecological Surgeon see"Fibroids" early; but generally after a patient has travelled through a number of physicians, and has undergone all sorts of treatment,in spite of which, her health has completely broken down and disease is stamped on her face. Sometimes, however, we can diagnose them, when examining for something else, the patient being quite unconscious of the existence of a tumour. This, however, is rare. Fibroids seldom, if true and hard, appear singly; but as a rule, are multiple, one larger than the others, in which the secondary changes, such as malignancy, fatty degeneration, etc. set in; and which makes solid tumours so dangerous to life. One cannot help thinking, when comparing the history of fibroids, as given in text-books, with what one has actually seen, that either the one is not wholly correct, or that our own observations and deductions are entirely wrong. Thus, we are taught that fibroids either disappear after the Menopause, or, at all events, that they then cease to give trouble and annoyance, or in any way to affect the health of the patient. This, in my opinion, is not wholly correct; as I have met, within the past three

years several women suffering from fibroids, who had long passed the Menopause; and who had been led by their physician, to believe that if once they reached the "Change of Life" all danger would be past. Sometime ago, I unfortunately had the pleasure of attending such a case, and, as it was about my first experience, I was naturally desirous to arrive at a correct diagnosis. To enable me the better to do so, I examined her a second time in the presence of the Hospital Surgeon, and found my first conclusions verified. Being then asked my opinion, and having learned from the patient, that she had stopped changing early, also observing that she was of a nervous and irritable disposition, arising, in all probability, from the nature of her disease; and taking into consideration the time that had been lost with such treatment as Curretting, and applying Nitrate of Silver, etc., I unhesitatingly advised her to submit to an operation, as it was the only thing that would do her good, and stop her fearful bleedings. May, more, if you do not do so I am afraid you will some day soon bleed to death. This to her was a staggerer, as she had been repeatedly told that no such operation would be necessary, and that it was only a matter of time and all would be well. Yes, all should have been well, as experience, sometime after proved; but, unfortunately, the golden opportunity was

allowed to slip, and the poor women for the following two or three years was a burden to herself and everyone beside her. After some hesitation, she agreed to undergo the operation of the removal of the Tubes and Ovaries, being too weak from frequent haemorrhage to undergo a complete Hysterectomy. On opening the Abdomen, the Appendages and Ovaries were found after great difficulty, adhesions behind the uterus being numerous. On removal of these, the patient did so well for a day or two, that I was beginning to feel free from all anxiety, when, on the third day, she became restless, violent haemorrhage set in, and she died on the fourth day. Death, in this case, I am perfectly certain, was caused, not by the operation; but by the treatment she had previously undergone, which, in some way or other, had weakened the Capsule of the tumour, and which, after the operation, began to undergo a process of expulsion, and so to free itself from the uterine cavity, violent haemorrhage being the result. Unfortunately, no post mortem was allowed. In this case, I am quite convinced, that if better counsel had prevailed, and an operation had been performed some time previously, she would, in all likelihood, have recovered - at all events, from haemorrhage. Gradual resolution would have taken place in the size of the tumour: pressure symptoms would have disappeared, and the woman would have got on tolerably well.

Since this case came under my immediate observation, I have seen a few, who have had their ovaries and appendages, with great benefit to themselves, removed; and also some fibroids, which were supposed to be lying dormant during the Menstrual life to become after the Menopause, distinctly active, and to grow with great rapidity. This condition I witnessed in a women over fifty years of age.

Years ago, when from sixty to seventy per cent. of those subjected to Hysterectomy died, it was, perhaps, wise counsel; but now that such brilliant results have been achieved by the removal of the Appendages and Ovaries (when too weak to submit to a complete Hysterectomy), I think it is no longer right to keep a woman with a fibroid hanging on in the hope of getting better after the Menopause.

As corroborating my views on this matter, I will here give those of some of our most distinguished surgeons. Hegar says: "The Menopause does not, in every case, check the growth of these tumours; but that at this period they sometimes get colossal in size due to cystic degeneration, or to nourishment derived from newly formed vascular adhesions. The symptoms in these cases are not in proportion to the size of the tumour; for small ones may cause troublesome and painful peritonitis, and even inability to go about the house. Börner; "That the most important fact of all, is,

that there is an increase in size both during and after the climacteric."

