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Puerperal Fever

an

Essay in Practical Medicine.

by.

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Prefatory Note.

The writer desires it to be understood that the following observations are written from the stand point of a general practitioner of medicine. There are, therefore, no descriptions of the morbid anatomy of Puerperal Fever, and the references that are made to Pathology are general.

For the sake of brevity the symptoms of Puerperal Fever are described as shortly as is consistent with clearness.

I

The subject of Puerperal Fever is one of great interest to the general practitioner of medicine. The value of the lives which are endangered by the disease, the circumstances under which it takes origin, and the dreadful nature of its cause all combine to lend it a peculiar, and, to the medical practitioner a more than usually onerous importance. In the most exact sense of the word the physician feels his responsibility while attending a patient who is in danger from one of the several forms of Puerperal Fever. In this case of no other disease is he so apt to blame himself as in this. He will recall any trifling deviation from the strict performance of his various duties, and worry himself generally with doubts as to the fashion in which his work has been done. In many cases he will receive from the friends of his patient a great deal of undeserved censure, and in a few cases he may become the object of a bitter persecution.

These Things which are the experience of every physician who is engaged in the general practice of his profession, are hard to bear, and yet their occurrence is not altogether without reason of a superficial sort. The physician when summoned to a case of labour, is not asked to see a patient, or sick person in the ordinary acceptation of the word. In such a case it is his duty to be careful that nothing shall interfere with the natural performance of a strictly physiological process, and this being so any deviation from the normal course of events during parturition, and the subsequent puerperal period, is by the ignorant and thoughtless laid to his charge. This is more certainly the case when Puerperal Fever occurs after a severe, and instrumental delivery, or when in child bed a patient is attacked by a zymotic disease such as Scarlet, or Enteric Fever. The writer of these observations does not by any means believe that cases of

A System of Midwifery - William Leishman M.D.
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Puerperal Fever arising from carelessness, or lack of skill on the part of the physician, are common in these days, on the contrary he is of the strong opinion that such cases are rare in the extreme. Apart, however, from the question of immediate causation it has been well said concerning this disease that "there is in the whole range of obstetrics no subject which the writer or teacher approaches with so profound a conviction of the difficulties to be encountered as that group of affections to which the term Puerperal Fever has with a somewhat loose signification been given," and to this it may be added that there is certainly no other disease which is looked upon with more apprehension by the general practitioner of medicine.

II

The term Puerperal Fever is convenient, but not strictly accurate in a scientific sense. It does not indicate a specific blood disease, originating in a special morbid material, and presenting

What the term Puerperal Fever means

in its course a regular and well defined series of symptoms. In the older sense of the term it was used to indicate a disease peculiar to the puerperal period, but its use in this fashion is now held to be misleading, and in the last revision of the nomenclature of disease compiled by the Committee of the Royal College of Physicians the term is condemned. It includes however the various grave pathological changes which may interrupt the normal course of events during the puerperal period, and in that sense it is here used. In its widest sense the term may be said to indicate abnormal temperature after parturition, but custom has confined its use to those cases in which an unmistakable pathological change occurs. There are many cases in which the temperature rises after child birth without any marked pathological change, and apparently unattended by any danger to the patient. An overflow of milk, the reaction after a severe and prolonged labour

What Pathological conditions are included under the term Puerperal fever.

or a chill acting upon a disordered nervous system may give rise to pyrexia, and even pyrexia of such a degree that, if it occurred in the course of a specific blood disease, would be at once reckoned dangerous. There are cases of fever occurring during the puerperal period, but which are not looked upon as Puerperal Fever in its dangerous and fatal sense. The careful physician is however, always anxious for the safety of his patient while the temperature remains above normal. It is not a very uncommon experience of medical practice to find a trifling ailment of the puerperal period paving the way for a more serious disorder.

III.

It may be well, before proceeding further in the consideration of the subject, to define as concisely as possible what the Writer understands by the term Puerperal Fever. In its gravest sense the term of course indicates Pyaemia of varying degrees

of severity. Apart, however, from Pyaemia, the term indicates in the writer's opinion a disease or class of diseases having a septic origin. A distinction has very recently been made between septic and putrid infection, and to this distinction another reference will be made in the following observations, but at present the word septic is used to indicate that, in the writer's opinion, grave pathological changes occurring during the puerperal period are due to the absorption from the surrounding atmosphere, from bed clothes, and body linen which have become soiled, from the hands or dresses of attendants, or from obstetrical instruments, of a morbid material either special, or merely pathogenetic. These pathological changes are indicated by the following terms:- Pyaemia and Septicaemia. Peritonitis (general and local). Pelvic Cellulitis. Metritis. Phlebitis. These with their complications, and sequelae constitute, in the writer's opinion, that group of "affections", to use words already quoted, to

which the term Puerperal fever, has with a somewhat loose signification, been given. It may be urged that Pelvi-Peritonitis, and Pelvic Cellulitis are merely local affections, and are due rather to the violence of the uterine efforts, and long continued pressure than to the absorption of septic material. In a certain limited sense this view of the matter may be accepted. Any solution of continuity of tissue however slight will give rise to a degree of hyperaemic congestion varying in severity with the amount of damage done to the part injured, but such a congestion if uncomplicated will speedily subside. This fact which is a common experience of surgical practice is easily demonstrated in the practice of midwifery. In the majority of cases in which the medical practitioner has to use efforts of a most exhausting character in order to effect delivery, and in which laceration of tissue is inevitable no ill effects follow provided that even the most ordinary precautions are taken to ensure cleanliness.

