

weiler, "needs the greatest patience and self-sacrifice, and genuine sympathy for the sufferer, and must, therefore, as Nothnagel beautifully expresses it, 'Auch ein guter mensch sein, soll er ein guter Lungenarzt sein.'"

PUERPERAL SEPTICEMIA, WITH CASE.

BY JOHN Z. CURRIE, M.D., S.M., P.H.D., CAMBRIDGE, MASS.

FOR various reasons puerperal septicemia is one of the most important diseases with which the medical practitioner has to contend. Notwithstanding the fact that our increased knowledge respecting its cause and nature and the consequent improvement in the means resorted to for its prevention and cure, have reduced the frequency of its occurrence and somewhat lessened the rate of mortality from this source, the fact remains that this disease is liable to occur in the practice of any obstetrician, frequently when least expected, and is even under the most favorable circumstances an affection of an extremely grave character. The rate of mortality from this disease is still extremely high; when death occurs it is under circumstances which are peculiarly sad and likely to excite a great deal of comment; moreover, some one who has been connected with the case, usually either the doctor, or nurse, or both, is almost certain to be censured. There are other reasons also why puerperal septicemia is one of the most undesirable diseases which can occur in any practice: recovery is usually slow and frequently imperfect, treatment requires a great deal of personal attention on the part of the medical attendant and when the nature of the disease becomes known it does not in any sense contribute either toward the excellency of the physician's reputation or to the increase of his professional business.

Considerable discussion has arisen at different times in reference to the use of the term puerperal septicemia, but if it be understood that puerperal septicemia differs from septicemia occurring under ordinary circumstances, only in the peculiar conditions under which it occurs, no uncertainty should exist as to the precise character of the disease referred to. It is simply a case of wound infection, and various terms are applied to the resulting conditions, according to the parts or organs chiefly affected. As has been pointed out by Dr. H. C. Ernst, for its production there is required the same combination of circumstances as for the production of septicemia in any other case, namely, (a) a specific virus, (b) a means of entrance for the virus into the system, and (c) a constitutional condition which under existing circumstances favors the development of the disease. In this case the specific virus is a pathogenic bacterium, the result of a morbid process which has either taken place within the genital tract or has been communicated from without by something which has come in contact with the parts. The wounded genital tract furnishes abundant means of entrance for the bacteria either at the original placental site, where a rent or abrasion has occurred, or even where the mucous membrane has been denuded of its epithelium. The reduced vitality of the parturient woman, the result of gestation increased possibly by a protracted labor or an excessive hemorrhage, together with the difficulty which exists of keeping the wounded parts in a septic condition, renders the woman particularly susceptible to infection.

I have selected the following case, which occurred in my own practice quite recently, not for the purpose of giving a detailed statement of its progress from day to day, but because it illustrates in a marked degree certain important peculiarities of the affection under consideration and because it affords an opportunity for a practical illustration of such treatment, as, in my opinion, is most likely to promote a cure.

Mrs. —, a healthy, robust woman, aged twenty-one years, was delivered of her first child April 19, 1894. The labor, although somewhat tardy during the second stage, was quite natural and completed without interference of any kind. The external parts were small and somewhat rigid and in order to prevent a rent posteriorly a slight cut was made on each side of the vaginal outlet during the expulsion of the head. Notwithstanding this a small rent occurred posteriorly during the passage of the shoulders. The placenta and membranes were expelled intact with comparatively no assistance and but little hemorrhage followed. After the vaginal canal was well washed out and the rent properly cleansed, it was repaired and covered as well as possible with an antiseptic dressing. The rent was quite superficial but two stitches being required to retain the parts in apposition. For the sutures kangaroo tendon of moderately large size and which had been purchased ready for use, was used.

