Chadwick (Jas. R.)

4

Cases of Sporadic Septicemia in Gynecological Practice

BY

JAMES R. CHADWICK, M. D.

BOSTON, MASS.

REPRINT FROM VOLUME IV.

Gynecological Transactions

1880

CASES OF SPORADIC SEPTICEMIA IN GYNECOLOGICAL PRACTICE.

BY JAMES R. CHADWICK, M. D.,

Boston, Mass.

BURDON-SANDERSON defines septicemia as "the aggregate of effects which are produced in the animal organism when putrid matter is mixed with the blood-stream; or, in other words, as a constitutional disorder of limited duration, caused by the entrance into the blood-stream of a certain quantity of septic matter."

This absorption of septic matter has long been recognized in surgery as liable to take place whenever putrid discharges come in contact with denuded surfaces. In obstetrics, this disease is now generally accepted as the pathological condition pertaining to the gravest forms of puerperal disease. The role which it plays in gynecological practice is scarcely less important, though less appreciated. The peculiar conditions which determine its genesis are not fully elucidated, yet the prime requisite is avowedly the contact of septic matter with a surface preternaturally endowed with the capacity of absorption. In the puerperal uterus there always exist, of necessity, extensive surfaces denuded of their natural covering, and hence prone to absorption. Blood-clots, and the frequently retained pieces of placenta and membranes, supply the *materies morbi*. In the unimpregnated organ, tumors, polyps, and epithelial growths, disintegrating, either as a result of nature's processes, or of instrumental interference, often give rise to septic matter, which may be taken up by the raw surfaces over which they needs must pass in escaping from the body.

As the character and symptoms of septicemia, when it supervenes in this class of cases, lack full appreciation by general practitioners, and the necessity of immediate treatment by intra-uterine disinfectant injections is not universally admitted even by specialists, I deem it wiser to present the subject pictorially by recounting the only cases which have come under my observation, than to discuss the topic systematically, especially as that task has been most ably done by Dr. Jenks in the paper to which you have just listened.

CASE I. — *Septicemia from Retained Placenta after Abortion. Recovery.*[1]

Mrs. R. came to me when she was between four and five months along in her second pregnancy, with the story that she had had a sudden severe hemorrhage a week previously. Six days later she came to my dispensary, saying that she had miscarried in the preceding night. On examination the os admitted two fingers, which readily recognized the presence of the placenta. The patient was put to bed and plied with ergot; there was no loss of blood, but after thirty-six hours a dark, offensive discharge began to come away. On the third day the pulse went up to 96, the tongue was coated, the patient was feverish. The abdomen was not tympanitic, or distended; neither was it the least tender, nor was the uterus. I concluded that there was absorption of septic matter from the uterus, and deemed it imperative to remove the placenta without further delay. Accordingly, on March 5, with the assistance of Dr. Bixby, I sought to effect this object with only partial success, for, though the os was widely open, the placenta was so firmly adherent that no force could detach it. My forceps every time brought out their fill of placental tissues, but the mass of the placenta remained. Having by this means removed one half to three fourths of the mass, I was forced to desist, from the failure of the patient's pulse owing to loss of blood. To check further oozing, I injected liquor ferri perchloridi, one part to four of water. This was effectual. On the next day the patient was quite easy till night, when she

[1] This was reported to the Suffolk District Medical Society nearly three years ago, and was published in the *Boston Medical and Surgical Journal*, September 7, 1876, xcv., p. 295.

suddenly had a well-marked chill, followed by headache, malaise, and a pulse of 140. There was still no tenderness or distention of the abdominal walls, or other symptoms of peritonitis or metritis.

I consequently diagnosticated incipient septicemia, due to absorption of the blood-clots formed by the iron, and of the placental fragments. I immediately washed out the cavity of the uterus with a solution of permanganate of potash. This was repeated every night and morning for a week, when the discharges ceased to be offensive. On the day following that on which she had the first chill, the patient experienced at one time a sensation of chilliness. On the following days the pulse gradually fell, the headache slowly subsided, and the retained fragments of the placenta were ultimately discharged. A perfect recovery was ultimately secured.