Etiology of Puerperal Fever.

1. A System of Midwifery. 4th Edition Vol II page 792
2. Brit. Med. Journal 1887 Vol. II page 1036

Dr Barnes' Autogenetic Theory

There must be something either in the condition of the patient, or her surrounding circumstances or in a combination of both which is the cause of serious Puerperal disease.

IV.

There is still considerable difference of opinion as to the cause of Puerperal Fever. In many cases an ostensible cause is not easily found, while in a few cases it is altogether beyond discovery. The majority, the great majority of observers are agreed upon one point - that serious puerperal disease is of septic origin. "Of all the modes in which a dangerous fever may be generated in a puerperal woman that by means of septic absorption, for which her condition at the moment offers peculiar facilities, is we believe decidedly the most frequent." [1] Dr Barnes [2], however, while fully believing in the septic origin of Puerperal fever in many cases, has stated his the opinion that the disease in its simplest form may be purely autogenetic, and may take origin in conditions which

exist solely within the patient, and which are independent of extrinsic influence. This theory is one which, if it could be accepted, would explain the origin of many cases concerning which no other explanation is possible. It does not seem, however, to the writer to be in any sense tenable. It is a well understood, and long established fact in medical practice that the tendency, of every vital process even amid the gravest pathological changes, is towards the normal, or healthy state, and that the stream of this tendency is turned aside not by something within the patient, but by surrounding, and injurious circumstances. In the case of the puerperal woman the physician has not, as has already been stated, to deal with the facts of a disease, but with the orderly facts of a natural process. It is impossible to imagine any condition arising altogether within the patient which would cause a serious pathological change. The puerperal woman

is certainly in a condition which favours the onset of disease from without, but even under the most depressing or unhealthy circumstances she is not in a condition in which "self-infection" pure and simple is possible. Apart from this purely autogenetic fever Dr Barnes enumerates other conditions which, without the introduction of septic poison from without, may give rise to Puerperal Fever. Chills, dietetic errors, decomposition of lochia, fragments of the placenta or decidual shreds retained and decomposing in the uterus, and the decomposition of a dead foetus - these and other conditions are given by Dr Barnes as causes of Puerperal Fever without the intervention of a septic poison. To such cases also he gives the name autogenetic or autosepsis. Dr Barnes' opinion on such matters is entitled to the very greatest respect but the experience of the writer leads him to take a different view of the etiology of Puerperal Fever. In the

1.

2. Germain Cueto genetic theory

various cases of Puerperal disease which have come under the writer's observation during the last eleven years in which he has been engaged in general medical practice not one could be described as autogenetic, and in those cases to which reference will be made, in which the onset of disease was looked for by reason of the retention of placental fragments or decidual shreds measures were taken, not to counteract a ~~developed~~ developing a supposed poison within the patient, but to prevent if possible the entrance of a poison from without.

V

The theory of Dr Barnes which would explain certain cases of Puerperal Fever as being autogenetic does not admit that the entrance of pathogenic organisms from the outside are necessary. Such a theory may be described as the autogenetic theory pure and simple. There is however, another theory which very recently has found

favour among continental observers, and to this theory the term self-infection has also been applied. The use of the term in such a connection is in the writer's opinion unfortunate and misleading. The theory supposes the existence of micro-organisms in the vagina before delivery, and that in certain cases of Puerperal Fever these micro-organisms are the cause of the disease. It has been proved by various German observers that the vagina at all times contains micro-organisms, but it has not been proved that these germs are of a pathogenic character. These micro-organisms would undoubtedly be discoverable in every patient, and yet there is not, as a rule a high percentage of puerperal disease. It would be necessary if such a theory were adopted to take very exact measures for the purification of the vagina not only immediately before delivery, but for several days before labour set in. It does not seem to the

Theory of Septic Poisoning

writer that such a theory is worthy of discussion. There is certainly nothing in the history of Puerperal Fever, or in the experience of careful observers to warrant its adoption by the medical profession.

