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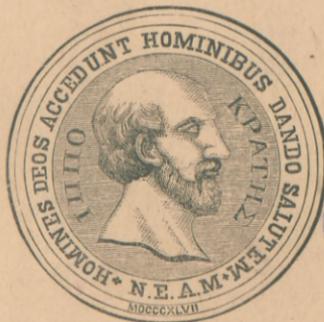
DEGENERATIONS
OF
THE PLACENTA

AS A
CAUSE OF THE DEATH OF THE CHILD.

BY
CHARLES A. LEALE, M. D.,

*Presented by
the Author*

[REPRINTED FROM THE TRANSACTIONS OF THE NEW YORK ACADEMY
OF MEDICINE.]



UNA FIDES ALTARE COMMUNE.



NEW YORK:
D. APPLETON AND COMPANY,
549 & 551 BROADWAY.
1876.

Compliments of

Charles A. Leake, M. D.

New York.

239 West 53d Street.

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DEGENERATIONS OF THE PLACENTA AS A CAUSE OF
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Read May 18, 1876.

THE degenerations of the placenta, commencing during the early months of pregnancy, affecting the life of the fœtus, offer a vast field for medical scientific investigation, and the knowledge of their causes, prevention, and cure, will enable the physician, in many instances, to guard against a frequent cause of abortion in the anæmic, and in those suffering from constitutional diseases, which, as many authors have asserted, is one of the most frequent causes of producing a change in the structure of a tissue absolutely necessary for the development and existence of the fœtus; and when we are called to witness the sorrow of women whose intensest desire is to have offspring, but who, after suffering all the miseries incident to a long pregnancy, at the end of nine months are to be again disappointed, we are surely called upon, not only to tender our sympathies, but to investigate the cause, and if possible, avert the recurrence of such a catastrophe. Having notes of the instances where this condition has occurred during the past ten years, I will present for consideration a few clinical facts which may fortify us in the future, and lead us to consider the best measures to adopt to prevent what is one of the most disagreeable duties of a physician, viz., to deliver a woman of a dead child.

By fatty degeneration of the placenta we mean that gradual transformation into fat, and in the end complete loss of usefulness and final destruction of the tissues, found in a healthy

placenta, which may be often recognized by the naked eye, either as yellow solid fat, yellow liquid fat, or granular fatty masses, found occupying the former positions of the foetal tufts and villi of the spongy portion of the placenta. In the tissues of the umbilical cord, and in the membranes surrounding the foetus, we find the fatty degeneration of a granular form, as numbers of small elevations feeling like shot, completely destroying that transparency of healthy membranes, and causing the amnion to become dirty-looking, yellowish and opaque. As will hereafter be explained, it will be seen that we have the yellow softening, the result of the occlusion or retardation of the passage of blood through the nutrient vessels as we have found in the syphilitic form.

The cheesy degeneration, or fatty granular metamorphosis of Virchow, as in one from a patient expiring in the last stage of phthisis pulmonalis. The atrophic fatty degeneration also found in a placenta from a mother having pulmonary phthisis. The waxy or lardaceous, from a very gross scrofulous mother, in which no free fatty infiltration could be found.

Paget states that "in most instances the fatty degeneration affects, first and chiefly, the contents of cells or tubules, or the proper substance of the membrane. And when it thus happens, the nuclei almost always waste, and either shrivel or disappear after gradually fading in their outlines. This may be commonly seen in the fatty degeneration of the renal and hepatic cells, and of the muscular fibres. The whole history of fatty degenerations concurs to prove that they are the result of defect, not of disease of the nutritive process; and that they may therefore be classed with the atrophy which we recognize in merely diminished quality of formation." Therefore we can easily imagine why a woman, who has either conceived with a diseased sperm, or is herself the subject of syphilis, phthisis pulmonalis, scrofula, etc., from simply that defect of nutrition and malassimilation, can have a degeneration of a fatty character start in a placenta, and thereby be the direct means of preventing her from giving birth to living children at the full term of gestation.

