

lungs exist, to replenish or purify, by their mechanism, the stream of life. In beautifully arranged order each part of the body is progressively perfected; the Great Designer "sees that it is good", and finally the last prop is taken away, and the fabric stands completed.

CASE OF INFANTILE PHLEBITIS, WITH PURULENT DEPOSITS, ERYSIPELAS, AND JAUNDICE, ARISING FROM INFLAMMATION OF THE UMBILICAL VEIN.

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HISTORY. Mrs. Jotcham was confined by me on the 24th of February, 1862, with her first child, a fine, healthy male. The labour was comparatively an easy one; everything proceeded perfectly satisfactorily until the sixth day after delivery. A slight hæmorrhage took place from the umbilicus at the period of the separation of the shrivelled remains of the funis, but this would not have been considered worthy of remark, had not other important symptoms subsequently developed themselves.

March 3rd. Some signs of uneasiness; griping and gastric disturbance appeared: the evacuations were scanty and unnatural, consisting chiefly of curdled milk. Vomiting was also present. Castor oil was ordered.

4th. The child improved under the treatment.

6th. As the above-named symptoms reappeared, the oil was again ordered; and as constipation existed, a larger dose was used and again repeated. A carminative was also prescribed, to expel flatulence from the stomach.

7th. The evacuations very scanty, deficient in bile, and chiefly consisted of curdled milk. The two doses of oil had only produced one movement. I ordered one grain of calomel and four of rhubarb; and directed them to be repeated in the morning, if necessary.

8th. Both powders were given, and some evacuations, having a more healthy appearance, resulted. The infant was considerably better. There were occasional spasmodic pains, accompanied by retraction of the limbs: slight shivering and moaning also occurred occasionally. The child was far from easy, but I did not see much to excite alarm.

10th. The nurse called on me to say that the child had become much worse, and "that it appeared swollen all over." Upon visiting it, I found that erysipelas had developed itself upon the index finger of the right hand, and also in the corresponding finger on the opposite side. A slight blush of erysipelas also appeared upon the second toe of the right foot: the knee was tumid, tender, and hot, but not erysipelatic. The little infant appeared to be in considerable pain; was almost constantly crying or moaning; vomiting often, with frequent hiccough: it was feverish, refused the breast, and scarcely slept at all.

The bowels were somewhat tumid, and presented a general tympanitic appearance. The umbilicus was perfectly sound and healthy: there was no hernia. I ordered an evaporating spirit lotion to be constantly applied to the inflamed and erysipelatous spots, and another dose of castor oil to be administered.

The occurrence of erysipelas in this case was entirely without any apparent exciting cause, and at first was inexplicable. The mother was in good health; the apartment was free from currents of air, in fact, warm, without being destitute of ventilation; the child had never been removed from it, and it had been carefully and attentively nursed. The appearance, however, of erysipelas, in some measure accounted for the other anomalous symptoms.

11th. The child was decidedly worse. The erysipelas extended upwards to the elbow on the left side; the fingers were considerably enlarged, and very red; there was a puffy swelling just about the right sterno-cleido-mastoid, very tender to the touch; icterus plainly exhibited itself, the conjunctivæ were orange yellow, and the skin, where free from the erysipelatic blush, was generally yellow. This was not the case yesterday, but it came on during the night: the respiration was peculiarly hurried, short, and sometimes irregular, and sighing, but there were no cough or bronchitic rale; the pulse was rapid, fluttering, and weak; slight evidence of fluctuation was observed on the right finger.

In pondering over this strange combination of symptoms, the peculiar character of the erysipelas struck me: the rapid scattering of the disease, in fact, the co-existence of the erysipelas at various points of the system, appeared very marked; it had not that erratic disposition which that disease usually assumes. These, together with the manifest existence of pus about the finger joints, led me to imagine the entrance of pus into the system, whilst the presence of jaundice appeared to point to the liver as the chief part implicated; and it occurred to me that there was a general cause acting on the whole system, and I gradually came to the conclusion that phlebitis of the umbilical vein had produced a purulent fluid, which, entering the circulation, caused the peculiar combination of symptoms which rendered the case so interesting. I at once expressed my opinion to the parents and nurse, as to the nature of the case, as well as my conviction that the little patient would not survive; but in order to make an attempt to save it, iodine was applied freely over all the erysipelatous points. The lotion was ordered to be continued constantly; and a few grains of grey powder were prescribed, together with an anodyne carminative mixture, to be frequently administered in small doses.