VI

The theory of the etiology of Puerperal Fever which seems to the writer the most reasonable is that which supposes the introduction of a poison from without. This poison may gain an entrance immediately after delivery has been effected. It is probable that the poison gains an entrance into the vagina within the first forty eight hours. This poison is not specific in its character. It may be the product in the first instance of simple decomposition, or putrefaction; it may be the poison of a zymotic disease, or it may be the poison of Pyaemia, a Physiperlas conveyed from another patient. It will be convenient here to discuss the distinction that has been drawn, within

1 The word intoxication has been used in this connection, and is perhaps more accurate than infection.

2. A Manual of General Pathology. P. 480. Joseph Frank Payne M.D. Lon. FRCP.

recent years between putrid and pyaemic infection. The distinction is an important one when we consider the supposition which has been advanced to the effect that putrid infection gives rise to a pathological condition to which the term saprаemia has been applied, and which is a form of poisoning. "It does not", however, "pass from one person to another and therefore is not a specific infective disease as here understood"[2]. On the other hand the products of pyaemia are recognised as being distinctly, and dangerously infective. This distinction has not as yet been clearly proved, but there is no doubt that cases of puerperal disease have occurred which, while they presented symptoms that indicated a general disorder of the blood, were in a sense benign in their character and course. It is not unreasonable to suppose, however, that the symptoms produced by simple decomposition might very readily be transformed into the more formidable symptoms

Predisposing Causes.

of Pyaemia.

Under the most favourable circumstances a woman while in child bed is peculiarly liable to the attacks of disease, and the puerperal condition may be placed at the head of the predisposing causes of Puerperal Fever. The nervous system is for a period, that varies greatly in length, in a state of disorder. The organs by which effete matters are discharged from the body remain for a time inactive. A large surface of mucous membrane is exposed more or less to the action of any morbid or disease producing material that may exist in the vicinity of the patient. All these conditions combine to render a patient liable to the attacks of disease. To this the simplest but most important of all the predisposing causes of Puerperal Fever may be added mental distress of any kind, errors in diet, imperfect excretion by the bowels and kidneys, chills and over, or

rather unusual exertion on the part of the patient. Then the facts of the labour, and the mode of management of its various stages furnish other, and important predisposing causes. A long continued labour complicated by the early escape of the amniotic fluid. Lacerations of every kind and situation. Retention of placental fragments, and decidual shreds, and severe hemorrhage. These are the more important of the conditions which predispose a patient to take Puerperal Fever. Dr Barnes has stated that the strumous diathesis, and other general morbid conditions are causes of what he terms auto genetic fever, and it is not unreasonable to suppose that a morbid condition of the blood before parturition would render a woman liable to the attacks of disease during the puerperal period. The writers experience of midwifery does not, however, support this view. In his experience strumous, and Phthysical patients make fairly good recoveries after child birth,

The Exciting, or Immediate Cause.

and of the various cases of pregnancy complicated by chronic renal disease none had any puerperal trouble.

VII

The exciting or immediate cause of Puerperal Fever is in the writer's opinion essentially Septic, and is absorbed by the patient from the ~~outside~~. The precautions which are now taken to prevent the onset of the disease all imply the existence of a poison outside of the patient. These precautions which will come under discussion when the treatment of Puerperal Fever is under consideration, may be roughly divided into two classes:- precautions which are intended to render the surroundings of the patient as nearly aseptic as possible, and precautions which are intended to prevent the infection of the patient by the ~~entrance~~ contact of micro organisms with anything in connection with the patient which is liable to decompose and become septic. When used in relation to the etiology of puerperal disease the word Septic has a very wide and general meaning.

It includes every possible source of infection, and in the case of a puerperal woman the means by which she may become infected are certainly many in number. For the sake of convenience they may however be put under three general heads:- Contamination of the atmosphere surrounding the patient, the decomposition of the lochia, or retained fragments of the placenta or membranes, and the absorption of zymotic poison more especially that of Scarlet Fever, and Erysipelas. As a consequence of the two first causes of puerperal disease the patient is attacked - putting local affections aside for the moment - either by pyaemia or septicaemia, and as a consequence of the third by Scarlet Fever, or any other zymotic the symptoms and usual course of which are however much altered and at times concealed by the puerperal condition. Scarlet Fever has for many years been recognised as a disease especially dangerous to pregnant and puerperal women, and the question as to whether it produces in a

1. Transactions of the Obstetrical Society
London 1888

Symptoms of Puerperal Fever

patient who has been recently confined Septicaemia or merely Scarlet Fever is not yet quite settled. The balance of opinion is however, on the side of those observers who maintain with Dr Cayley that "Scarlatina was no more capable of directly producing Septicaemia, than Septicaemia was of producing Scarlatina" This view of the matter is doubtless the correct one, but it must be added that very few, if any cases, of puerperal Scarlatina run a normal course. To this however, the writer intends to refer when speaking of the symptoms of Puerperal Fever.