ILLUSTRATIVE CASES.

Fatty Degeneration of the Placenta originating in Sperm from Syphilitic Father, the Mother never having had any of the usual Manifestations of the Disease.—At a meeting of the Pathological Society, April 22, 1874,¹ I presented a placenta weighing only six ounces, discharged from a lady confined at full term. Throughout the substance of the organ were three lobes of fat, each about the size of a small hen-egg, which could easily be seen through the thick membranes of the foetal portion of the placenta as semitranslucent masses, while a very delicate transparent membrane was all that covered them on viewing the organ from its maternal surface. They were situated at equal distances from each other, and midway between the insertion of the cord and periphery of the placenta; lines drawn from their distal extremities would have represented a right-angled triangle. On removing the delicate membrane on the maternal surface they were found to be cavities filled with liquid fat, having their base and sides lined with soft yellow fatty tissue, showing complete destruction of at least one-third of the entire placental tufts. On the surface of the amnion over its entire extent were seen a large number of granular fatty spots, the size of small peas, which destroyed the usual transparency of healthy membrane giving to it a dirty yellowish and thickened appearance.

The infant was a miserable, puny, and wrinkled boy, weighing about five pounds, having barely sufficient strength to cry.

The mother, up to the time of marriage, had been a very healthy, rosy-cheeked, robust lady, but soon after conception she changed in appearance, became pale, fretful, and extremely haggard-looking, losing all energy and becoming so sensitive to slight variations of temperature as to have frequent attacks of bronchial irritation and leading her relatives to suppose her to have chronic pulmonary trouble. On examination

¹ *Medical Record*, p. 302, 1874.

her heart and lungs were found to be in an excellent condition. She had been treated by several physicians for a variety of troubles, yet from none did she derive any benefit. She had never had, to her knowledge, any sore on genital organs, nor any cutaneous eruption, nor any of the usual symptoms of syphilis. When I first saw the father a short time after the birth of the child he was asked how long since he had had syphilis, which was answered by a positive denial, but inadvertently said that he had been troubled with a sore throat for several months, which on examination proved to be syphilitic. On being informed of this fact, he acknowledged that he not only had had chancre, but also had been covered with the secondary eruption; that he had been told he was cured, but had always since been troubled with a tender sore throat. On examining the glans penis, distinct syphilitic mucous patches were then visible.

Simple Fatty Degeneration from Placentitis, the Result of a Contusion.—Mrs. K., at the eighth month of her pregnancy, while returning from Brooklyn, was forcibly thrown forward in a collision, causing her to strike against the abdomen near the umbilicus. Considerable fever followed, but she went her full term, and I delivered her of a paralyzed child, with club feet, and having a large hæmatoma over parietal bone. The child died in a few hours after its birth; the mother had a good recovery. The placenta showed evidences of placentitis, was adherent to the uterus, and evidently had been the seat of inflammation after the accident.

Fibrinous Deposits in the Placenta; Hydrocephalic and Rickety Child, the Father having Morbus Coxarius, and the Mother Cavities in both Lungs.—E. F. R., aged twenty-two years, in consequence of phthisis pulmonalis, was advised not to marry. She had a severe cough of over three years' duration, frequent night-sweats, and latterly three quite profuse hæmorrhages from the lungs. Her intended was deformed by hip-disease, there being about three inches shortening, and a false joint.

They did marry, and her health immediately began to im-

prove after conception had occurred. There was no nausea, but her cough continued, with profuse expectorations of thick mucopurulent matter, fully four ounces in some days.

She did not believe herself to be pregnant, and supposed the stopping of her courses due to extending disease of the lungs. She came to me for advice, and was then told to walk and ride in the open air, eat hearty nutritious diet, and do all to increase her strength, and to return at the end of the following month. Signs of pregnancy had now commenced to appear, by discolorations around the nipples, increased size of breasts, and abdominal distention. She still had a hard cough, and cavities in the lungs could be easily detected. Night-sweats occasionally occurred.