The progress of the case for the first three days was uneventful. The secretion of milk was established by the third day. There was no increase of temperature at any time up to this period and no discomfort of any kind was experienced. On the morning of the fourth day the patient's appearance had changed sufficiently to attract attention and upon inquiry it was learned that she had a slight chill during the early morning. The chill was very slight there being no rigor and no external appearance of its occurrence. It consisted simply of slight, creepy, chilly sensations, referred especially to the back and lower extremities. When I saw her about three or four hours afterward, the face was flushed, skin dry and hot, tongue dry and somewhat furred, temperature 105°, pulse 126. There was constant complaint of headache, great thirst and "bad taste in the mouth." Later the tongue became thickly furred, there was profuse and almost constant perspiration. Jaundice was apparent on the second day of the attack, and on the third day diarrhea occurred. The stools were liquid, of light color, very offensive, and soon became involuntary. Food was taken in fair quantities throughout the attack, was well retained and caused no inconvenience. The secretion of milk was not suppressed until near the end of the attack. After the occurrence of the diarrhea the pulse fell to 108 and the temperature to 103°. The highest temperature attained at any time was 105.3° on the morning of the second day. This condition continued for about seven days when improvement in every respect began. The temperature fell to 101° and pulse to 98. The jaundice gradually disappeared, control over the action of the bowels was regained, perspiration became less profuse and the desire for food more marked. Internal examination within four or five hours after the occurrence of the chill revealed an unhealthy condition of the edges of the posterior rent. The tendon in the most superficial stitch was apparently unchanged and was surrounded by a small but appreciable amount

of pus. As far as could be ascertained at this time, in approximating the edges the tendon had been drawn through the skin on one side. Several small lacerations were found within the vagina and the external os was considerably lacerated. Each portion of broken surface was covered with a grayish pseudo-diphtheritic membrane. The uterus was large, uncontracted, loose and flabby and the outline difficult to trace. The external os resembled a loose opening, unhealthy in appearance and studded thickly with pseudo-diphtheritic patches. The uterine cavity contained nothing but the ordinary amount of discharge and a small amount of *débris*. No shreds of membrane, clot or anything else likely to cause infection were found.

The treatment resorted to in this case was as follows. The uterus and vagina were well irrigated with hot water. The uterus was then emptied of its contents, a sharp curette being used for the purpose. Another warm-water injection was used followed by one of bichloride of mercury, 1-2,000. Every portion of broken surface about the cervix uteri and within the vagina was cauterized with stick nitrate of silver, and subsequently dressed with a powder composed of equal parts of iodoform and boracic acid. The unhealed portion of the external wound was reopened, the remaining tendon removed and after being properly cleansed and cauterized, the wound was dressed with the powder just referred to. Every rent or abrasion was treated in the same manner. For several days the uterine cavity was washed out with warm water followed by a mild antiseptic solution, once daily, the vaginal cavity twice daily, and every portion of broken surface was either cauterized or well covered with the powder once daily as appearances indicated. As improvement took place the wash was used less frequently; and as the sores assumed a more healthy condition, powdered oleate of zinc was substituted for the powder before used. At the end of the second week after the chill, and after all applications excepting the vaginal douche had been discontinued, another chill occurred. This was more pronounced than the first, but was not an actual rigor. The general condition of the patient after the second chill was much the same as after the first and all the symptoms which resulted were about the same as in the first instance, excepting that the jaundice and diarrhea were less marked. A vaginal examination revealed the presence of a large sore of the same appearance of those before described, in the fold between the cervix uteri and the posterior vaginal wall. The same treatment was resorted to as in the first instance and after about five days, improvement again began. Recovery after this was uninterrupted but not rapid. Constitutional treatment was supporting and symptomatic. Quinine was given in one large dose at the outset, and afterward in four-grain doses every five hours. Occasionally phenacetine was given to relieve restlessness or headache, or if the temperature for several hours exceeded 104° and was not reduced by alcohol baths. The exhibition of phenacetine was never trusted to the nurse. Milk, or some form of liquid nourishment, was given every two hours during the day and at night, in such manner as would least disturb the patient. In about five weeks after the birth of her child, the patient apparently needed no further attention, and has remained quite well up to the present time.

The treatment just described gives a fair general idea as to what course, in my opinion, should be pursued in every case of puerperal septicemia; and just in proportion as this treatment is resorted to at an early date and carried out effectually, will be the number of recoveries.