VIII

In speaking of the symptoms, and general pathology of Puerperal Fever the chief difficulty is the number of forms which is included under the title. There are however, certain well defined pathological conditions of the puerperal period as the writer has already indicated, and a description of these conditions may be taken as a representation of the disease. It would serve no useful purpose to

Puerperal Pyaemia

separate Pyaemia and Septicaemia, and in spite of the distinction which has been drawn between Septic infection and putrid intoxication or Sapaemia the writer is of the opinion that these pathological conditions differ only in degree and not in kind. In both conditions the blood of the patient is poisoned.

In detailing the symptoms of Puerperal Fever the writer prefers to begin dealing first with that type of the disease with which Custom has most closely connected the name, and which is the type that prevailed in the epidemics of the past - namely the Pyaemic. In the very worst cases there is usually little or no inflammatory congestion of the peritoneum cellular or connective tissue or of the uterus itself. There is doubtless before death grave alteration of tissue but as a rule the patient does not indicate by any complaint of pain the presence of frank inflammation. Such cases which are almost inevitably fatal are becoming happily becoming rare. In the writer's experience there is only one case

of undoubtedly ~~fatal~~ pure pyaemia. As this case was an exceeding typical one it may be used now for the purpose of illustration. The patient, a multipara, was confined on December 15th 1884. The labour was a very rapid one, and was under the care of a neighbouring practitioner who was kind enough to act in the writer's absence. The patient remained well during the first three days of the puerperal period. On the fourth day she had a slight feeling of uneasiness over the lower part of the abdomen on the right side, and was unable to pass water. On examination no matting of the cellular tissue could be discovered. There had been no rigor, and the patient, an uncomplaining woman, had no anxiety as to her condition. The temperature on the fourth day was 101°6. The case was apparently one of a trifling character. The local affection was slight, and the general condition of the patient did not indicate danger. On the fifth day the patient was more restless, and

complained of headache, and thirst. She was able to pass water however, and had no abdominal pain. Her tongue had become foul, and brown, but was not markedly dry. The lochial discharge was scanty, and foetid. The patient's face had become anxious, and haggard, and by her words she betrayed great concern as to her condition. On the sixth day her state was desperate in the extreme. She lay constantly on her back. Her pulse which had hitherto remained fairly good had become extremely rapid, and diastic in its character. Diarrhoea had set in, the stools being dark in colour, and most offensive. Her tongue, in spite of the free administration of stimulants, was perfectly dry, and brown. Her teeth and lips were covered with sordes, and she had a difficulty in swallowing which in all likelihood was due to an aphthous condition of the throat. On this the last day of her life the patient had absolutely no abdominal pain. She died in the evening of the sixth day after confinement. In this case

the cause of the disease was easily found. The woman who presumed to act as nurse had carefully stowed away underneath the bed all the foul linen that had been removed from the patient during the first three days, and from which a most offensive odour proceeded. This case seems to the writer to have been one of pure and simple Pyaemia, and had the patient lived long enough secondary affections of pus would doubtless have appeared. In this case had a post mortem examination been made it is probable that in spite of the absence of pain the peritoneum, and perhaps other serous surfaces would have been found in a necrosed, or gangrenous condition, pus would have been found in the veins, and probably thrombi in various parts of the venous system. Such a case especially in the terrible rapidity with which it came to the fatal conclusion bears out the warning contained in the remark "that it need scarcely cost us a moment of surprise when we find

1 A System of Midwifery. Leishman
4th Edition Vol. II page 801

Puerperal Peritonitis
Pelvic Peritonitis
Pelvic Cellulitis

2. Note in Brit. Med. Journal March 1st 1890

the local inflammations of the puerperal state blazing out with a violence which defies extinction, and rapidly assuming the asthenic or adynamic features which are held to be characteristic of the most fatal form of Puerperal Fever.

IX

In the majority of cases of Puerperal Fever the peritoneum becomes inflamed, and it has been doubted by some whether a case which presents symptoms of peritonitis, and of nothing else should be included under the term. The tendency in these days, however, is to look upon such a condition as having a septic origin, and Dr Braun of Wurzburg has by experiment shewn that the streptococcus contained in peritoneal fluid during puerperal peritonitis is septic. The subject of the part played by micro-organisms in the etiology of disease is a point of much dispute, and the conclusions arrived at by one observer are so speedily overturned by those of another that it is not an easy matter to decide which

is correct. Septic absorption is however the most probable cause of puerperal peritonitis, and as in many cases it exists as a complication of pyaemia or septicaemia it is the wisest plan to treat it on the same principle.