April 17, 1867, after an easy labor she gave birth to a very feeble child, of eight months intra-uterine life. The mother had a tedious convalescence, but her cough diminished in severity, and after the first month she rapidly gained strength and flesh. The child was fed on goat's milk, and thrived very well. He is now over nine years old, and very precocious, with a head twenty-one and a half inches in circumference. He promises to be much stronger than either parent.

The mother has since had two children, each the subject of chronic nasal catarrh. She easily gets cold and has a protracted cough follow, but is to-day in far better health than on the day of her marriage.

The placenta with each child contained large fibrinous deposits.

Tuberculous Degeneration of the Placenta; Child born at six months in consequence of and during a Violent Paroxysm of Coughing; Death of Mother thirty-seven hours after Delivery; Death of Child twenty-four hours after its Birth.

—September 29, 1868, I saw, for the first time, Mrs. P., aged twenty-eight years, the mother of one living child, and on examination found cavities in both lungs, and a large remaining portion the seat of chronic solidification with extensive pleuritic adhesions; each thoracic cavity contained about a pint of liquid. She stated that during the past year

she had had almost constant fever, frequent night-sweats, and had rapidly lost strength.

She did not suppose herself to be pregnant until after feeling the movements of the child for some time, which were always feeble; the cessation of her menses, she was told, was in consequence of disease, far advanced, in the lungs.

When I arrived, she was so much exhausted that we all expected death to occur at any moment. I had not been in the house many minutes, and before examining the uterus, the child was born during a very violent paroxysm of coughing; the placenta soon followed. Very little hæmorrhage occurred, and by means of pressure on fundus uteri it was kept firmly contracted. Brandy revived her a little, the cough was much less severe. She became cyanotic, bathed in perspiration, and died in thirty-seven hours, from insufficient lung-tissue to support life.

Syphilitic Fatty Degeneration of the Placenta.—On June 25, 1868, I visited a lady who aborted at her sixth month, a few moments after I arrived at her bedside, she at the time telling me that during the preceding six years she had several times aborted without any known cause, as she strongly desired to have children. The foetus was not so well developed as a child at that term, although the bony skeleton was as mature, yet there was a great deficiency of flesh, which hung loosely about the bones, the skin being wrinkled, the child having evidently died from absence of proper nutrition.

The placenta was found to have undergone such extensive fatty degeneration as to prevent the free circulation of blood through its placental tufts: it was carefully kept until the following day, when Dr. S. T. Hubbard saw her. He then stated to me that at her previous abortion he had also found as the cause fatty degeneration of the placenta. I then endeavored to find a cause, but after careful inquiry and examination found none. Three years after, the father came to my office for copper-colored stains on skin of forehead, and acknowledged that, over fifteen years prior, he had had a very severe attack of syphilis.

Apoplexy and Calcareous Degeneration of the Placenta.—

October 30, 1875, I delivered Mrs. S. of a boy weighing eleven and a quarter pounds. The father and mother were each twenty-six years old. The mother was perfectly healthy, had been married six years, this being her fourth child. The father, during his wife's last pregnancy, had been very hysterical, and on one occasion, after considerable scolding, had fallen to the floor, as his wife supposed in an attack of apoplexy. On my arrival I found him grinding his teeth and having muscular contortions, which they were trying to overcome by forcibly restraining him on his back on the floor. The mother passed through all this excitement and did her part to control her husband. While I was in the house a telegram was received stating that their youngest child had been in convulsions for the past twelve hours, and for the parents to come immediately a distance of over 200 miles. The mother then was four months advanced in pregnancy. After this all went on very well until the second day before delivery, which occurred at the end of the fortieth week of gestation, when she suddenly became very faint, while reaching to put clothing away on high shelves. Her labor was normal. The placenta was large and had a number of partially-organized clots in its substance. There were also a number of calcareous masses about the size of pigeon-eggs, which I supposed to have been the result of changes occurring at the period of excitement five months before delivery.