Tait.- "That the growth of the fibroid does not cease in every case with the cessation of the Menses; and that he has operated on four women who had passed the Menopause, and suffered with rapidly growing tumours."

Shorler reported four cases, which showed exceptional growth after the Menopause."

Thomas, on the other hand, says: "That when undergoing a certain amount of atrophy with cessation of the uterine and Ovarian function, they cease to be, in any degree, a source of annoyance and of danger".

Scattered here and there in Medical Journals, a few cases have been noticed by various authors of increase after the Menopause; and in talking over the matter with Medical friends, both at home and abroad, I have found that their experience is similar to my own.

Sir Spencer Wells says: "That in twelve operations for fibroid and fibroid cystic diseases of the uterus in women over fifty years of age, and, therefore, presumably past the Menopause, he had an equal number of deaths and recoveries, and in his list of one thousand Ovariotomies his percentage of deaths is greater after fifty than before. It is also fair to presume that if these women had been operated on earlier, their chances of a successful issue would have been much greater.

In regard to the soft Aedematous fibroid, I have seen but one. They, as a general rule, occur in women after the Menopause; but whether they are originally distinct tumours from the hard fibroid, or simply due to cystic degeneration of the hard fibroid, is not yet very well known. This much, however, is known, that the removal of the Ovaries and Tubes has no effect on them; while if the Ovaries are removed in hard fibroids haemorrhage, as a rule, is checked, and diminution in size of the tumour takes place; while in the Aedematous variety the only hope of success is a complete Hysterectomy.

From the foregoing, backed as I am by the high authorities quoted, I think I may safely draw the following conclusions:-

I. That the rule stated in text-books, with regard to growths after the Menopause, is not, strictly speaking, correct.

II. That when they do form after the Menopause, they are more severe.

III. That when they continue after the Menopause they degenerate more rapidly.

IV. That the conditions favorable to operations are not then so great.

V. That there are two distinct varieties of fibroid tumours - hard and soft.

VI. That the treatment of the two varieties differs

greatly.

VII. That, as a rule, they belong to different ages - the hard at any age - Aedematous, as a rule, after the Menopause.

VIII. That nervous and irritable people, who have stopped changing early, are very susceptible to hard fibroids.

All this points to the fact, that the sooner we discard the old teaching that fibroids, as a rule, are comparatively safe, and that nothing dangerous is to be apprehended from them, the better. On the contrary, I think I have clearly shown that fibroids are very serious things to suffer from, and that, as soon as they are diagnosed, the patient ought to be carefully looked after, put on palliation treatment, and a favorable opportunity for operating watched for.

When such good results can be shown by any other method electrical or otherwise, then and then only, will the claims of such men have a right to be listened to; but all my experience goes to show that all such treatment only makes the operating field more difficult to the surgeon and more serious to the patient. At the same time, if it can be shown that Abdominal work is barbarous, and that equally good results can be obtained without operating, then none shall rejoice more than I, as it will mean that our art is nearing perfection.

Drainage. Sir Spencer Wells, on his own work, says: "I, from the first, looked upon Drainage as a practice to be, if possible, avoided; and only put in a tube when I knew that I had not been able to clean out the peritoneum thoroughly; or thought that some oozing was likely to go on after the incision was closed; or when, some days later, I had reason to suspect the presence of fluid in the cavity. But I soon began to think that the tube acted as an irritant, and led to the formation of the fluid which it served to remove. At first, when I was in doubt, I left it alone. More than once, I was sorry I had not used it; but much oftener, I was glad".

These statements of Sir Spencer Wells seem a little confusing, and tend rather to complicate than to enlighten the junior student. Now, I do, and now I don't now I am glad, now I am sorry. There is in all this a "Something Peculiar" and we find the same scepticism and uncertainty in the following. "I can now add, that I have only twice flushed and washed out the peritoneal cavity with warm water; and in both cases regretted having done so".

Let us now examine his statistics at the London Samaritan Hospital. Of his own thirteen hundred and seventy eight cases of Ovariotomy, the mortality was 14.14 per cent., and he adds, "I am well aware that two of my

successors at the hospital drain oftener than I ever did, and oftener flush, and they regard both practises as valuable additions to Ovariotomy."

In four years they had two hundred and thirty nine cases,with a mortality of 4.4 per cent., and Sir Spencer Wells, summing up from these statistics says: "I think I have learned".