CASE II. — *Slow Septicemia, following Abortion. Recovery.*

On July 24, 1877, I was summoned by Dr. C. W. Stevens, of Charlestown, in consultation about Mrs. H., a multipara, twenty-eight years of age. He had first been consulted by her two months before on account of a fetid uterine discharge. Discovering that she was three months pregnant, Dr. Stevens diagnosticated the death of the fetus, dilated the cervix with sponge-tents, and withdrew pieces of a decomposed ovum. Considerable hemorrhage persisting, other portions of the placenta were sought and extracted. A slow fever then set in, with rigors and evening exacerbations. As this state continued, with gradually increasing prostration, in spite of vaginal injections of hot water, I was summoned three weeks after the last operation. In the absence of all evidence of inflammatory action in the pelvis, I attributed the condition to septic absorption from the uterine cavity, and recommended intra-uterine injections of a solution of permanganate of potash. This treatment was carried out twice by Dr. Stevens, the second injection being followed by an alarming but harmless uterine colic. The fetid discharge was at once arrested, the fever subsided, and the patient made a slow but perfect recovery.

CASE III. — *Normal Labor at Term, with Perineal Rupture, followed by Septicemia. Recovery.*

Mrs. X. was delivered by Dr. B. F. Davenport, on December 27, 1877. The forceps were applied when the head began to

press upon the perineum, owing to the feebleness of the pains, but, after a few tractions, were removed before the head emerged from the vulva. The placenta and membranes were expelled soon after entire. Examination showed a superficial laceration of the perineum down to the external sphincter ani. On being summoned to operate, I had doubts of its necessity, but finally united the torn edges by two deep wire sutures.

Half a drachm of the fluid extract of ergot was given twice a day, and the vagina washed out thrice daily with a half per cent. solution of carbolic acid, as prophylactic measures. On the morning of the fourth day the lochia was pale, inoffensive, normal. Her condition was in every way satisfactory. During the vaginal injection at 9 A. M., she was seized with a sudden sharp pain in the abdomen, immediately succeeded by a most severe rigor, from which neither hot alcoholic stimulants internally nor the external application of heat to the body and limbs seemed to bring on reaction.

Dr. C. W. Swan, who was hastily summoned in consultation, administered a drachm of tincture of capsicum, after which the rigor slowly subsided, having lasted a full hour. Fifteen grains of quinine were given in a dose. Temperature 105° just after the rigor. Vomiting took place, and caused the expulsion of a blood-clot as large as an orange from the vagina. Much hemorrhage followed.

On reaching the house at 4 P. M. I found the patient unnaturally free from pain or discomfort, considering the severe chill of the morning. There was no tenderness of the abdomen, or in the course of the crural veins; no abdominal distention or pain; no evidence of inflammation of any kind; yet the pulse and temperature indicated systemic disturbance. The perineal wound was clean and united. I ventured the opinion that septic matter had been and was probably still being absorbed and poisoning the blood; further, that the process could be arrested by washing out the cavity of the uterus by a disinfectant solution.

With the assent of Dr. Davenport and Dr. Swan, who had just joined us, I carried a silver male catheter to the fundus of the uterus and injected a solution of permanganate of potash until it issued from the vulva unchanged in color.

At 6 P. M., just after the injection. Temperature 101.8°. Pulse 100.

At 10 P. M. Temperature 99.8°. Pulse 96.

Fifth day, 8 A. M. Temperature 98.4°. Pulse 84.

From this time until she left her bed on the 20th day the temperature ranged from 98.4° to 102.2°, and the pulse from 72 to 100. There were no subsequent chills or other symptoms calling for a repetition of the intra-uterine injections. As a substitute for these, and as probably equally efficient, I suggested a method of administering vaginal injections of the same disinfectant solution, which seems to me deserving of exact description.

With the patient lying upon her side, the solution was ordered to be injected into the vagina with an ordinary syringe and nozzle until the fluid began to ooze from the vulva, the patient was then gradually turned upon her face, while the injection into the vagina was continued. By this plan I believe that the vagina was distended to its utmost, as in the knee-elbow position, while the uterus gravitated into the abdominal cavity and allowed the fluid to flow through the patulous cervical canal into the cavity of the organ with the force of pneumatic pressure and no more. Any air that might thus be forced into the vagina by the syringe would remain in the vagina, and thus the possible danger of its passage into the uterine sinuses be avoided. This method was carried out by Dr. Davenport for several days, during which no further symptoms of septic infection were manifested.