The following case illustrates that cancer may not affect the placenta.

Extensive Cancerous Disease of the Os Uteri; Apparent Cure; Subsequent Conception and Delivery of Healthy Child at Full Term; Reappearance of the Disease; Death from Exhausting Hemorrhages seven months after Delivery; No Disease of the Placenta.—During the autumn of 1868, Mrs. E. P. C., aged twenty seven years, was treated by me for cancerous erosions of the os uteri which had caused frequent and profuse hæmorrhages; after three months' treatment, I produced an apparent cure by the application of fuming

nitric acid to all indurated and ulcerating parts, leaving the stump covered by a pale, healthy-looking, but almost bloodless mucous membrane. After this she became regular and did not have any ichorous, watery discharge between the menstrual periods, and on viewing all the parts to be seen she appeared to be cured. In a short time she became pregnant, had no trouble, and at the end of nine months, on December 6, 1869, I delivered her of a healthy girl; the disease very soon reappeared, was checked as much as possible until the last of June, when the ulcerations had caused a vesico-vaginal fistula. June 22, 1870, she was examined in consultation by Dr. Thomas Addis Emmet. The disease extended rapidly and death soon followed from exhaustion.

In the *Medical Times and Gazette*, September 5, 1874, a report of the Obstetrical Society of London is given, where at the meeting of July 1, 1874, Dr. J. C. Hays exhibited a fatty placenta taken from a patient who furnished a very instructive history. She was thirty-seven years of age; married sixteen years. There were no grounds for any suspicion of syphilis. She bore three living and perfectly healthy children. During her fourth pregnancy she received a severe fright, and shortly afterward was delivered prematurely of an eight-months still-born foetus. Her health then began to fail, and in succession followed twelve still-born children, nearly all of which had reached at least seven months' maturity. During the last four or five pregnancies she had suffered from serious and frequent hæmorrhages, dating from the third month of gestation, and occurring sometimes every fortnight till labor supervened; they were quite sudden and without any recognizable cause, and came in gushes not unfrequently during the night, unattended by pains. When first seen, February 7, 1874, she was four months advanced in pregnancy, and had had two serious losses of blood. She was very anæmic and extremely debilitated. Rest was enjoined, and fifteen minims of the liq. ferri perchloridi prescribed thrice daily. Her color and strength

rapidly came back, and there was no return of the hæmorrhage. Fœtal movements were distinctly felt until within six days of labor, which happened at full term, and the fœtus, though small, bore all the appearances of maturity, and seemed to have been dead about a week. Since the birth of her last living child gestation had never continued so long. The placenta was small, weighing only twelve and a half ounces; it had a pale-yellowish appearance, contained little blood, and nodules of fat, characteristic to the naked eye, were studded over the maternal surface, especially along its margin.

The fatty change was most advanced toward its surface, a large portion of the decidua being merely an aggregation of oil-globules. The adjoining fœtal villi, with the investing chorion, were seriously affected, but those close upon the fœtal surface were simply granular in appearance.

Dr. Hays, after referring to the investigations of Dr. Barnes, published in the *Medico-Chirurgical Transactions*, stated that he considered the disease in this case to have originated in the maternal portion of the placenta, this view being borne out by the weakly condition of the patient and the microscopical examination.

No doubt the previous premature births and the hæmorrhages had been due to the same condition of the placenta. He could not regard the disease as originating in placentitis; this was contrary to all analogy. It was a degenerative change, occurring under the same conditions which induced fatty heart, fatty kidneys, and fatty arteries in the brain. Should the patient become again pregnant, the propriety of inducing artificially premature labor would be considered.

