

analogical reasoning, I feel confident that, under this condition, a cure may be effected, that is, that the new hypertrophied tissue may be removed, and the uterus brought back to its pristine state, or nearly so. Instances have come under observation proving that fibroid tumors have been dispersed by absorption—I do not mean by sloughing or by casting off in mass, more common events—under the influence of pregnancy. These tumors, composed of tissue, not dissimilar from that of the morbid hypertrophic element, are caught in the involution-process, which reduces the normal hypertrophic element, and like it, they vanish. Is it not in the highest degree probable that the new hypertrophic matter, uniformly distributed in the midst of the proper uterine tissue, may be equally caught in this absorption-process, and be thus removed? I have seen distinct diminution in bulk of the hypertrophied cervix follow upon labor. But I have also seen hypertrophy of this part persist through several pregnancies.

I think, then, we may conclude that the uterus hypertrophied under chronic metritis may be restored, at least, sufficiently for the resumption of its duty. And if the morbid hypertrophic matter can be removed by gestation, why not by other means? I do not pretend that other means at our disposal are of equal efficacy with pregnancy. But if we can establish a reasonable presumption that the condition is curable by any means, surely we need not despair of finding other means that may accomplish the same end.

Again, uterine fibroids occasionally undergo a process of degeneration or atrophy, the senile involution, after the climacteric. The proper uterine tissue itself undergoes this atrophic involution. Why should not the abnormal hypertrophic tissue undergo the like change? As a rule new formations are more ready to undergo atrophy by absorption or degeneration than healthy tissue; and, as a matter of observation, I think I shall be supported when I affirm that hypertrophic induration, the result of chronic metritis, does undergo atrophy under this condition.

It is in accordance with general opinion that active inflammatory process of the uterus and ovaries tends to spontaneous remission and cure at the climacteric period. Ceasing to be stimulated by the periodical hyperæmia of ovulation, the local inflammation naturally subsides. But we must not hastily conclude that uterine disease will always undergo spontaneous cure or alleviation at this period. In many cases the disease continues, often attended with hemorrhage. The morbid action, once set going, is maintained by the hyperæmia of obstructed venous circulation, and by the disposition to local hæmostasis so common at this period of life. And there seems to be also a more or less persistent ovulation-effort going on, in many cases, for years after the climacteric has, according to all presumption, arrived.

Scanzoni urges many reasons why sterility is the doom of women suffering from chronic metritis. 1. There is the accumulation of more or less unhealthy secretion. 2. Premising that the shedding of the mucous membrane itself is much more common than is generally thought, he says he has never known a case in which considerable fragments of mucous membrane having been regularly cast at each menstruation the woman has conceived. The membrane is cast just at the end of the period, the

very moment when the impregnated ovum wants a decidua to attach itself to. 3. The ovaries are frequently implicated in chronic metritis. 4. There is pain or indifference attending the sexual act.

Certainly sterility is a frequent consequence, but it is far from universal. Scanzoni himself admits that pregnancy may occur, and he rightly says that its course is generally unfavorably affected by the morbid state of the uterus.

Can the so-called benign tumefactions caused by chronic hyperæmia and inflammation pass into cancerous degeneration? This is another question often anxiously put. The evidence in support of the affirmative is very fallacious.

The treatment of acute metritis will be governed by the opinion we may form as to whether the case is one of metritis simple, or of metritis complicated with septic infection. In the former case the treatment will be more purely antiphlogistic. Twelve to twenty leeches may be usefully applied above the pubes. Aran and most French physicians advise six or eight leeches to the cervix uteri. Fomentations give relief. A plasma consisting of one drachm of extract of belladonna mixed with half-an-ounce of mild blue ointment and two ounces of simple cerate, spread in a thin layer on a piece of lint, and applied to the hypogastric region, the whole covered over with a light packing of cotton wool, will not only give ease, but be of material use in subduing the inflammation. Experience has proved the importance of completely securing the surface covering inflamed organs from contact with the air. It is by acting in this way that the cotton-wool packing undoubtedly does good.

It is desirable to unload the rectum of any fecal accumulation by an enema. But this done, it is not advisable to disturb the inflamed parts by purging until the acute stage is past. When the stage of resolution is advanced, purgatives are useful. Püllna, Hunyadi, or Friederickshall waters answer well.