As a rule an attack of peritonitis comes on within the first five days certainly before the end of the first week after delivery. In the winter's experience the earlier the appearance of the disease the more severe is its character. The patient is seized with a rigor, complains of headache, and pain in a certain portion of the abdomen usually in one or other of the iliac fossae. The pain, unless the disease be counteracted speedily, increases, and is felt over a larger portion of the abdomen which becomes tumid. The bowels as a rule are costive, but in certain cases, and especially those of a distinctly pyaemic character diarrhoea may supervene. As the case proceeds the abdomen becomes more swollen and is tense, and acutely painful to the touch. In certain cases the coils of intestine

may be noted so greatly are they distended in part by wind. The patient cannot bear the weight of the bedclothes - a most characteristic sign of acute peritonitis - but lies with her knees drawn up. The pulse of the patient is rapid, small and hard, and is peculiar to peritonitis. The temperature is usually high from the onset of the disease. In the cases of puerperal peritonitis which have come under the writer's observation the temperature ranged from 101° to 104°. Recovery is usually slow, and as a rule the patient for some considerable time suffers from uneasiness in consequence of the lymph, which was effused during the acute stage, glueing the peritoneal surfaces together. Should the case end fatally the patient usually exhibits before death many of the symptoms which are peculiar to the worst forms of puerperal pyaemia

It will be proper here to speak of the more circumscribed form of peritonitis which is known as Pelvi -

Peritonitis, and of Pelvic Cellulitis. It is not an easy matter to distinguish between these pathological conditions, and indeed it is doubtful if they exist separately. In the case of Pelvi-Peritonitis the portion of peritoneum involved is usually that part which invests the uterus on either side, but the whole peritoneal investment of the uterus, broad ligament, fallopian tubes, and ovaries may be more the seat of inflammatory congestion. When the inflammation is thus limited to certain portions of the peritoneal sac cysts may form which are filled with serous or purulent fluid. The symptoms are those of general peritonitis modified by the local nature of the disorder. On the question of Pelvic-Cellulitis existing as a distinct pathological condition, or in combination with Pelvi-Peritonitis the writer believes that the latter view of the question is the correct one. There is very little cellular, or connective tissue about the uterus, and it is not unreasonable to suppose that

Metritis and Uterine Phlebitis

when
While the cellular tissue is congested, the adjacent peritoneal surface is also inflamed. The important point, however, in connection with Pelvi-Peritonitis, and Pelvic Cellulitis is the fact that during the course of these affections an abscess may form. The formation of an abscess in such a case is greatly to be dreaded, and the patient is always in danger until the pus is discharged. In one very severe case which came under the writer's observation an abscess formed deep in the right iliac fossa, and burst, most fortunately, into the posterior cul-de-sac of the vagina. In the case of this patient both Pelvi-Peritonitis, and Pelvic Cellulitis were present.

X

The writer has seen no case which could be described as Metritis pure and simple. Such cases have doubtless occurred, and it is probable that in cases of Pyaemia, or Septicaemia complicated by peritonitis there will to some extent be inflammation of the Uterine

tissue itself. It is the least common of the various types of Puerperal fever. Of Uterine Phlebitis the writer cannot speak from practical experience. In one case of Puerperal fever which came under his observation. The symptoms resembled those which are said to be present in Uterine Phlebitis. The patient, a primipara, was confined on November 22nd 1883. Delivery was effected by means of the long forceps. She remained well during the first five days, but on the sixth she had a rigor, and complained of abdominal pain. ~~On~~ ~~working~~ On examination the fundus which had not disappeared was painful to the touch. On examination by the vagina it was found that the os uteri, and cervix were painful, and congested. One peculiar feature in the case of this patient was her mental condition which was most seriously disordered. The milk left the breasts, and the lochia became scanty After having been in this condition for a couple of days the patient com-

Connection between Zymotic disease and Puerperal Fever

plained of her right thigh being useless. It was found that the femoral vein was inflamed, and evidently in state approaching thrombosis. The patient's general condition at this time was very serious, and yet there was no peritonitis, and no pain in the abdomen, except over the fundus uteri. Suppuration rapidly supervened, and two large, and diffuse collections of pus formed. These were opened, and the patient after along, and serious illness recovered. This case seemed to be one in which Uterine Phlebitis was the most reasonable diagnosis.

XI.

Before proceeding to speak of the treatment of Puerperal Fever the writer desires to make a few observations on the occurrence of a zymotic disease during the puerperal period. Of all the zymotic diseases Scarlet Fever is the one which is looked upon with the greatest apprehension for the safety of his puerperal patients by the

general practitioner of medicine. For many years it was supposed that Scarlet fever in a puerperal woman assumed the form of Puerperal, and not Scarlet fever, but this view of the matter has been abandoned. There are many circumstances, however, which render the diagnosis of Scarlet fever in the puerperal woman difficult, and even at times impossible. In two cases of puerperal Scarlet fever which came under the writer's observation, both of which happily recovered, one only was diagnosed early. In the case of the other the nature of the patient's ailment was made plain when She desquamated from head to foot. In the case in which an early diagnosis was made the rash was present only in patches, and was almost altogether confined to the posterior aspect of the body. The throat affection was slight, and the tongue was by no means characteristic in appearance. In both cases the symptoms resembled those of Puerperal fever of the

milder pyaemic form. In another case in which the writer is still in doubt as to the nature of the disease the patient shortly before delivery had been exposed to the poison of Enteric Fever. Reference has already been made to this case by the writer when speaking of the formation of abscess in cases of Pelvi-Peritonitis and Pelvic Cellulitis. Before the abscess formed the patient had been ill for more than a fortnight. Diarrhoea was persistent, and the pain was always experienced in the right iliac fossa. No spots could be detected, but for the purpose of diagnosis in the rash of Enteric Fever is not of the first importance.