An examination of the whole genital tract should be made at once; and even although a probable source of infection may be discovered, no part of the genital tract should be omitted in consequence of that. After thoroughly washing out the vagina, it is better to begin by treating all external broken surfaces, if there be any. Then every portion of the vagina and the cervical canal, as far as possible, should be exposed, and abrasions and lacerations sought for. Each of these, after being thoroughly cleansed, should be cauterized. This not only insures destruction of all septic material at that point but also seals the broken surface temporarily and promotes repair. Garrigues recommends that equal parts of chloride of zinc and water be used for this purpose and that it be kept in contact with the part for at least one minute. This, however, is very painful, and difficult to apply at all extensively without an anesthetic. I have been accustomed to use stick nitrate of silver for this purpose and always with apparent good effect; it acts very promptly, destroys the virus sufficiently, does not injure the tissue deeply, and seals the opening effectually for the time. When this has been done the uterine cavity should be washed out with warm water and then thoroughly emptied of its contents. For this purpose a large, moderately sharp curette is most desirable and if used with care no ill-effect should result from its use. Some operators prefer a dull curette, while others are satisfied with swabbing out the uterus with antiseptic gauze or other soft material, especially in mild cases. No doubt one operator succeeds better with one instrument while another does the work more effectually with another. The means by which the uterus is emptied is not of so much importance as that it should be done thoroughly and without injury to the organ.

In November, 1894, Alberti reported the case of a woman who was curetted for retained placenta and in attempting to remove the material which had been scraped away, a small loop of intestine was drawn down. Notwithstanding all the effort which was made she subsequently died in consequence of the uterus having been punctured by the curette. The curette should be used carefully to avoid injuring the weakened, flabby walls, but at the same time every portion of the internal surface of the uterus should be gone over and all the contents including the diseased decidua should be removed. A curettement under existing circumstances is much more difficult than under ordinary circumstances, owing to the enlarged cavity and non-resisting walls. In a case of moderate puerperal sepsis, which occurred in my own practice not long since, after the curettement the patient's condition was still very unsatisfactory, and the operation was repeated on the following day. It was then seen, as had been suspected, that the first attempt had not removed all the contents. In all probability, in many instances of this kind in which no improvement follows the use of the curette, the explanation is that the uterine cavity has not been thoroughly emptied of its contents. The point sought to be accentuated is that the uterus should be completely relieved of any accumulation at as early a moment as possible and without

injury being inflicted upon the organ. The cavity should then be washed out with warm water which has been boiled, followed by a moderately strong antiseptic solution. If the antiseptic selected be one of an actively poisonous nature, it should be followed by another warm-water douche to prevent any danger from absorption. The manner of giving the intra-uterine douche is of considerable importance, as serious accidents have resulted from its use. Rather than to trust to any of the complicated instruments devised for this purpose, it is better to see that there is ample space for the return of the injected liquid and that it actually does all return. If even a small quantity remain within the uterus, it frequently occasions a severe uterine colic. While this may not be a very serious matter, the pain is sometimes very great and produces considerable constitutional disturbance. It is well to remember that at this time the uterine cavity is simply a loose sac, and that there is nothing to favor the outflow of the liquid excepting gravitation. After the liquid has ceased to flow from the uterus, the cervical canal should be gently opened and depressed until no more liquid escapes. If there be no tenderness over the region of the uterus, external pressure and turning the patient on the side favor the return of the liquid. It is better to introduce the liquid at the fundus, as this favors its return and insures its coming in contact with the whole cavity. It is better also that the liquid should enter the uterus by force of gravitation than that any additional force should be used. In this way the force is not great, the flow is steady, the return of the liquid is likely to be established at once and the danger of its being forced in any harmful direction is reduced as largely as possible. It is also well to use a soft instrument for entering the uterus. I have known a uterus so attenuated that a Simpson's sound punctured the wall simply by its own weight. I have learned of another case also, in which the uterus, soon after death, when laid over the end of an upright Simpson's sound, apparently offered no resistance whatever to the entrance of the instrument through its walls. For this purpose I frequently use a soft-rubber male catheter. With a sound in the eye it is easily carried to the fundus and there is comparatively no danger of inflicting injury.