The vaginal injections brought away offensive discharges for two weeks. On the eighth day the perineal sutures were removed and union found to be perfect. The patient left her bed at the end of three weeks, and is now in perfect health.

CASE IV. — *Normal Labor followed by Septicemia with Erysipelas as One Manifestation, and Malaria as a Complication. Recovery.*

Mrs. B. was delivered on September 14, 1878, by a prominent homeopath of this city, after a normal labor of nine hours. The placenta was expelled soon after entire with the membranes. The childbed for seven days was normal, although the patient was much disturbed during this time by an unruly child. On the seventh day she had a severe rigor followed by high fever; the lochia was arrested, as was the milk, which latter had been secreted in moderate amount since the third day. During the ensuing week the temperature ranged from 103° to over 106°, as affirmed by the skilled nurse. There were at no time symptoms of inflammatory action. After a slight remission the fever be-

came exacerbated on the fifteenth day, when erysipelas appeared in the gluteal region. On the twenty-first day there was some tympanites, and so great prostration that the attending homeopath admitted that the patient could not live a week "unless there was a change."

At the suggestion of Dr. H. I. Bowditch, who was consulted, the case was placed in my charge. On October 6 (twenty-second day) I found the patient, aged twenty-three, primipara, extremely pallid, with impaired hearing, freedom from pain, except for tenderness at the parts affected with erysipelas, with temperature 104.6°, pulse 130 feeble, respiration 34; tongue dry and somewhat coated, mind clear. The uterus was well involuted but in dextro-version. There was no evidence of pelvic inflammation. I learned that in the previous treatment no stimulants, special nourishment, or other than homeopathic doses of medicine, had been administered.

This chart shows the range of the temperature, pulse, and respiration until complete recovery on the forty-seventh day after delivery. The treatment consisted chiefly in large doses of quinine, stimulants, beef-tea, etc. The marked remission on the morning of the twenty-third day is probably attributable to the sudden change of treatment, but the system was still too heavily loaded with septic matter to sustain so sudden a rebound from its depressed state. From the twenty-fifth to the twenty-eighth days, however, a marked improvement is made manifest by the chart. This may have been to some extent due to an intra-uterine injection of permanganate of potash, made on the twenty-fifth day because of a sero-sanguineous discharge, there having previously been no lochia for some days, but was chiefly owing to large doses of quinine given through the morning to avert the midday exacerbations of the fever, which were attributed chiefly to malaria, contracted three years since in New York State.

On the evening of the twenty-ninth day a fresh exacerbation manifested itself without apparent cause, and induced me to resort on the next day to disinfectant intra-uterine injections morning and evening, in order to arrest any septic absorption that might be taking place without giving signs. On that day she had a slight chill at five P. M. On the thirty-first day the intra-uterine injection was repeated and again on the evening of the thirty-second day, yet on the three following days the fever ranged higher, despite the continuance of the injections. No intra-uterine injections were given after the thirty-fifth day.

On the thirty-eighth day the temperature was taken immediately after a chill attributed to malarial origin, as were the chills and fever on the fortieth and forty-first and forty-second days; they were treated by increasing the doses of quinine and the stimulants.

On the forty-first day the erysipelas finally disappeared from the left foot, it having gradually spread downwards from the gluteal regions, where it was located when I took charge of the case.

I have purposely abstained from a wearisome recital of the day to day details of treatment, and will simply say in conclusion that reliance was chiefly placed in quinine, which was given in large amounts throughout, on the forty-second and forty-third days between forty and fifty grains having been administered in the twenty-four hours. Stimulants were given frequently and in large quantities. Beef-tea was given both by the mouth and by the rectum.

Although the erysipelas may be regarded as an effect of the elimination of septic matter through the skin, that inflammatory process may in itself account for some degree of the fever.