It may be taken as a proved fact that Scarlet Fever, and the other Zymotic diseases are the same in their essential character in puerperal as well as in other patients. ~~This~~ While this is admitted it must also be ~~not~~ said that the symptoms of these diseases are greatly altered, and at times concealed by the

Treatment of Puerperal Fever.

condition of the puerperal patient.

XII

The subject of the treatment of Puerperal Fever is one of the most important that can engage the attention of the medical practitioner. There is certainly no other class of cases in which treatment, energetic, and intelligent, is of so much value. In grave puerperal disease there is no time to be lost in arriving at conclusions as to the nature of the case, and its proper treatment. Any delay is fatal to the patient especially if the disease be of a pyaemic nature, and yet every case demands special treatment, and there are no hard and fast rules to guide the practitioner except those elementary principles that govern the treatment of all disease. The treatment of this disease may be divided, as all treatment may be divided, into Prophylactic, and Curative. It is the purpose of the writer to discuss the latter first.

Curative treatment.

General rules.

A patient, who in child bed is seized with any illness, is always an object of great concern not only to her medical attendant, but also to her friends. The first point to be gained in the treatment of puerperal disease is that the patient shall be kept quiet. This in the face of the natural anxiety of friends is sometimes not easily obtained, but obtained it should be at all hazards. The second point is that the patients surroundings shall be kept as free from the products of decomposition as possible by proper ventilation. Food of an easily digested character must be given, the functions of the bowels, the kidneys, and the skin must be maintained, and sleep if possible must be secured to the patient by means of sedatives. These are rules which are in use in all cases of disease. They are, however, especially valuable in cases of puerperal disease.

When a patient is attacked during the puerperal period by symptoms of septicaemia the medical attendant will, while treating the more urgent symptoms, endeavour to discover the cause of the disease, and remove it if possible. It may be due as has been already said to an atmosphere rendered poisonous by contamination with sewer gas, and in this connection it may be noted that Dr W. S. Playfair in the Lancet of Feb. 5th 1887 has placed on record several very striking cases in confirmation of this view. In such a case removal of the patient from the infected room would be the most important part of the treatment. Soiled bodyclothing, a bed saturated with decomposing discharges, and foul clothes lying near, or in the same room with the patient are undoubted causes of Puerperal Septicaemia. In the only fatal case of Pyaemia in the writer's experience the poisoning of the patient was certainly due to the decomposition of the lochia

stained cloths which were kept underneath her bed for three days. In this case the cause was removed but too late to save the patients life: The retention of placental fragments, and decidual sheds are fruitful causes of puerperal disease, and measures should be taken for their removal or expulsion as soon as possible. When symptoms of Pyaemia arise in consequence of the retention of a fragment of the placenta the patient's chances of recovery are slight if the uterus *retain for any length of time the decomposing mass. The administration of Ergot in such cases is clearly indicated, and the writer has been in the habit of combining it with Nitro-Muriatic Acid. The treatment adopted to prevent the decomposition of retained placental fragments, and sheds of membrane will be discussed under Prophylactic treatment. Whatever treatment may be adopted the first and most important step is the removal of the cause.

Stimulation by means of alcohol.

1. Arch. Exp. Path. Pharmakol. Leipzig 4th Ed. Vol. 4 page 818

When a patient is attacked by the worst form of Puerperal fever the treatment must be directed in such a fashion as to maintain the patient's strength and if possible allow of the elimination of the poison. Unlike the pyaemia of surgical practice puerperal pyaemia even of the most type is by no means hopeless. In the treatment of such cases the writer places the greatest confidence in stimulation by means of alcohol. "No method of treatment is more valuable than this. They are (stimulants) in the first place powerful antipyretics, and we have often seen them produce a marked diminution of temperature ——— and in the later stages, direct stimulation tends to sustain the waning powers while the process of elimination of the septic material is being effected by nature." The stimulants which the writer prefers are good whisky and brandy. The dose of an alcoholic

stimulants, and the frequency of its administration should be carefully regulated in order that it may be intelligently increased or diminished as the necessities of the case demand. The indications for the use of stimulants are a failing pulse, high temperature, and a dry typhoid tongue. It is well not to wait, however, until these indications are present in full force before making use of stimulants in Puerperal Fever. The writer is in the habit of beginning at once whenever the patient is taken with the disease. By the early use of stimulants the patient may be prevented from drifting into the typhoid condition which is so indicative of danger.