The most desirable intra-uterine injections are a two-per-cent. solution of carbolic acid or creolin, or a solution of bichloride of mercury, varying in strength from 1 to 2,000 to 1 to 4,000. In my opinion, especially in serious cases, for the first injection at least, a moderately strong solution of bichloride of mercury is by far the most reliable. For subsequent use a weaker solution of the same character or a carbolic-acid solution should be substituted. Creolin is somewhat objectionable on account of its color. When using creolin in this way it is impossible to judge accurately of the character of the discharge which is present. The use of eucaline in the proportion of 1 to 100 of water has recently been recommended for this purpose. It is one of the coal-tar products combined with eucalyptus and it is alleged that while it possesses all the virtues of creolin as an antiseptic, its use is not objectionable on account of its color. For simply cleansing the vagina, in my opinion, there is nothing so agreeable to the patient, and at the same time so effectual as one or one-and-a-half per cent. solution of lysol. After the use of the intra-uterine douche an iodoform suppository should be placed

within the uterus and carried up to the fundus. It is occasionally difficult to accomplish this with ordinary dressing forceps, and there is some liability of injuring the uterus by their use. It is much more easily accomplished with a long, curved instrument made for the purpose; some authorities recommend that the uterus be measured with the forceps before inserting the suppository in order to insure its reaching the fundus. Garrigues recommends that a suppository containing about 40 grains of iodoform be used once daily, after the intra-uterine injection, until the sloughs come off and the fever abates. After this it is of the utmost importance to secure and maintain perfectly free drainage. In general, especially at the beginning of the disease, the entrance to the uterus is so relaxed that no effort in this direction is required. When necessary, drainage should be secured by packing lightly with antiseptic gauze. Some recommend that this be done in all cases; but if the passage be free and intra-uterine injections are used as suggested once daily, there is no apparent necessity for it and it is just possible that in some cases the gauze might act as an obstruction rather than otherwise.

After-treatment may depend very largely upon existing circumstances; however, an examination should be made at least once daily and if there be any foul discharge from the uterus, the intra-uterine injection should be repeated and the iodoform suppository placed in the uterus as before. Each sore should be observed at least once daily and either cauterized or dressed with an antiseptic dressing, as appearances may indicate. As long as there is any tendency to the formation of membrane, cauterization has a better effect than anything else. Patients seldom complain of any pain from its use. As an antiseptic dressing the powder before referred to composed of iodoform and boracic acid, answers the purpose very well. It has the advantage of being easily applied by an insufflator and of adhering to the parts for some time. When the sores do not heal readily, after the sloughs come away, I have found the daily application of finely powdered oleate of zinc especially useful. Daily inspection should be continued until all broken surfaces are either healed or are in a healthy condition although improvement may have taken place in other respects. If a single point be overlooked fresh infection may occur.

As to constitutional treatment no general rules can be laid down. Quinine is undoubtedly useful and should be given in four or five grain doses every five hours. It is claimed by some authorities that quinine in addition to its tonic properties, possesses the power of preventing the emigration of the leucocytes from the veins and capillaries, and is thus especially useful in these cases. As in all similar cases it is of importance to nourish the patient as well as possible, but as to how this can be done most effectually can be determined only by the circumstances in each case. Some authorities recommend the free use of stimulants in all cases from the beginning of the attack, but the legitimate use of stimulants in these as in all other cases appears to be, to withhold them until a stimulant is actually called for and to depend upon the various forms of food for nourishing the patient.

The first interesting feature in the history of the case referred to in this paper, is, its unexpected occurrence. In my judgment there was no legitimate reason to anticipate an attack of this kind under ex-

isting circumstances. The labor was normal, not of unusual duration or severity, was conducted on strictly aseptic principles, and completed without interference of any kind. Internal examinations were made very infrequently, external manipulation being relied upon very largely to determine the progress of the case. The hands were thoroughly prepared before any examination was made, and never entered the genital tract without being held in an antiseptic solution prepared for that purpose; moreover, the patient was a strong, robust young woman and apparently was not much exhausted by the labor. Within twelve hours after the completion of the labor, I attended another case of parturition, in which the circumstances were almost identical, excepting that the labor was shorter. The child had evidently been dead for some time, as it, as well as the retained discharges, had undergone decomposition to such an extent as to be extremely offensive. The manner of conducting the labor was the same in each case, and no greater effort to prevent infection was made in the latter than in the preceding case. This woman made an excellent recovery. In the first case, without any legitimate reason to anticipate such a result, a septicemia of so malignant a nature as to threaten destruction to life in a very short time was suddenly developed, whereas, in the second case in which some danger of septic infection might reasonably have been expected, recovery was rapid and without any interruption.