12th. At two p.m., the patient was evidently much worse, and was sinking rapidly. The erysipelatous redness had disappeared, giving place to a dingy purple, or livid colour. The icterus had increased in intensity: the temperature of the surface had much decreased, and the extremities were cold; respiration was becoming embarrassed, very irregular, gasping, and accompanied by a mucous rattle, whilst the mental faculties were wrapped up in a decided coma, and the eyes were glazed and open. Occasionally the child would partially arouse itself and moan piteously, but it was not sensible to external impressions of light or sound. The hiccough had become very frequent; and the pulse

scarcely perceptible from its debility, and also very rapid. Occasionally the colour of the infant would undergo a considerable change, the countenance becoming suffused with a livid purple, around the eyes and mouth being of a deeper tint. These symptoms gradually increased in severity, the respiration becoming still more embarrassed, and at length about eight p.m. it expired, in slight convulsions. Having represented the extraordinary nature of the case to the parents, they kindly consented to a *post-mortem* examination, at which my friend Mr. Parsons (to whom I had stated the nature of the diagnosis formed) was present.

13th. **POST-MORTEM EXAMINATION.** The whole surface of the body was of a deep orange yellow colour; also the conjunctivæ. Collections of pus existed at all the erysipelatous points: about three drachms escaped upon making a puncture with a scalpel upon the inside of the right knee. At the second joint of the left index finger a similar puncture was also made, and a teaspoonful of thick yellow pus escaped. It was beneath the integuments only, and not in the joints, in either case. About two or three drops issued upon incising the toes, in the same way. Upon cutting through the integuments at the usual position for examination, a purulent deposit was opened at the clavicular articulation on the right side. This was superficial, being situated beneath the layers of fascia underneath the platysma myoides, and between the sternal and clavicular attachments of the sterno-cleido-mastoid. It did not appear to be in any distinct sac, but below it was bounded by the junction of the fascia to the clavicle; above, the probe would pass easily in the direction of the muscle, and pus had evidently taken the same course. About two drachms of pus were found in this situation. The umbilicus was perfect, and the cicatrix sound; the umbilical vein was large, and rounded. Upon cutting it across, within the integuments, it was found to be pervious through its whole length, and filled with a curdy purulent fluid, which became more purulent as the vein was traced backwards to the liver. There were not any purulent deposits in this viscus, but it was everywhere congested and of an uniform colour. The gall-bladder contained merely a few drachms of transparent, colourless, viscid mucus; its duct appeared impervious from some cause. Upon tracing the hepatic branches of the vena porta, they were found to contain pus, even to some of their smaller subdivisions, both in the right and left lobes. These appearances, however, were not general. Two main branches and their ramusculi were principally thus diseased; one on the right, and the other on the left. The greatest portion of the pus had found its way to the right auricle through the vena cava ascendens, which of course is but a continuation of the trunk of the umbilical vein. Some slight coagula were found in the auricle and ventricle. The pulmonary artery was obstructed by tolerably firm coagula. The lungs were carnified, but of a more florid colour than from hepatisation, and appeared to resemble the lungs of an infant still-born. The inferior lobes, as well as one of the superior, were solid and did not crepitate; the other lobes were crepitant, but congested; no purulent deposits, however, were found, although carefully sought for. The foramen ovale was still pervious, although it had progressed towards obliteration. The opening was bounded by two curved margins, the superior being more

deeply curved than the inferior; the long diameter was antero-posterior, taking the usual position of the heart into consideration, and measured one-fifth of an inch. The supero-inferior diameter was one-seventh of an inch. The ductus arteriosus was impervious, but the obstacle to the passage of a probe through it was very slight indeed, and it was contracted and indurated. The left cavities of the heart contained some coagula, dark in colour, and rather firm and stringy. The thymus was not of unusual size, or otherwise abnormal.

REMARKS. The *post-mortem* examination fully bore out the diagnosis made during the life of the little patient, in every respect, as far as the nature and cause of the disease were concerned; but I had certainly expected to find extensive purulent deposits in the liver and lungs. These organs, it is true, exhibited the early signs of purulent absorption, but they had evidently suffered less from the pyohæmia than usual. The current of purulent blood had found its way to the right auricle through the vena cava, without much troubling the hepatic circulation. It had here split into two portions; one, the minor, going to the lungs, and inducing solidification; the other, and greater, passing through the foramen ovale to the left auricle and ventricle to the aorta, whence it proceeded through the systemic circulation and produced the local deposits found in the capillaries of the extremities, etc. The open condition of the foramen was not speculated upon, and overlooked until found at the *post-mortem* examination; but when discovered, it at once cleared up all difficulties. Had this aperture been closed, the intensity of the disease would have been shown in the lungs and liver without doubt; in the former principally, as the pus would have followed the course of the circulation: the liver also would have suffered, but in a minor degree, inasmuch as after birth the umbilical vein does not carry any blood into the vena porta.

In this instance, the phlebitis appeared to have crept along the lining membrane of the veins to some of the ramifications of the vena porta, and to have generated pus in its progress. These globules were then washed by the current of blood into the hepatic portal capillaries; and they would have induced deposits, had the infant lived a few days longer to give time for the development of pus, according to the physiological laws of its genesis, from the multiplication of its nuclei and nucleoli.

The umbilical vein was brought home, and its contents submitted to microscopical examination. Pus globules were detected, and the existence of softened fibrin was also recognised by the action of reagents.