In cases of septicaemia in which the peritoneal complication is not marked the drugs which the writer prefers are Quinine, Digitalis combined with diaphoretics and diuretics, and the mineral acids. To these, when peritonitis is the leading symptom, may be

The following are the formulae which the writer makes most frequent use of in the treatment of Puerperal Fever.

1. In the asthenic or adynamic type

1. Rx.

Tinct. digitalis ℥ij
Spt. aeth. hit. ℥vj
Liq. Ammon. acet. ℥ij
Syrup simp. ℥i
Aq. ad ℥viij

Sig. ℥iv 6ta die in aqua

2. Rx.

Quininae sulph. grs xxxvi
Acid. hit. hum. dil. ℥iv
Syrup Amant. ℥ij
Aq. ad ℥vj

Sig. ℥iv 6ta die in aqua

2. In cases of Acute Peritonitis
Pelvi Peritonitis or Pelvic Cellulitis

1. Ext. Belladonnae grs iv
Quininae sulph. grs xxxvi
Ext. gent q.s. ut
fiant pil xii

Sig. One three times a day.

added Opium and Belladonna. The writer has a strong, but perhaps not very well founded antipathy to Opium in the treatment of Puerperal Fever, and when it is used by him at all it is given by means of a suppository. In many cases it hinders digestion, and in all cases it disorders the functions of the bowels, and kidneys. Its value however, in giving the patient rest, when great pain is present, is undoubted. To procure sleep it is not, in the writer's opinion of so much value as a combination of Bromide of Potassium and Hyoscyamus. The sleep that is derived from the use of Opium is not of a quiet, and refreshing character while that which follows upon the use of Bromide of Potassium, and Hyoscyamus is distinctly so.

It is frequently a matter of some difficulty to keep the patient's bowels acting in a regular fashion. When they are costive the writer finds that small doses

For the purpose of procuring sleep:-

℞.

Tinct. Hyoscyamus m. 30
Pot. Bromid. grs 20
Spt. Aeth. Nit. ℥ss
Syrup et Aq. ad ℥ss

Sig. To be taken at bed time.

of calomel, followed by milk gruel, beef tea or chicken soup, act well, and are not provocative of diarrhoea. When diarrhoea is a symptom of the disease morphia administered in the form of a suppository is useful. The diet in such a case would be restricted, as it is in the treatment of Enteric Fever, to milk. In certain cases the digestion of the patient is greatly impaired, and in these the treatment of such a disease as Puerperal Fever the fashion in which the food is digested is of the first importance. Benger's Liquor Pancreaticus is of great value in these cases, and in the experience of the writer it has proved of very great service.

The diet of the puerperal patient must of necessity be light, easily digested and as nutritious as possible. Good milk is the most important item in such a diet, but the patient must be restrained from taking too much at a time. Eggs switched with a little sherry, and sugar are at once palatable, and sustaining

Beef tea, thrush a chicken soup, and, unless there is diarrhoea, thin well boiled porridge are all articles of diet which may be used by the patient. There is always, or almost always distressing thirst, and for the relief of this there is nothing so useful as ice. The patient wearies of lemon water, or toast-water, but a little piece of ice melting in the parched mouth is always agreeable.

In cases of peritonitis the writer has found the application of hot fomentations of some service. They should be applied as hot as the patient can bear them, and over them a bandage should be put on as firmly as possible. In all cases of puerperal disease which come under the term Puerperal Fever the writer's routine practice is to wash out the vagina twice a day with solutions of Condy's Fluid or Carbolic acid. When there is much foetor the latter is preferred. In only one case did the writer find it expedient

Prophylactic Treatment

to wash out the uterus. Complications and Sequelae of Puerperal Fever such as, Phlebitis in the lower extremities, Thrombosis, Abscess within or outside of the peritoneal sac, Embolic Infarcts of the lung, discomfort arising from bands of adhesions left by peritonitis fixing the uterus in an abnormal position, or preventing the free peristaltic movement of some part of the bowel - all these must be treated as they arise

The treatment of puerperal disease especially of the graver kinds must be prompt, must be methodical, and must be maintained in spite of every discouragement.

XV

The Prevention of Puerperal Fever has in these days been made the subject of much discussion. All are however agreed that it can be most effectually prevented by the use of antiseptic precautions. In the first place the patient must be placed

before delivery in as favourable circumstances as possible. The room in which she is to be confined should be warm, but well ventilated. It should be ascertained free from bad smells of any kind. On no account should a fixed in wash hand basin with a waste pipe be allowed in the bed room where a woman is to be confined. This a most dangerous convenience. The bed should be without curtains, and if possible the floor should be without a carpet.