Another interesting feature in connection with this case is, that notwithstanding the violence of the attack, and the rapidity with which such extremely grave symptoms were developed, there was no well-marked chill at the outset, and no increase of temperature at any time previous to the slight chill on the morning of the fourth day. The second chill was decidedly more pronounced than the first, and yet the symptoms following it were not in all respects so alarming as at the beginning of the attack. This, I think, is a forcible illustration of how little reliance can be placed upon the occurrence or character of a chill as indicating the beginning or gravity of an attack of this kind, and of how easily one might be misled and valuable time lost. Another point of interest in this case is the fact that, notwithstanding the prolonged constitutional disturbance and the continuance of a moderately high temperature for some time, the secretion of milk was not wholly suppressed throughout the entire attack. The amount of milk secreted was such as to give hope that as convalescence progressed this function might be wholly restored. This, however, was not the case.

Still another feature to which I wish to refer, is the recurrence of the attack. This undoubtedly was due to the sore in the fold between the cervix and posterior vaginal wall being neglected before it was healed. This point is, under existing circumstances, the most difficult of inspection of any part of the vagina. It is also the most difficult to treat and keep in a cleanly condition, and so it is here that re-infection is most likely to occur. Unfortunately a knowledge of this fact does not always prevent its occurrence as in the present instance, but a result such as this should emphasize the necessity of keeping every portion of broken surface under observation until repair has taken place to such an extent as to prevent the possibility of infection taking place.

Another matter worthy of notice in this case is the

particularly loose and flabby condition of the uterus. While this condition, to a greater or less extent, is common to all cases of puerperal septicemia, in this case it was particularly marked, the external os and cervical canal being quite unrecognizable as such and the entire shape of the uterus being lost. The point to which I wish to call attention is that, in my opinion, this condition obtains to a greater or less degree in proportion to the gravity of the attack, and that the earliest indication of improvement is seen in the return of tone to the uterine muscles. The first indication of the uterine muscles regaining tone is seen in an attempt at contraction, which can first be recognized in the rounded outline of the external os. This occasionally precedes but is usually coincident with the first fall in the temperature. I am not aware that this statement has been made by an authority upon this subject; but, from my own experience, I am so convinced of its truthfulness that I have come to estimate the progress of the case, very largely from the appearance of the os and cervix as disclosed by the speculum.

ABDOMINAL HYSTERECTOMY IN THE TREATMENT OF SEPTIC PELVIC DISEASE AND FOR CANCER OF THE OS UTERI.

BY J. C. IRISH, M.D., LOWELL, MASS.

IN the treatment of pus-tubes and other pelvic abscesses, especially when due to an extension from the uterus of septic infection, removal of the tubes and ovaries has failed to cure the patient permanently in quite a large proportion of cases. After the operation the infected uterus has become an entirely useless organ, deprived of the support of the broad ligaments, and sometimes the seat of a permanent septic invasion. In this condition of disease it is without doubt the starting-point of many reflex disturbances.

Deprived practically of all support the uterus becomes displaced, congested, and the source of a very intractable leucorrhea. For these reasons hysterectomy, which adds little, if anything, to the danger attendant upon the removal of tubes and ovaries, is now being quite generally accepted as a substitute for oöphorectomy.

Therefore in the treatment of most of these cases the question of operative procedure is reduced to a choice between vaginal and abdominal hysterectomy. It is to the question of our choice between these two operations, not only in septic pelvic disease, but also in cancer at the mouth of the uterus, that this article refers. My conclusions will be deduced entirely from personal experience with the two operations.

In septic diseases of the uterine adnexa, Péan and his followers do vaginal hysterectomy. Following the lead of the French surgeons, several distinguished American gynecologists are advocating the vaginal operation as preferable to the removal of the infected uterus and its diseased appendages by the abdominal route. The trend of professional favor at this moment in the treatment of these cases seem to be toward vaginal hysterectomy almost to the exclusion of the abdominal operation.

Until the advent of the Trendelenburg table, in cases of cancer of the uterine neck, vaginal hysterectomy was the only operation practically possible. But now in these two widely different diseases, pus-tubes