Tepid vaginal irrigations with water or decoction of poppyheads, or with a little laudanum, are useful.

In the beginning there is nothing that acts so well as calomel and opium. One grain of calomel, with half a grain of opium, may be given every six hours for a day or two, taking care to stop short of salivation. After this salines, especially the acetate of ammonia and nitrate of potash combined with sedatives, constitute the best internal remedies.

It is needless to add that absolute rest is the essential condition of successful treatment in the more acute forms of the affection. Precaution is especially necessary when the menstrual epoch is approaching.

When there is septic complication, leeching must be avoided. The mercurial belladonna ointment may, however, still be useful. Salines must be early combined with, or give place to bark, quinine, and general tonic treatment.

The discharges should be carefully examined. If they be in any degree offensive, tepid intra-uterine injections of weak solution of permanganate of potash or carbolic acid should be used. Septicæmia is kept up by the continuous or intermittent imbibition into the vascular system of fresh doses of septic matter. The system may frequently be able to throw off a moderate dose of the poisonous element, and the local inflam-



mation, as well as the general disturbance, may soon subside if the renewal of the irritating cause be prevented.

The treatment of chronic metritis is conducted essentially on the same principles as that of arrested involution. The first question to decide is as to the application of what is called antiphlogistic treatment.

Upon the usefulness of local abstraction of blood, opinions are very much divided. The indication seems clear to relieve the local hyperæmia which is so essentially concerned in the genesis and maintenance of the disease. And I am willing to admit that great ease is often felt by patients after leeching the cervix uteri. But it has appeared to me that this benefit is chiefly experienced when the disease is in the early or sub-acute stage, that is, during Scanzoni's first stage of infiltration. When induration has set in, I believe not much good is to be expected from bleeding. And the indication to relieve the tension of the local circulation may often be greatly met by supporting the loaded organ at its proper level by a lever or other suitable pessary. This contrivance will often not only facilitate the return of blood by the veins, but it also, by nursing the uterus, as it were, secures a degree of rest which is essential to cure. There is always some degree of prolapsus, if not of version or flexion, which involves more or less strangulation of the vessels at the point of their entry and exit. If this sinking or displacement be counteracted, one great cause of the maintenance of the disease is *pro tanto* mitigated. This mechanical support will be used chiefly in the earlier stages, but it will be of service at times all through. One great recommendation of it is, that it renders "lying down" less necessary. I am sure that in many cases a woman will obtain more effectual "rest" for the uterus, by a properly adapted pessary, whilst taking a moderate dose of exercise, than she will by rigorous "lying down" without it.

If, therefore, leeches be employed, it will be wise to watch the effect well, and not to repeat them unless we are well assured that they do what is wanted of them by relieving gorged vessels.

It is well to remember—I do not mention this as an objection to the proper use of leeches—the more or less troublesome events that may attend their use, to which reference has already been made.

Scanzoni, who is a strenuous advocate for leeching, signalizes another consequence. He describes a peculiar erythema or urticaria which comes on a few minutes after the leeches have been taken. A shudder or even a rigor is followed by swimming in the head, disorder of the senses, even delirium. Then the urticaria blebs come out.

Leeches should not be applied when there is marked anæmia; when the signs of acute hyperæmia are not present; when the disease is of long standing, and the induration process has made way.

Warmth is of the greatest service in the treatment of chronic metritis. When there is any exacerbation of pain from fatigue or exposure, heat may be applied dry, by heated bags of salt or bran, or water, to the hypogastrium. But in almost every stage, warmth, combined with moisture, renders eminent service. The whole bath at a temperature of 90° to 95° F. is perhaps the best method of applying it. It acts in a twofold manner. It exerts a not unimportant resolute influence upon the gorged, loaded uterus. Not that any marked power can be proved in promoting

absorption when the organ has become hypertrophied and indurated. But in the earliest stages, there seems reason to believe that warm moisture may aid in relieving congestion. No one doubts the beneficial soothing action of hot fomentations on superficial phlegmasiæ. A similar action can be exerted on the uterus. Secondly, warm baths are useful in promoting a healthy secreting action of the skin; and this is an essential condition of the relief of internal hyperæmic processes.

The hip-bath may often be conveniently substituted for the whole bath, although it is open to the objection that it compels an uncomfortable position.