The careful physician before making a vaginal examination will thoroughly cleanse his hands with hot water, and soap, and if in course of his days work doubtful cases have been encountered he will do well to add a few grains of Permanganate of Potass. to the water. Frequent examinations in the early stage of labour are to be avoided. After the child is born the writer is in the habit of leaving the patient alone for about ten minutes giving in the majority of cases

a drachm of Liquor. Lysol. After the placenta is removed every clot that can be reached should also be taken away. The patient is then carefully bathed, and dried with a hot napkin. The sheet into which the discharge has been received is then removed along with everything soiled that is about the patient. Within the last two years the writer has recommended to his patients Southall's Sanitary Towels, and, when the patient's circumstances permitted, Sanitary Sheets which are placed above an ordinary sheet and are wonderfully soft, and agreeable to the patient. It is not the custom of the writer to use the vaginal douche after an ordinary case of labour, and his experience leads him to the conclusion that its use is not required.

XVI

When delivery has to be completed by means of the forceps, or by turning, greater precautions are necessary. The writer's

practice when using forceps is as follows. The instruments are thoroughly warmed by means of a dry heat. They are then carefully sponged with boiling water, and dried thoroughly with a clean moist towel. As a lubricant carbolised vaseline (1-10) or oil may be used. Before introducing the blades the patient's genitals are thoroughly bathed with Condy's fluid, a Carbolic acid in solution, or Corrosive Sublimate of the strength of one in a thousand. The hands of the operator are washed in hot water and the nails well cleaned with a hard nail brush. After delivery the patient is thoroughly bathed as in an ordinary case but with an antiseptic solution. Within twelve hours after delivery the vagina is thoroughly washed out with an antiseptic solution. In the majority of cases this washing out of the vagina is only done once. The external genitals are of course bathed twice a day, and if there be a

laceration of the perineum it is dressed with carbolised vaseline. The writer is disinclined to believe in the value of stitching small tears of the perineum, and even larger ones are in his opinion best left alone. Being kept perfectly clean they usually heal with sufficient rapidity.

When there is reason to believe that a fragment of the placenta, or a large shred of membrane has been retained the vagina must be kept as aseptic as possible from the moment of delivery until the offending substance is expelled. In two cases the writer was most successful in effecting this. In the first case the patient miscarried at the end of the sixth month. The placenta was diseased, and friable, and a fragment of some size remained for three days in the ~~the~~ uterus. The vagina was washed out twice a day, and Ergot was administered. The fragment was expelled, and the patient made a good recovery. The second patient

a primipara, was delivered after severe and prolonged traction with the long forceps. She was fully an hour and half under chloroform. When the placenta was removed it was found that a large portion of the membranes had been left in the uterus. An effort was made to reach it, but in vain. The patient was submitted to the same treatment as that above described, and the membranes were expelled on the second day.

Puerperal Fever in its worst form is happily becoming uncommon, and this is doubtless due to the fact that in the treatment of this disease the antiseptic theory plays a large part. It is seldom that one hears of epidemics of Puerperal Pyaemia in these days. In many cases the circumstances of the patient are in favour of the production of the disease, and under the old and uncleanly methods it was most certainly produced. In these days however it is different. The precautions

which every careful physician takes in order to shield his patient from dangers arising out of the circumstances of her life are frequently little thought of by those most nearly concerned in their success or failure, but they are of great importance & not only to the patient, but to the community also. The Prevention of disease is not the most noticeable part of a physician's duty, but it is in every respect the most important.

XVII

In conclusion the salient points of this Essay may be briefly recapitulated.

1 Character and Etiology of Puerperal Fever. It is a disease which may assume a variety of forms all of which are encountered in the case of other patients, and the symptoms of which are greatly modified and altered by the Puerperal condition. The predisposing causes of the disease

are as a rule to be found in the patient herself. The exciting, or immediate cause is always septic and exists in the surroundings of the patient

II. Symptoms, and character of the various forms of the disease.

The Pyaemic which is the most deadly form, with all its modifications.

The Peritonitic in which acute inflammation of the whole, or part of the peritoneum is the leading feature.

Metritis in which the substance of the uterus is the subject of acute inflammatory congestion arising from the absorption of septic material

Uterine Phlebitis in which the veins of the uterus and its vicinity are inflamed, and become thrombosed.

III Treatment. Curative.

The leading indication for treatment in the Pyaemic variety is the ~~maintenance~~ conservation of the patient's strength

by means of alcoholic stimulants, cardiac and general tonics, and antipyretics. The administration of drugs which shall maintain as far as possible the functions of the bowels, kidneys, and skin. Light easily digested, and nourishing food. In the Peritonitic, and other varieties the indications are to subdue the inflammatory congestion, and, as in the case of Pyaemia, to maintain the patient's strength.

Prophylactic treatment.

Removal of all causes of Septic infection from the surroundings of the patient before, and after delivery.