Keith says: "Drainage is not necessary in moderately bad cases, even although the amount of adhesions be great; but only in very bad operations, where adhesions are extensive, or there is much bleeding, and where there is doubt that all this has not been arested at the time of closing."

This is very misleading to a young surgeon, for where is he to draw the line of distinction between a "moderately difficult" and a "very bad operation". The word "doubt" is ambiguous, at all events, it is so to me; for I confess I do not know of any condition in Surgery where doubt should play a part, as, from the beginning to the end, we should give the patient the benefit of the doubt by having none ourselves. Doubt involves hesitation and delay, and may mean prolonged suffering, nay, even death to the patient.

Keith further adds: "Above all, if the powers of life are feeble,and the operation has to be done quickly before all oozing can be checked, drainage is often our patient's only salvation".

Of his own cases he says;- "I think my second fatal case might have been saved, had I drained. There was an enormous amount of adhesions: adherent surfaces on the tumour representing a space of four inches; but most of the adherent parts were long enough to allow of cat-gut ligatures being applied. There were at least seventy of these left inside the abdomen; and the patient showed signs of feebleness before being put back to bed. I regretted that I had not drained at the beginning; as I removed from the pelvis four days after the operation sixty three ounces of thin dark blood. Nothing has surprised me so much as the amount of almost pure blood that was removed from the pelvis in several of the cases of Hysterectomy, that were drained. Where it came from in some of the cases is a mystery to me. "Here then the drainage tube will be found a safe-guard against these "Surprises" or "Mysteries", as Keith calls them, which constantly confront the abdominal surgeon. What surprises me most is what one is taught and what experience teaches. Patients recover, and it is credited to the fact that drainage was not used. She dies, and it is regretted that it was not used, thereby crediting recovery to drainage. This like a great many of the problems in abdominal surgery is slow of solution; and surgeons will only get out of this after they have paid for it by the loss of their patients.

Gynecologists, who are opposed to chemical solution, drain more; for the simple reason that they are not " "Aseptic" enough in their work. More material is carried into the abdomen, hence their must be a greater exit. This is the reason why some simple cases go wrong, and only bad ones do well; because they have been well drained. In the majority of cases, however, little fluid comes away with the tube, simply because the toilet of the peritoneum is complete by "Sponging". As soon as we decide to remove the drainage tube, the bowels should be freely purged with a view of continuing the drainage (by Nature's drain). The tube which is best made of glass is long enough to come out of the wound at least half an inch, and on being inserted into the abdomen, should be passed against the omentum, if possible; as in this way you avoid danger to the bowels. When thus passed, there is no danger and no complication to any abdominal section; and it will greatly help and benefit the surgeon when there has been a great deal of enucleation; or when the conditions are such that injury to the bowels is unavoidable. It is in such cases that the drainage tube renders alike great service to the patient and surgeon, nay more, if by any chance the bowel has been wounded and overlooked the tube will prevent faecal matter from passing through and irritating the abdominal wound. Some say "That the drainage tube is of no use after a few hours; because

it soon becomes encapsuled by inflammatory products: gets shut off from the general abdominal cavity, and is practically inert". If that be so, how is it that we have in extra uterine pregnancy a free flow of blood through the tube for days from the placental site. Of this I am sure that the point of the drainage tube occupies little of the space covered by the placenta, and yet drainage goes on to a complete cure.

Drainage was first introduced by Peaslee, in 1853.

Closely allied to drainage; and as one of the results of abdominal section is the formation of "Sinuses", which I have ventured to designate by the name of "Abnormal new formation".

Sinuses:- In animal life the most important point in connection with "Morbid' conditions is the constant effort of Nature to protect the body. This beneficial "Influence" was recognised by the Ancients, who, being unable to explain it otherwise, called it the "Vis Mediatrix Naturae". It was therefore left for Moderns to develope this "Influence", which constitutes "Pathological" Science of the present day. As the literature on this subject is meagre, I was only tempted to enter into it through suggestions which I have received from the masters of this class of work, whom I have watched and studied under in different Hospitals abroad, and which I have ventured to describe as "Abnormal new formation."

The causes of these Sinuses generally as resulting from abdominal operations may be divided into two:-

I. Sinuses from causes inside the body.

II. From causes outside the body.

It is well known that the peritoneum throws out a considerable quantity of secretion; and that, where it has been freely incised in abdominal section, somehow or other Sinuses often result. This is notably true in Tubercular Peritonitus; and it is also true that abdominal section is often a cure for tubercular peritonitus. This Autogenetic condition of Sinus formation is also favoured by Syphilis, Malignancy, or any disease which seriously impedes the abdominal circulation.

