

THE LANCET.

A Journal of British and Foreign Medical and Chemical Science, Criticism,
Literature and News.

MDCCCXLVIII.

IN TWO VOLUMES ANNUALLY.

VOLUME I.

EDITED BY

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LONDON:

PRINTED FOR THE EDITOR, AND PUBLISHED BY GEORGE CHURCHILL, 423, STRAND.

REMARKS ON

THE ALLEGED CASE OF DEATH FROM THE ACTION OF CHLOROFORM.

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IN a paper on chloroform, written in November last, and published in the December number of the *Monthly Journal of Medical Science*, I stated my belief that "the power which we have with it, of bringing down the pulse &c., shows that, if exhibited in too strong a dose, and given uninterruptedly for too great a length of time, it would doubtless produce serious consequences, and even death."—p. 417.

Knowing the very great extent to which chloroform has latterly been used; the immense supplies of it manufactured and sold; the many thousands of persons already submitted to its influence; and the want of caution with which its administration has sometimes been conducted; I have felt and repeatedly expressed surprise that no fatal disaster should have accompanied its exhibition.

At last an alleged fatal case of its employment has been reported as having occurred in the practice of Mr. Meggison, of Winlaton, Newcastle; and a coroner's jury has returned a verdict of "Died from congestion of the lungs, from the effects of chloroform."

The unfortunate patient certainly died when under the influence of chloroform, not, however, as I believe, from its effects, but from the effects of the means used to revive her.

I think this will be evident from the statement of a few of the particulars elicited at the inquest, and published in *THE LANCET* of Saturday last, and from Mr. Meggison's own report of the case.

The patient was a girl of fifteen; and the dose of chloroform given was not very large, "about a teaspoonful." Apparently, in "about half a minute" after the inhalation was begun, the operation (the extraction of the nail and matrix of the great toe, for onychia) was rapidly performed. She was at the moment not under so deep a degree of anaesthesia as we often see in surgical cases; for "her breathing was a little quickened, but not stertorous;" her pulse was "not altered in frequency;" and "when the incision was made, she gave a struggle, or jerk." "She kicked out, (says Mr. Meggison;) and I, thinking the chloroform not sufficiently potent, was proceeding to apply more to the handkerchief, when her lips, which had been previously of a good colour, became suddenly blanched, and she spluttered slightly at the mouth, as one in epilepsy. I threw down the handkerchief, and gave her cold water, immediately followed by brandy. In a minute she ceased to breathe." "I gave her some brandy, a little of which she swallowed with difficulty." "She moaned (according to her father's evidence) after the nail was off; he (Mr. Meggison) afterwards put some brandy in her mouth, and she rattled in her throat."

From the above extracts, it evidently appears that the girl fell into a state of syncope (becoming suddenly blanched, &c.) at the time of operating. The syncope might result from the operation, or from the chloroform, or from both. I have seen in a few cases such a blanched state of the lips and features come on, under the use of very powerful and deep doses of chloroform, simulating syncope, and with the respiration temporarily suspended; but these symptoms always readily disappeared, and the patients speedily recovered by simply removing the chloroformed napkin from the face, and letting them alone. And I most sincerely and conscientiously believe, that such also would have been the result in the present unfortunate instance, provided nothing more had been done. But with the best of motives and intentions water and brandy were poured into the girl's mouth. They were of course allowed to rest in and fill up the pharynx of the patient, as in her state of syncope and anaesthesia she was not in a condition to swallow them. The attempt at swallowing mentioned in the evidence was, I have no doubt, an attempt at breathing only, or at breathing combined with swallowing. But it was impossible for the patient, in her weak and torpid state, to inspire through a medium of water and brandy, any more than it would have been possible to inspire if the whole head and face had been inevitably submersed in the same fluid. The liquid would be partially drawn into the larynx. "She rattled in her throat." "In a minute more she ceased to breathe."

In commenting on "Injuries of the Head," Mr. Guthrie, when speaking of the treatment of concussion of the brain, a state rendering the sufferer like Mr. Meggison's patient,

"senseless and motionless, and the countenance deadly pale," correctly observes, "It is improper to put strong drinks into his mouth, for he cannot swallow, and if he should be so far recovered as to make this attempt, they might possibly enter the larynx, and destroy him." Would not the same result happen if the same treatment were applied to a person in a deep state of apoplexy, epilepsy, syncope, or narcotism?