Dr. Barnes thought that the case proved that the disease may originate during the life of the child. This notion had been controverted. It was said to take place after the death of the child. But it was hardly possible that all this mischief could have occurred in the short time after the death of the child; it was very much more likely to have preceded this event, and, in fact, caused the premature destruction of the child. As regards the change commencing in the maternal or

fœtal portion of the placenta, it affected mainly the villi of the chorion. He likened it to fatty degenerations of other organs, and had not stated that the change arose from placentitis. The case was full of interest and had important pathological bearings.

Had the vice-president of this academy and one of their own honorary members been present at that meeting and known the results of a case almost analogous in every respect terminating during his absence, he could have given conclusive evidence that this change in the placenta does occur during the life of the child, and that on the preceding June, in New York, a result had been obtained in proof that his theory was founded on fact.

I will now give an illustrative case showing that extensive fatty degeneration of the placenta occurs during the life of the fœtus *in utero*, and that the induction, artificially, of premature delivery can accomplish the birth of a living child, which now at the age of three years is in excellent health and has a fine physique, the mother in this instance having become very anæmic in consequence of six rapidly succeeding pregnancies, where the death of the fœtus, or that of the child immediately after birth, was caused by degeneration arising in the placenta.

Mrs. B., aged thirty-seven years, at the time of marriage, considered herself to be in excellent health, not conceiving until the termination of the ninth month after marriage, when she almost immediately began to lose flesh and have constant nausea, which caused such debility that her husband spent the following season with her traveling in Europe. Mrs. B. continued to grow worse, and at end of her seventh month gave birth to a very feeble child, which lived about five minutes. Eleven months after she conceived the second time, and almost immediately her stomach rejected the food, and uncontrollable nausea and prostration followed; at the end of seven months and ten days, during a violent attack of vomiting, she was delivered of a dead, decomposing fœtus; profuse hæmorrhage followed for several weeks, leaving her very anæmic. In

thirteen months she conceived the third time, nausea and vomiting reappearing, and a disinclination to take nourishment. This fœtus also she lost at six and a half months, her attending physician then stating that the child had been dead over two weeks *in utero*.

Shortly after this, while still very anæmic, she became pregnant for the fourth time, increasing very rapidly in size after the sixth month. At seven months the pressure on the diaphragm, from the increased size of uterus, in consequence of an abnormal accumulation of amniotic fluid, became so painful, that her only rest was while in the erect posture, and her only sleep was while she rested her arms, shoulders, and head on her piano (a table about forty inches high). This condition continued for two weeks, when, at the end of seven and a half months, acute lancinating pains in the diaphragm became so severe that general prostration ensued, almost proving fatal by syncope. Soon after rallying, uterine contractions commenced, and a very feeble, wrinkled child was born, only having sufficient strength to live for two hours. Her exhausted condition and frequent disappointments now caused her to be very melancholy; she refused sympathy, thinking that she could never accomplish her chief desire, viz., to have a child live. A change of residence to new scenes and associations enabled her to become both mentally and physically better, but yet quite weak, when she conceived for the fifth time, and placed herself under the care of Professor Fordyce Barker, who gave chlorate of potash and iron, at the same time paying particular attention to general hygiene. She felt motion up to the end of the eighth month, when she complained of abdominal pains, for the relief of which morphia was given. She went about one week longer, when Dr. Barker delivered her of a child, it having been dead about four days. Dr. Barker now had an opportunity to examine the placenta, which he found to be far advanced in fatty degeneration, and determined, should she again become pregnant, to produce premature delivery whenever he found the fœtal heart's action becoming feeble, or signs of prostration

in the mother alarming, waiting, if possible, until after the end of the eighth month.

In May, 1873, just prior to Dr. Barker's departure for Europe, he requested me to take charge of her, at the same time giving me a history of her previous and present pregnancies, and stating his conclusions.