(a) Irritation. This is often caused by drainage tubes being used too long, although it often takes place when they are not used at all.

Tait on this point says: "Exuding secretions form a distinct mould round any drainage tube, and that adhesions take place either to the intestines, or to each other in about eighty hours, and form a distinct cavity completely separated from the abdomen. Also that when the drainage tube is used, the pressure round the structures may cause the newly formed Sinus to collapse or even to disappear. This, however, is not always so; as Sinuses get organised in the same way as bone, and become completely established."

(b) Sutures, any size, through slipping and absorption of the ligature due to atrophy.

Braumn has described this condition as "Aseptic", and adds: "As a rule they are free from the walls, which one finds formed as the result of drainage tubes". This however, is not new, as we find Keith substituting the Actual Cautery for the pedicle ligature. One of the reasons Braumn gives for this, is, "that the Sinus walls vary greatly in thickness; and accordingly as the peritoneum is much irritated and inflamed the exudation is increased in quantity, hence the extensive thickness and an "Abnormal new Formation".

Sepsis:- Braumn says: "That septic peritonitis (although some writers do not agree with him) is caused conjointly by the Gonococcus and Streptococcus, and that as the former only acts on mucous surfaces its injurious effects are expended on the Fallopian tube and becomes inert, before it reaches the general peritoneum, where it is apt to become encapsuled".

It is in such cases that we often find well marked sinuses, even although there have been no drainage tubes used.

Sanger asserts on this point: "Experiments upon cadavera and animals furnish no convincing proofs; and we are still in the dark as to the precise condition which is played by micro-organisms in this matter."

The results following such Sinus formation are certainly deleterious; as the walls become glandular, which is not only annoying to the patient, but also injurious to healing. Such a state of things is constantly seen in the Intestines, Bladder, etc. As I have already stated, these Fistulous conditions, to a certain extent, mar the good effects of the original operation; and the benefits which would have arisen from it are annulled. This problem, then, presents itself to us.- How are we to deal with such conditions, when the danger of penetrating the intestines in our subsequent operation is so great, that we are forced to fall back upon an "Expectant" line of treatment, coupled with "Palliation"?

I shall never forget a sight I saw six days after an operation, at which I assisted, two years ago. The abdomen was laid open for about six inches, and an attempt, which was only partially successful, was made to enucleate a tumour. After freeing adhesions and attending to the toilet of the peritoneum, the abdomen was stitched with Chinese silk, a broad strap of adhesive plaster was placed over the wound - then a layer of Gamgee tissue, and finally an abdominal bandage was firmly applied. In the afternoon, the patient was tolerably well. There was no great amount of fever, and for three days the temperature varied between 99 F. and

100 F

Things appeared to be doing well. The dressings were not re-applied for six days, when to my great surprise and without any warning, when the dressings were taken off, the wound gaped widely. Stitches and plaster had been of no avail. There was no suppuration worth speaking about, beyond stitch hole abscesses. What had actually happened was, that the bowel had been wounded in freeing the adhesions without being observed; and the faeces gradually exuding themselves into the general peritoneum cavity, and graduating towards the wound, had passed between its edges, and so prevented healing. I must confess that at the time I was completely baffled, as to why this should happen without any severe pain or abnormal temperature, high or low. At this stage, the patient could allow you, without any complaint of pain to introduce your hand into the abdomen. After several attempts had been made to close the wound by freshening the edges and stitching up again, but without success, the patient was sent home. There she was attended to and the wound kept clean by syringing. Numerous Sinuses distinctly shut off from each other formed, some of which admitted two and three fingers. This went on for three months, when the patient succumbed to exhaustion. The question naturally arises. Why did this abdominal wound not heal? This is an exceedingly difficult question to answer -

For my part, I can only regret that drainage was not used from the beginning, which, in all probability, would have carried off the faecal matter, and so prevented it from entering the wound. At the same time, considering the amount of care that was afterwards taken, I am inclined to the belief that there must either have been some Malignancy lying latent and undeveloped, or that the woman's system was saturated with a"Blood Poison", which all the tonics and specifics had failed to reach.