

water and carbonic acid, and amounts to thirty-four ounces in twenty-four hours; being the same quantity of water as is removed by the kidneys.

If the normal perspiration, which disappears without being noticed, amounts to thirty-four ounces, it is obvious, that the increasing perspiration, which appears in the form of sweat, must be in great quantity. We are therefore able to diminish the quantity of blood in a very considerable degree by diaphoretics. This is the reason why we feel very weak after sweating any time, for the quantity of blood is very much diminished, and the same effect is produced as after a large loss of blood by bleeding.

I think the cold water-cure acts merely as a diaphoretic. The vessels of the cutis being first contracted by the cold, become, by being excited, very weak, as is the case after every application of a strong stimulus. They become lax and distended, and a great sweat follows; during this, the cold bath is repeated, and the vessels, which are yet not quite restored, are again excited. The relaxation of the vessels must now occur to a greater degree than before; and the sweat does not cease for several hours. Besides this, we must remember the exercise which the patients take in climbing hills, etc. The vessels of the cutis are relaxed to such a degree, that even a stasis of the blood takes place in some parts of the cutis, and spontaneous blisters are produced. Warm bath produces relaxation of the vessels of the cutis, but not in such a marked degree as cold applied in the way just mentioned. Sweating baths act in the same way. By these different kinds of baths, we are enabled to rapidly diminish the quantity of blood without danger of dropsy. They have doubtless other effects; but the diminution of the quantity of blood is the first.

CASE OF SCARLATINA MALIGNA: ABSCESS IN NECK, EXTENDING OVER RIGHT PECTORAL MUSCLE:

DEATH FROM HÆMORRHAGE FROM ULCERATION OF INTERNAL JUGULAR
AND BRANCH OF SUBCLAVIAN VEINS.

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CASE. On the 5th of February, I was called to attend J. V., æt. 8, the son of a gentleman. He had been indisposed for two days, complaining of slight sore throat and pyrexia. On examining the throat, I found it congested, and almost black; the tonsils and uvula were much swollen, and covered with a tenacious secretion; the skin was dry and hot; the pulse 130; the tongue greatly furred, white and creamy, with enlarged papillæ. He had not slept for two nights, and his breathing was laborious. An emetic of tartarized antimony with ipecacuanha was given; this produced slight vomiting, which was followed by profuse purging. Calomel with ipecacuanha, followed by a saline draught, were administered during the rest of the day; leeches were applied to the throat. 8 *p.m.* The throat was relieved, and he could breathe more freely.

February 6th. There had been great restlessness during the night. There was ulceration of the uvula and tonsils as large as a fourpenny-piece, with great foetor; the tongue was drier; the skin harsh and hot. The sloughs were partially removed by a sponge dipped in a solution of nitrate of silver. He was ordered to have a hot bath at night, with a saline mixture containing chlorate of potass; also a gargle of hydrochloric acid and chloride of soda. An embrocation of poppy-heads and sal-ammoniac was ordered to be applied, by means of a hot flannel, to the glands of the neck, which were hard and painful.

7th. The patient passed a sleepless night; the uvula had sloughed, and portions of the tonsils were removed on applying the sponge; the urine was found to be albuminous for the first time; the pulse was rapid and weak; the tongue dry; the strength was much reduced. Quinine was prescribed, and he was ordered to have beef-tea, and milk with isinglass, and wine occasionally.

8th. The tonsils were entirely removed, with portions of the arches of the palate, leaving a ragged edge. The patient had some refreshing sleep. He complained of no pain in the throat, but there was slight uneasiness on pressure, in the right sub-clavicular region. On examination, slight fluctuation was perceived. An exploring needle was passed, and, subsequently, a small opening with a lancet was made. About a pint of healthy pus was evacuated, which continued to flow in greater or less quantity until the 13th of the month.

13th. On this day, a large slough came away, and the discharge then ceased. The throat had not, since the last report, caused any uneasiness; the redness had entirely disappeared, and no pain had been complained of; the urine had greatly increased in quantity, but was still slightly albuminous.

14th. The countenance was much improved, and the patient felt a desire for food. The wine was ordered to be discontinued.

15th. The patient's health was progressing rapidly; the skin was moist, the urine abundant, without albumen, and presenting a large deposit of lithates. He was ordered to have a mutton chop.