To get the full benefit from warm baths, it is necessary to give the water free access to the vagina. This can be accomplished by the use of the bath-speculum. The most convenient form is a conical one, with a very wide inferior opening. The cone—the part introduced into the vagina—is perforated with holes the size of a sixpence. The patient can easily apply it. Another method is by irrigation. The warm douche can be kept playing upon the cervix for fifteen or twenty minutes at a time, either by help of a syphon, or of a Higginson's syringe.

In many cases, the value of warm baths is enhanced by the addition of various medicinal substances. Amongst those I have found the most useful are Vichy salts, or the Woodhall Spa waters. Gallard, however, cautions against the prolonged use of Vichy or other alkaline or mineral waters. He advises, in preference, more simply thermal springs, as Plombières.

The general treatment should be sustaining and tonic. Iodine, iron, strychnine, quinine, and arsenic, become extremely useful when active inflammatory conditions have been subdued.

Of late years, so-called resolute pessaries of iodine, made up into conical balls, with cocoa-nut butter or other ingredients, have been largely used. Most patients find it troublesome, if not difficult, to apply them properly: often, whether from being badly made or other causes, they fail to melt down *in situ* as desired; and, not seldom, they are a source of so much irritation that they have to be given up.

I have, for some time past, found it better to introduce into the cervical canal, or into the cavity of the uterus, iodine ointment or solution by means of the instrument figured at p. 155.

The subject of intra-uterine medication will be more fully discussed when dealing with Endometritis.

Since intra-uterine medication can only be carried out by the physician, and as it is essential to apply iodine frequently, the method of Scanzoni can be employed at the same time. This consists in introducing, by means of a small bath-speculum, a drachm of iodide of potassium in an ounce of glycerine to the fundus of the vagina, keeping it there all night. A better plan is to apply a pledget of cotton-wool soaked in the iodized glycerine by means of the speculum figured at p. 156.

C. Mayer speaks highly of the value of pyroligneous acid in treating the bleeding papillary affections of the os uteri and cervical canal. He says there is no more efficacious means. He applies it either alone or with equal parts of aqua creasoti, through the speculum. It is left in contact long enough to stop the bleeding, and until the abraded spot



assumes a white appearance. It is then washed away by a syringe. For this condition I have found the acid nitrate of mercury recommended by Henry Bennet more useful.

Amongst the most effective measures for substituting a healthy for the morbid nutritive process going on, and of promoting absorption of morbid tissue, are the various forms of cautery, actual and potential. The actual cautery was extensively used by the late M. Jobert. It was in his clinique at St. Louis that I first became acquainted with its action and use. I think it would have become more firmly established as a resource in the treatment of the results of chronic metritis, were it not for the fear lest so potent an agent may do harm, and the formidable preparations which the use of the hot iron involves. Paquelin's cautery greatly lessens these objections. With this apparatus, where simple cautery is required, we may dispense with the cumbersome galvano-caustic apparatus.

The following precautions are necessary when applying the incandescent iron to the vaginal portion: 1. To use a horn speculum, which is less heat-conducting than metal; or else, if using a metal speculum, to interpose a packing of lint outside the blades, so as to protect the vagina. 2. To be careful to have nothing in the field of the speculum but the vaginal-portion, so that no risk be run of cauterizing the vagina. 3. To apply the cautery to the outer edge of the os uteri, avoiding the cervical cavity. It is useful to apply a bit of ice immediately after the cautery, or to syringe the vagina with a stream of cold water.

The best substitute for the actual cautery is the potential cautery. Various caustics have been used. They all act substantially in the same way. By chemical action they kill a portion of tissue, which is thrown off as a slough or eschar, leaving a sore which has to heal by granulation. During this healing, some amount of absorptive action is set up in the proximate tissues; and the healing taking place by cicatrix, further diminution of bulk is effected by the contraction.

The substances most employed are: the acid nitrate of mercury—this is very convenient and effective; potassa cum calce fused in sticks—this is the most convenient and generally useful caustic with which I am acquainted. It differs from the acid caustics, such as nitric, chromic, and sulphuric acids, which, absorbing moisture rapidly, and coagulating albumen, produce only a superficial slough. Potash also has a great affinity for water; but not possessing the property of coagulating albumen, it is carried more deeply into the substance of the part to which it is applied. Herein consists the advantage it possesses. Upon this penetration it is that the absorptive action it sets up depends.