She had then been married about twelve years, this being her sixth pregnancy; she was very anæmic, the mucous membranes of mouth and conjunctiva being almost pearly-white; yet she was more cheerful, and endeavored to do all that was possible to regain strength.

On June 1st I visited her, and found very little change in her condition, and, in accordance with suggestions, examined all urine passed during the previous twenty-four hours; it measured twenty-eight ounces, was of a light amber color, specific gravity 1020, and did not contain a trace of albumen or sugar. Dr. Barker's directions were continued, nothing of importance occurring until the morning of June 24th, when I was hastily called to see her, and found that, in consequence of having eaten a large quantity of stewed green rhubarb on the previous night, she had acute indigestion, which in a few hours had caused severe vomiting and purging, and had lasted all night. On my arrival in the morning she was in a very much exhausted condition; the vomiting had ceased, but the purging and cramps were severe, accompanied by violent attacks of tenesmus. She was requested to lie down in bed, and while the hand was on abdomen a slight movement of the foetus was felt.

On listening, the foetal heart could be heard and its pulsations counted; the os uteri was rigid and not in the slightest degree dilated. With hand on her abdomen, and frequent listenings to strength of foetal pulsations, careful observation was continued for two hours, there being considerable difficulty in controlling her excitement, as well as the nervousness of her husband and relatives.

By this time I noticed that the strength of the foetal heart-sounds was gradually failing, and the mother was becoming

hysterical. I then told them that it was time to follow Dr. Barker's advice, and immediately began to induce premature delivery, all willingly assenting. I commenced by gently pressing the forefinger against the rigid os uteri, and counter-pressure with opposite hand made over the fundus. The pressure was so gentle that it took nearly an hour to dilate the os sufficiently to allow the end of finger to enter, when the uterine contractions began with moderate severity, and occurred at regular intervals. This procedure was continued gently for five hours, when severe uterine pains began to such a degree that the father, in his excitement, urged me to save the mother, and not mind the child. At the end of one hour's severe pain she gave birth to a small, wrinkled, and nearly dead child, not having sufficient strength to cry, only occasionally emitting a feeble whine, characteristic of the weak and premature child. It was immediately submerged, except face, in a bath of water at 100° Fahr., to keep it as warm as while *in utero*, and, after a very superficial washing, wrapped in warm blankets (not dressed), and the body surrounded by bottles of hot water, to supply that heat which its feeble condition rendered it incapable of generating. A few drops of water were given to the child, and it was left with the nurse to care for the mother, who became very much excited, apprehensive of losing her child. The placenta, by gentle traction and pressure over fundus uteri, was expelled entire, and, on examination, was found to have undergone extensive fatty degeneration. *Post-partum* pains of mother were relieved by morphia in quarter-grain doses.

The child, when it was about twenty-four hours old, became cyanotic, cold, and gasped for breath, and was now too weak to emit the peculiar feeble whine of premature and dying children; fresh, soft flannels were warmed, in which it was wrapped, and spirits of camphor, on a small piece, directly applied over surface of abdomen. The artificial heat, by means of bottles filled with hot water, was continuously applied, and the little one fed on its mother's milk, which had been drawn by the nurse. For six days and nights this was

continued, requiring the alternate attention of three experienced nurses, and almost the entire time of the attending physician. On the sixth day the child had hepatitis, became decidedly jaundiced, had great tenderness over the liver, with marked enlargement and distinct induration, probably arising from umbilical phlebitis, although the navel appeared normal. The warmed applications of camphor on flannel were constantly kept on its abdomen, and, to relieve constipation, a piece of flaked manna, the size of a filbert, dissolved in water, was given, producing the desired effect in a very gentle manner. On the eighth and tenth days even the sclerotic membrane of each eye became of a canary-yellow color. The jaundice was very persistent, lasting more than six weeks, and all this time the child continued very feeble. When the child was three weeks old, a small red papule, about the size of a large pea, appeared on the inner side of the left knee; it was three lines in diameter and one in elevation, of a dirty-red color, and had uneven edges. In six days partial desquamation, but no suppuration, occurred, leaving a decidedly copper-colored, saucer-shaped depression, which soon became of a darker copper color.