With ordinary tonic treatment the patient has since been slowly regaining her strength and is now, a year later, in perfect health, and four months pregnant.

CASE V. — *Submucous Fibroid Tumor of the Uterus. Attempt at Enucleation. Septicemia. Recovery.*

On March 28, 1877, Mrs. B., of South Boston, aged forty-two years, applied to me for the relief of menorrhagia. She had had two children and one miscarriage. For five years the menstrual flow had been profuse, and been succeeded by a serous discharge which lasted for a week.

The uterus was found to be uniformly enlarged by a fibroid tumor, so that the fundus rose to the navel. The cervix was hard and prominent. The uterine sound passed six inches, its end then being felt through the fundus and abdominal walls to the right of the tumor.

I diagnosticated a fibroid, either submucous and presenting by a large extent of its surface to the uterine cavity, or polypoid.

Twenty-four drops of the fluid extract of ergot, three times a day, were prescribed,

On April 20, the patient reported that the loss of blood had been greater than before; the tumor seemed smaller.

On May 13, as the hemorrhage was increasing, and the patient's strength beginning to fail, I dilated the cervix with spongetents, and, with the assistance of Dr. G. H. Lyman, satisfied myself that the tumor was of the submucous variety. The capsule was accordingly incised, and an attempt made to enucleate the mass. This proved not to be feasible, but its tissues were extensively lacerated and disintegrated, in the hope that nature would continue to complete the process. The hemorrhage became so great as to necessitate the injection of a strong solution of liquor ferri perchloridi fortior.

The patient rallied from the operation speedily, and had no bad symptoms until the third day.

On May 16, at 12 M., her pulse and condition were normal; there was no occasion for taking the temperature.

At 4 P. M. she had a sudden severe rigor. At 9 P. M. I found the pulse 110 and the temperature 105.6°. The abdomen was very little distended with tympanites, but not tender, although the womb was slightly so. There was headache and precordial distress. Recognizing the supervention of septicemia, and the gravity of her condition, I immediately carried a silver catheter into the uterine cavity and washed it out repeatedly with a solution of permanganate of potash, until the brilliant color of the returning fluid announced the complete disinfection of all parts of the cavity reached by the fluid.

On the following morning she had a slight chill; pulse, 125; temperature, 103.5°; the intra-uterine injection was repeated. In the evening, pulse, 100; temperature, 100°; injection.

I will not weary you with the day to day records of the case. There was much offensive discharge, containing shreds of tissue, for several weeks. The temperature rose and fell for several weeks, being steadily combatted by intra-uterine disinfectant injections, quinine, stimulants, etc., and did not return permanently to the normal until the sixth week.

The patient made a good recovery, and has had no further hemorrhages or bad symptoms, but I have been unable to detect any diminution in the size of the tumor in consequence of the sloughing.

These cases have certain characteristic features in common. In all it was known that the uterine cavity presented extensive denuded or wounded surfaces, in direct contact

with which were, or might have been, tissues presumably undergoing decomposition. The first symptom in all was a severe chill, supervening suddenly upon a state of apparent perfect health, not attended or followed by pain, vomiting, or other sign of inflammation ; yet in all, a most critical condition of the general system was indicated by high fever. To me, the most characteristic feature of septicemia is the abnormal insensibility to pain, taken in conjunction with a very high fever. This was manifested in all of my cases.

Evidence of the presence of septic matter in the uterine cavity from offensive lochia is valuable when existing, but its absence has repeatedly been shown to be delusive if allowed diagnostic weight.

Reviewing the above cases *seriatim*, we recognize certain conditions. In Case I., there was evidence of incipient septicemia from decomposition of an adherent placenta before the attempt at its removal ; the injection of perchloride of iron to arrest hemorrhage at the time of the operation ; an absence of ominous symptoms for twenty-four hours when the patient had a second chill, followed by fever ; the only therapeutic measure adopted was that of repeatedly rendering inert, by disinfection, the only source of septic matter, namely, the sloughing remains of the placenta, and the blood-clots formed by the iron. The success of the treatment fully substantiates the correctness of the diagnosis.