The time selected for applying it should be within a few days after the termination of a menstrual period, so as to secure ten days or more for the granulating process to go on undisturbed by the menstrual flux.

The mode of using it is to introduce the speculum so as to get the vaginal-portion well into the field; to wipe off all adhering secretion; then, holding a small piece of the potassa cum calce in a long speculum-forceps, to rub it across one or both lips of the os uteri several times. This produces a blackish bar. Care should be taken not to touch beyond the hard substance of the cervix, avoiding the vagina. When a sufficient

application has been made, a pledget of cotton-wool steeped in vinegar is immediately applied to the part. This neutralizing any remains of the caustic, obviates extension of its action to the vagina. A bit of string attached to the wool, enables the patient to withdraw it, which may be done in a few hours. Unless these precautions be adopted, cicatricial bands or contractions may ensue.

After such an application no further local treatment is necessary until after the lapse of ten days. The granulating surface may then be lightly touched with nitrate of silver, or tincture of iodine.

At one time a very favorite remedy, one employed, it is true, without precise diagnosis of metritis, was blistering by tartar-emetic ointment. By rubbing this substance over the groins or hypogastrium, or inside the thighs, a revulsive action is produced, which is sometimes serviceable.

It has been recommended to establish a seton in the vaginal-portion as a derivative and resolute. I have not put this to the test; but I can quite understand that it may act beneficially. The potassa cum calce, however, answers the same indication.

The cautery, potential or actual, should not be employed whilst there is any degree of active inflammation. It comes in most beneficially when vascularity is subdued, where there is a languid process of tissue-change going on.

Laxatives become important in chronic metritis. The compound decoction of aloes and lenitive electuary are useful forms. But I have found the greatest benefit from the daily or occasional use of a pill containing two grains of watery extract of aloes, half a grain of extract of belladonna, half a grain of extract of nux vomica with Castile soap.

Scanzoni speaks emphatically against the plan of enforcing the "*repos absolu*," that is, "lying-down," as one of the most serious errors that can be committed. I have seen so much evil from this course, and have seen so many women who have been kept for months in the recumbent posture, not only without benefit, but with decided detriment, get well quickly when subjected to a more liberal treatment, that I heartily endorse Scanzoni's conclusion.

Scanzoni says the Friederickshall, Püllna, Kissingen, Ems, Carlsbad, and the other waters, act only on the diseased uterus through their virtue as purgatives.

In all chronic uterine diseases the habitat becomes an important matter. Women, far more than men, especially when invalids, are "*adscriptæ glebæ*." If the soil be damp, or other hygienic conditions be unfavorable, women suffer seriously, and often in such a degree as to frustrate the best-directed medical treatment. Change of air, then, which means change of soil, is often essential to recovery. A dry elevated site is generally the most suitable.

The restorative treatment comes into use when the local disease has at least, in part, subsided. Iron is usually badly borne whilst inflammation, no matter how slight, is going on. The way must be prepared by salines, laxatives, bismuth, and other agents which allay irritation of the stomach.



## ULCERATIVE PROCESSES.

Besides the uterine abscesses, the result of acute metritis, the cancerous and tuberculous ulcerations, and the puerperal suppurations, ulcers occur on the vaginal-portion.

In the course of uterine and vaginal catarrh there arise excoriations or abrasions of a stellate or annular form around the os externum which commonly extend into the cervical canal. These at times pass into erosions and ulcerations marked by papillary granulations, of a fungoid aspect, or the surface is tuberos through the exuberant development of ovula Nabothi. The origin and persistence of this state are favored by hypertrophy, hyperæmia, and varicosity of the vessels of the vaginal-portion.

The so-called *phagedenic ulcer*, the *corroding ulcer* of Charles M. Clarke, of the os uteri, is very rare. Its existence otherwise than as a stage of coneroid or cancer is questioned. But I believe I have seen it as an indented hollowed ulcer on a hypertrophied, hard, callous vaginal-portion, eating away the cervix uteri, and seizing upon the neighboring structures, in a manner very similar to that of lupus exedens.