Nothing at first was done for it, and at each visit the mother would inquire if I could not give her something to remove "that copper-colored spot," which seemed to annoy her very much. The nurse was directed to wet it thrice daily with sweet oil, so that its progress might be observed, and inspection of the entire skin of child was made. Not a single other papule appeared on the skin. The mucous membrane at anus, and the surrounding integument, at the age of four weeks, assumed a red, coppery hue, which resisted the usual applications for simple excoriations. The palms of hands and soles of feet were more red than usual, and wrinkled. The child continued very feeble, but was able to nurse.

The parents stated that they did not remember ever having had any eruption, but I decided to treat the child by the inunction of the unguentum hydrargyri fort., a piece the size of a bean to be rubbed in groin and under the arms, also

over abdomen, under the flannel band, twice daily, and around the excoriations at the nates. The inunctions had been applied only a week before the irritated condition of the anus improved, and the copper-colored depression, which had also been anointed, commenced to fade, gradually doing so until the end of two weeks, when all cutaneous eruptions had disappeared; the inunction, however, was continued in all nearly three weeks without producing any salivation, the child continually improving. The child at the age of ten months had never had any return of the trouble, and continued to grow rapidly. It had no teeth, fed well, was cheerful, but rapidly developed at the frontal portion of cerebrum. The bones of the skull were semi-translucent, and the blue veins in temporal region distinctly visible; the bones of the legs and arms appeared normal, and intellectually the child was unusually bright. At twenty-six months old I again saw her; she had been several voyages on the ocean, had remained in the country during the warmest part of the summer, had passed the winter months in the South; she had sixteen teeth, was very active, and physically and intellectually appeared as well as most children at the same age.

The mother, previous to marriage, had enjoyed good health, but her frequent abortions and disappointments had caused her to become very anæmic and melancholy; she became so desponding that, at one time, fears were entertained that she might lose her reason. She spent the following season in Europe, and under Dr. Barker's treatment and guidance improved so much that, as the previous history shows, she became a happy mother.

The father, aged fifty-two years, denied ever having had syphilis; he had not been in good health for three years, and two years previous to the birth of this child had placed himself under my care. He stated that he had been almost constantly employed for twenty years, and for the past five years noticed failing health; he then had constant headache, and a temperature of $100\frac{1}{2}^{\circ}$ Fahr.; had had chronic bronchitis for several years, and was nervously prostrated; had occipital and tem-

poral pains whenever he took any violent exercise. On examination of his urine, no albumen, sugar, or casts were found; he had no valvular disease of heart, but that organ was exceedingly irritable, and, following the slightest excitement, it would violently palpitate, and the temporal arteries would become very much distended; as he told me, felt like bursting. My diagnosis in note-book at that time stated: "Commencing atheroma of cerebral arteries and fatty degeneration of muscular tissue of heart."

CONCLUSIONS.—Degenerations of the placenta are a more frequent and unrecognized cause of the death of the foetus than is generally supposed; these degenerations may commence early in pregnancy, and slowly progress until over one-half of the entire foetal tufts have been rendered useless before causing the death of the child.

Cause of Degenerations.—Uterine or ovarian abnormalities; insufficient vitality of ovule; disease of ovule; insufficient vital force of the sperm; disease of the sperm; emotional causes from shock producing either paralysis, or partial or incomplete detachment of the placenta.

Varieties of Degenerations of the Placenta observed during the past ten years.—Tuberculous degeneration; calcareous degeneration; degeneration with extensive fibrinous deposits; anæmic degeneration, with atrophy; simple fatty from primary placentitis; fatty degeneration from apoplexy of placenta; fatty degeneration from scrofula; fatty degeneration from syphilis; waxy degenerations from leucocythemic mother.