18th. (9 a.m.) He was progressing, and his strength was much increased. *(10 p.m.)* I was summoned hastily to the little patient. A fit of coughing had caused the cicatrix of the abscess to give way, and about twelve ounces of blood gushed through the wound. The hæmorrhage was restrained by pressure, and by a compress of lint, held down by strapping, and a bandage was left on the part.

19th. The countenance was rather blanched; he had slept well; there had been a slight oozing of blood during the night. A mixture of gallic acid was prescribed, and he was ordered to have port wine, etc.

24th. (9 a.m.) There had been occasional oozing of blood since the last report, together with a small amount of pus, the whole averaging from two to three ounces in the twenty-four hours. The pressure had been kept up with the compress and strapping as before. Notwithstanding this drain on the system, the child was progressing; he slept well, and was gaining strength. The chief difficulty was to restrain him from exertion. *(9 p.m.)* There had been a little more blood than usual, and no pus. In consequence of the difficulty of keeping the strapping adherent, I plugged the wound with a long thin strip of lint,

without any loss of blood. I had not left the bed-side above a few seconds, when the child, in a paroxysm of rage, pulled the lint out of the wound, thus tearing it open; above a pint and a half of blood gushed out in a stream. With the aid of some ice, which was on the table, and by pressure, the hæmorrhage was soon restrained. A small plug of lint was afterwards introduced, and compresses were applied as before.

25th. He was much reduced by the hæmorrhage; the pulse was small, quick, and thready; the countenance blanched; and there was a constant oozing of blood. My friend Mr. Anderson now saw him with me, to consult as to the propriety of any surgical interference. On removing some of the plaster, we could see the sac gradually fill with blood. From the state of the little patient, the uncertainty as to what vessel was ruptured or ulcerated, and other difficulties which surrounded the case, we determined on continuing the pressure as before. He complained of slight pain in his right knee.

26th. Mr. Anderson again saw the case, but decided that no surgical interference would be safe. On my visit in the evening, the patient complained of cough, and urgent dyspnoea, amounting to orthopnoea. On percussing the right side of the chest, I found dullness in the lower part, with absence of the respiratory murmur; the upper portion was clear. From the pain, and difficulty of moving him, a further examination was not made. He was now placed on a water-bed, his hips and sacrum being a little sore. He complained of pain in his right knee, which was much swollen. The urine was scanty, albuminous, and dark coloured. About ziv had been passed during the last twenty-four hours. A catheter was introduced, but the bladder was found empty. It was with much difficulty that he could be persuaded to take anything excepting water, and that in very small quantities. He was very irritable, and the slightest exertion caused an increase of the hæmorrhage.

27th. There had been slight hæmorrhage since my last visit; the voice was weak; the pulse 140; there was slight subsultus; the dullness on the right side of the chest was found to be increased to about an inch above the mamma. That side was immoveable during inspiration, except at the apex. The intercostal spaces were bulging; the urine was scanty.

28th. He had slight cough when he changed his position; the breathing was easy; he had slept better, and his countenance had improved. The urine was much more copious, high coloured, but contained no albumen; the right knee was swollen and painful, the left slightly so.

March 1st. He passed a restless night. In consequence of picking the edge of the plaster, it became detached from the skin; a gush of blood, which saturated the bed, followed, and the little sufferer expired shortly afterwards.

SECTIO CADAVERIS, TWENTY-EIGHT HOURS AFTER DEATH. *External Appearance.* The body was much emaciated; the right side being much more prominent than the left. Immediately above the opening of the abscess, were two other openings, formed by sloughing of the integument, and a third one above the clavicle. On carefully dissecting the integument from the pectoral muscle, the abscess was seen to extend

over that muscle into the axilla, thence upwards over the clavicle into the neck, as far as the mastoid portion of the temporal bone, passing along to the angle of the jaw. The pectoral muscle was much softened, and, in parts, reduced to a pulpy mass. A clot filled up the axillary space, and there was another clot above the clavicle. On removing the latter, there was seen the ulcerated opening of a branch leading into the subclavian vein; its mouth was partly closed by a clot. On making pressure on the sheath of the deep vessels of the neck, a jet of blood issued. This was found to proceed from an ulcerated opening in the internal jugular vein, with thickened and everted edges; it was somewhat square in shape, and rather more than half an inch in length. In the opening was a clot of fibrine, almost entirely filling it up, and extending upwards and downwards about four inches.