In Case II., we see that the greater portion of an ovum, only three months advanced, was removed by two operations ; hence that probably the amount of septic matter present was small, and the extent of the absorbent surfaces limited, for which reasons the system was less rapidly charged with septic matter, so that a less acute form of septicemia ensued ; yet the persistent absorption of septic matter tended to undermine the system and threaten a fatal result, until disinfection arrested the process and saved the patient's life.

In Case III., there was no reason to apprehend the development of septicemia, yet the symptoms pointed so

clearly to that disease, that the appropriate treatment was adopted and proved successful.

In Case IV., the diagnosis is less clear, owing to the imperfect data obtained as to the course of the disease during the first fourteen days of its presence, and to its complication with malaria. There was no reason to suppose the presence in the womb of disintegrating tissues or clots as a *materies morbi*, yet one of the accepted predisposing causes of septicemia — namely, mental worry — existed to an extreme degree ; moreover, had the initial chill been of malarial origin, I think it would have been followed by others periodically, whereas there was no such recurrence until the thirtieth day — a period of twenty-one days. In addition, I should not expect so complete prostration to result from malarial fever, even in the puerperal period. Finally, the appearance of erysipelas on the fifteenth day, post partum, a well known effect of the elimination of septic matter through the skin, gives further testimony in support of this diagnosis. As there was every reason to suppose that the uterine cavity no longer contained decomposing matter on the twenty-second day, when I took charge of the case, there seemed no reason for the use of disinfectant injections, the only indication being to sustain the forces of nature in their effort to eliminate the poison already absorbed. Although the recurrence of the high fever, later, induced me to insure the patient by disinfection of the uterine cavity and its contents against the possibility of fresh blood poisoning, yet I doubt whether that measure had much influence in determining the favorable result. I am, however, convinced that the long and nearly fatal illness might have been checked at the outset by intra-uterine disinfectant injections.

In Case V., a large fibroid tumor had been lacerated and blood-clots formed in the uterine cavity by perchloride of iron, so that septic absorption was a process greatly to be feared, the symptoms were characteristic, and the indications for treatment unequivocal. The amount and firm structure of the sloughing tissues protracted the septic ab-

sorptions for six weeks, yet a persistence in the use of disinfectants was unfailing in its curative effects. At one time in the course of the disease, my attention was drawn to the fact that a chill for several successive days occurred immediately after the intra-uterine injection. I suspected that the irritation of that procedure was sufficient to evoke a chill in a system so thoroughly charged with pyretic material, which view seemed to be corroborated by the absence of chills for three days upon intermission of the injections. The subsequent recurrence of the chills and other symptoms of septicemia, however, necessitated a fresh resort to disinfection by the old method without again, however, evoking the chills.

A few words with regard to the disinfectant. I give preference to permanganate of potash, and always carry a small bottle of the crystals in my bag. A few crystals are simply sprinkled into a basin or cup of hot water and stirred until the solution is of deep claret color, no more exact estimate of its strength being required. It is equally efficient with any known disinfectant, and has one great advantage over all others, in that it gives evidence by a change in the color of the solution from a deep claret to a dirty yellow, so long as there is putrid matter to be rendered inert; in other words, we are thus informed when we may safely desist from the operation. I have, moreover, noticed a marked astringent effect upon the vaginal walls which has led me to infer that besides rendering the putrescent matter inoffensive, it might also so astringe the denuded surfaces in the uterine cavity as to deprive them, for a time, of absorbent properties. Carbolic acid in solution is objectionable, because, in several instances, it has been shown to have been absorbed from the uterine cavity with the effect of acting as a virulent poison upon the general system and causing death. The potash has one disadvantage, that of staining the linen; this I deem a small matter in so critical an emergency, and may be specially guarded against.

The lesson that I wish to inculcate by these cases is this: (1) that after all processes — whether natural or artificial

— which leave denuded surfaces in the cavity of the womb, there is danger of blood poisoning; (2) that if this poisoning be by septic matter the source of the infection may be reached by intra-uterine injections and rendered inert by disinfectants; (3) that if this be done early in the disease, the system will not have been charged with more morbific matters than it can eliminate, and consequently that the fatal result may be thus averted.