The tuberculous placenta, to the naked eye, very much resembles the same condition found in the lungs, it being a solid, heterogeneous mass, not capable of being normally inflated, and on transverse section showing the yellow fibrinous deposits, surrounded by tissues altered by inflammation, with cavities filled with pus and degenerated cheesy matter.

Apoplexy of the placenta I believe to be caused by either violent rupture of the blood-vessels of the organ, or in consequence of some degeneration, where, as the result of overreaching, tension was exerted on the fragile, calcareous,

inelastic vessels, easily breaking them, and thereby permitting extravasation of blood into the surrounding tissue.

In placentas from very anæmic, emaciated mothers we find different conditions. If the exhaustion of the mother has been very rapid for a few weeks prior to child-birth, we have portions of the foetal villi representing a recent change into fat. In others, where apparently this fatty change has occurred at some more remote time, we find a shrinking, with little remaining liquid oil-globules or fatty tissue, while in other portions of the placenta the lobes have entirely disappeared, and only a dense fibrinous substance representing how the organ has become contracted.

Fibrinous deposits in the placenta have only been observed in those from mothers who are themselves very anæmic from some protracted blood disease, and whose blood is deficient in red corpuscles. The deposits have been observed in placentas thrown off as early as the seventh month, and, from the intimate connection of the deposits with the underlying villi, appear to have been the direct cause of preventing the proper nutrition, and therefore effecting the death of the child.

Fatty degeneration of the placenta caused by syphilis manifests itself when the mother, as is usual, has an abundance of adipose cellular tissue, by several of the lobes being transformed into fat, which is apparent to the naked eye, being seen through the membranes as yellow masses, and on opening are found to be cavities filled with liquid fat, which can be poured out, and resembles the yellow olive-oil, the empty cavities being surrounded by a bright yellow placental substance filled with microscopic oil-globules.

Primary placentitis may be caused directly by violent contusions. After inflammation of the placenta has occurred, firm adhesions may follow, rendering it difficult to detach the after-birth from the womb. This is most readily done by introducing the entire hand into the uterus, and, with the little-finger on the ulna border edge, pass it beneath the placenta, and remove the entire mass with the hand from the uterus, when it generally remains contracted. This procedure I

have several times resorted to, and not in a single instance have known any unpleasant condition follow.

In waxy degeneration, as a rule, we have generally an unusually large placenta, which, when the uterine contractions have been protracted and severe, may be expelled, almost entirely freed from blood, and to the naked eye looks like a homogeneous mass, which, on being cooled, becomes hard, and can be easily cut into slices. Microscopically examined, under a high power, a profusion of very minute glistening oil-globules, in unbroken cellular tissue, can be seen.

The children are generally like the parents, gross, fat, and phlegmatic, having a superabundance of the white blood-corpuscles.

The blood from the uterus is of a lighter yellow buffy color than that from healthy, robust parents.

In regard to the treatment of either one or both parents, when syphilis is supposed to exist, the mercurial vapor-bath, will probably give a better success than by any other methods.

In phthisis pulmonalis, a gentle cathartic, if necessary to produce one movement from bowels each day, a generous diet, good hygiene, and the inunction of entire skin of body three times a week after a general bath.

In scrofula the preparations of iodine, and, if admissible, iron, both in very small doses, viz. : tr. iodini co., mj. ter in die.

In profound anæmia, where all treatment has either failed or is not admissible, where a degeneration of the placenta has been known to cause the death of the child, and the mother becomes again pregnant, and the same condition is feared, the artificial induction of premature delivery, at about the thirty-sixth week, gives the most favorable opportunity for the mother to have a child capable of living, as recommended by Dr. Hays and Dr. Barnes, at the London Obstetrical Society, July 1, 1874; and, on the preceding month (June), successfully accomplished, I believe for the first time, by Dr. Fordyce Barker, of New York.