Thorax. The right pleural cavity contained upwards of a quart of sero-purulent matter. The lung was pressed against the back part of the chest; it was solid, impermeable to air, and not more than three-fourths of an inch in thickness: in cutting into it, it resembled flesh. The left side was healthy. The *Pericardium* contained an ounce of sero-purulent fluid. At the base of the heart was shreds of lymph, binding it loosely to the pericardium, as well as other portions floating in the fluid. The heart was otherwise healthy; the right ventricle contained a clot of fibrin. The *Kidneys* were considerably congested, and somewhat soft. The *Right Knee* contained rather less than an ounce of pus. On dissecting into the muscles of the thigh, pus was found in the cellular tissue between them, and also among the muscular fasciculi. On examining the vessels, no trace of phlebitis could be seen.

REMARKS. In relating the preceding interesting case, my object has been not only to direct attention to the rapid destruction of parts, which takes place during some forms of scarlatina, and the insidious mode in which ulceration proceeds under the apparent well-doing of the patient; but to shew that the renal affection is frequently among the primary phenomena of the disorder.¹ In this case, as in ordinary "Scarlatina maligna", the eruption was entirely absent; there was albumen in the urine on the third (?) day; the throat and the kidneys were affected at one and the same time; and we may reasonably infer from these facts, that the presence of excrementitious matter in the blood gave intensity to the general symptoms.

In looking over the case, the first thing that strikes us is, the rapid destruction of parts; for we find that from the first evening to the third morning of my attendance on the patient, a period only of fifty-six hours, ulceration had commenced, and had proceeded so far as to remove the uvula, tonsils, and the soft and portions of the hard palate: during this time also, pus had been forming, and making its way between the muscles of the neck, until an abscess was found, on the fourth day of my attendance, pointing in the sub-clavicular region. On the ninth day of attendance, the slough came away, and the little patient rapidly improved until the evening of the fourteenth day, when the first hæmorrhage took

¹ See papers entitled, "The Kidney in its relation to Scarlatina", by JAMES MILLER, M.D. *Lancet*, August 1849. Also republished in a separate form; and reviewed in this Journal for March, 1850, p. 276.

place. As to the cause of the last-named occurrence, it would appear, either that the ulceration must have been progressing during the whole time, or, that the cellular texture about the vessels of the neck had been removed by the destructive action of the disease, and that the vessels themselves only required some slight increase of distending force from within, as for instance, during a violent fit of coughing, to rupture them. The serous inflammations are clearly secondary to the scarlatinal nephritis. Dr. Golding Bird mentions, that "the train of effects following scarlatina, are almost all referrible to the retention of the nitrogenized elements of urine in the blood"; and adds, that "the recognisable sequelæ of scarlatina, referrible to this category, are characterized by the tendency to the setting up of serous inflammation, especially of the pericardium, pleura, and arachnoid". These remarks are borne out in this case; for we found, on the 26th, that serous inflammation had taken place, with effusion of pus into the cavity of the pleura, as shewn by dullness of percussion, and absence of respiratory murmur about the lower part of the right side of the chest. I may here remark, that the dyspnoea was most urgent, when only a small part of the lung was rendered unfit for its office, during the first few hours of the effusion: but that the dyspnoea passed off, or nearly so, when the whole lung was destroyed. This was an instance, of not very unusual occurrence, shewing that the system does, under certain states, accommodate itself to the impeded state of respiration or of other functions.

The presence of pus in the knee-joint is remarkable. An examination of the veins in the neighbourhood, did not reveal any inflammatory appearance. May not the pus have found its way through the ulcerated opening of the internal jugular, and have deposited itself in the knee-joint, without any phlebitis? Or may it not have been a secondary inflammation, analogous to the serous inflammation within the cavity of the chest?

There is a case narrated in the *Edinburgh Monthly Journal* for March 1843, by Dr. Alexander King of Glasgow, which he attended along with Mr. John Brown of that city, in November 1842. The description of the case is illustrated by a drawing of the parts, as seen on dissection. Dr. King's case resembled mine in some respects, and occurred after scarlet fever. The patient was progressing favourably, after a small abscess had been opened in the neck. Hæmorrhage took place, without any evident cause. Pressure on the carotids did not alter the state of the tumour; but it could not be effectually applied, as cough was induced from the situation of the tumour. The post-mortem examination shewed, on cutting through the substance of the parotid gland, that nearly an inch of the external wall of the internal jugular vein, commencing two lines below the base of the skull, and extending downwards, had been completely removed, as if by a sharp scalpel.

3, Finchley Road, St. John's Wood, June 15, 1850.