The *syphilitic ulcer* possessing the proper characters of the primary chancre is not common; but it may at times be observed exhibiting a closely similar aspect to that which is seen on the penis, and producing in like manner sores more or less sharply defined on the vaginal duplication which lies in contact with the cervix uteri. On examining by the finger, the sharply-defined edge of the syphilitic sore may at first impose on the sense of touch for the os uteri, the pit or depression formed in the fundus of the vagina is so distinct. It is best treated by nitric acid, the acid nitrate of mercury, or the actual cautery.

## ENDOMETRITIS: UTERINE CATARRH.

Inflammation may be more or less limited to the lining membrane, constituting endometritis. This may take its rise in childbirth; and it may be general, or chiefly restricted to the original seat of the placenta. The placental seat remains rough, presenting papillary projections; perhaps one or more may be large enough to deserve the name of polypus.

In the case of endometritis proper, the uterine contraction after labor has been efficient, so as to prevent the entrance of septic matter into the venous channels and lymphatics, and thus to obviate metritis.

Where the constitution is sound, free from morbid diathesis, endometritis, treated early, admits of easy cure. Rest alone may be sufficient. The regenerative power of the uterine mucous membrane is so active, that the degenerated tissue being cast off, a new sound one is easily formed. But if there be a morbid diathesis, as trumous, tubercular or syphilitic, the cure may be indefinitely protracted. The mucous membrane of the uterus and its glands is not less prone to receive the stamp of these diatheses than is the mucous membrane of other organs. The strumous mucous membrane of the uterus is tumid, undergoing constant epithelial shedding, its glands are hypertrophied, and secrete an excess

of mucus. This, in fact, is one of the most troublesome forms of uterine catarrh.

Chronic endometritis leads to the exuberant production of ovula Nabothi in the cervix and on the vaginal portion. Indeed, Lancereaux has designated this as "cystic metritis." In some cases the cervix is virtually closed by a collection of cysts disposed in a loculated stroma, and containing gelatinous mucus, compressing each other. The vaginal-portion is hard, tuberos, from the distension caused by these projecting distended sacs. Often, one or more of these cysts make their way through the os externum, and, becoming more pedunculated than the rest, appear in the vagina as vesicular polypi.

When these occur in women past the climacteric, the touch and appearance forcibly suggest the suspicion of commencing malignant disease. The shot-like hard projections around the os; the red, or bluish-red, angry-looking mucous membrane in which they are set, make up a condition hard to distinguish. Usually, however, the vaginal portion does not become so large as in cancer; it does not become fixed, and it is less apt to assume the mushroom shape. It is best treated by decided applications of actual cautery, or of potassa cum calce.

The ovula Nabothi are partly closed dilated mucous sacs of the mucous membrane of the cervix, but much more frequently they appear as small collections of nuclei at various depths in the submucous tissue of the cervix; these capsules grow with transformation of the nuclei to cells, and project upon the surface where they dehisce, or prolapse as polypi. They contain a gelatinous mucus, mixed with cells and nuclei, fat-globules, spindle-shaped and many-branched cells, and colloid granules.

When there is free secretion of mucus, these polypous, mucous-membranous growths, vesicular polypi, and small sarcomata lead to contraction or even closure of the os uteri, by means of a richly nucleated, fibrillous outgrowth of connective tissue. This leads to retention of the gradually increasing pus or mucus in the uterine cavity and cervical canal. The uterus may thus be distended to the size of a goose's egg, of a fist, or even to that of a man's head; its walls become hard, sometimes thinned; its mucous membrane is transformed into a smooth or papillary connective tissue growth; its contents are a colorless synovial-like, or yellowish, red-brown, or chocolate-colored glutinous-fatty fluid showing cholesterine or pus. This is the so-called *hydrometra*. When the canal of the cervix gets distended, in like manner, the os internum remaining narrow, the hour-glass form of uterus is produced—the *uterus bicameratus*. In some rare cases, perforation has occurred through an ulcerative process allowing the contents to escape into the peritoneum.

This distension of the uterus almost necessarily leads to retrograde distension of the Fallopian tubes, which are even more likely than the uterus to undergo perforation.

Within the period of generative capacity, chronic catarrh may lead to hypertrophy of the uterus. During decrepitude, it leads to relaxation and a pulpy state.

An *exudative* or *croupous endometritis* is seen in rare cases as a secondary appearance in the course of typhoid, cholera, exanthemata; and especially with a diphtheritic inflammation of the vagina in childbed.