The girl died, then, as I conceive, from the *nimia cura medicina*—choked or asphyxiated by the very means intended to give her life. And this view of the case is further completely borne out by the pathological fact, that the appearances observed at the post-mortem inspection of her body were all exactly those produced by simple asphyxia.

The principal morbid appearances were the following. I give them in an arranged and numerical order.

1. *Heart and blood*.—"The heart contained dark fluid blood in both its cavities; very little in the left."

2. *Lungs* "not collapsed on opening the chest."

3. *Lungs congested*.—"The external appearance of both lungs over the whole surface, but especially at the inferior portions, was that of organs in a very high state of congestion."

4. *Bronchi*.—"The pulmonary tissue was filled with bloody froth, which was also found in the interior of the bronchi mixed with mucus."

5. *Larynx and epiglottis*.—"On examining the larynx and trachea, the epiglottis was found reddened at the summit, of a vermilion hue. The mucous membrane of the larynx was redder than natural, mottled with vascular patches. The sinuses of the larynx contained a good deal of dark mucus."

6. *Parenchymatous abdominal organs*.—"The liver, kidneys, and spleen, were more congested than usual."

7. *Brain*.—"The brain externally and internally was more congested than usual."

These are all the special morbid appearances in the case, as officially reported to the coroner, and one and all of them are exactly the special morbid appearances found in the bodies of patients who have died of simple asphyxia. In proof of this I shall cite below, in a foot-note, (and in the same arranged order, for the sake of comparison,) the morbid appearances characteristic of asphyxia, as given in a careful and elaborate article on the subject, by Dr. Carpenter, in the "Library of Medicine," vol. iii. pp. 221, 222.* I have taken it as the one first come to hand. I might refer equally to Dr. Roget's essay on Asphyxia, in the "Cyclopædia of Practical Medicine," for the same kind of proof.

The morbid appearances, I repeat, in Mr. Meggison's patient were precisely those seen to result from pure asphyxia. They were, on the other hand, different in some essential points from the morbid appearances seen in the bodies of animals killed by the inhalation of chloroform. About two months ago I witnessed a series of experiments made by a committee of the Medico-Chirurgical Society of Edinburgh, on several animals poisoned with fatal doses of chloroform. In Mr. Meggison's patient, the blood found in the heart was "dark" and "fluid." On the contrary, in the fatal experiments to which I allude, "firm coagula of blood in the heart were found in every case where chloroform was inhaled." In some the lungs were congested; in others, quite healthy. In none did we find the brain congested, as in Mr. Meggison's patient.

* "Morbid Appearances after Simple Asphyxia rapidly induced."—(Extracted from Dr. Tweedie's Library of Medicine, vol. iii. p. 221.)

1. *Heart and blood*.—"The accumulation of blood in the right side of the heart, and in the vessels connected with it—namely, the systemic veins and pulmonary artery, and the comparatively empty state of the left cavities, as well as of the pulmonary veins and systemic arteries, are the appearances most characteristic of asphyxia." "The blood is usually found fluid."

2. *Lungs not collapsed*.—"The lungs are greatly distended, and expand so as to meet over the pericardium."

3. *Lungs congested*.—"When exposed to view, they present a dark brown, somewhat almost blackish hue externally, but their parenchyma exhibits a redder tint when cut into. The engorgement is here in the arterial system, but it is occasioned by the accumulation of venous blood, of which large, dark, thick drops flow out when incisions are made in the substance, and slight pressure employed."

4. *Bronchi*.—"A mucous froth, rarely sanguinolent, covers the lining membranes of the larynx, trachea, and bronchi; the membrane itself is sometimes deepened in colour."—(Appearances after Asphyxia from Submersion, p. 244.)

5. *Larynx and epiglottis*.—"Venous congestion is usually well-marked in the root of the tongue, which often appears as if injected. It extends, also, to the mucous membrane of the larynx and epiglottis, of the trachea and bronchi, which is deeply marked by vascular turgescence."

6. *Parenchymatous abdominal organs*.—"The venous congestion "is very perceptible in all organs which are largely supplied with blood. Thus the liver and spleen are in a state of engorgement."

7. *Brain*.—"The veins and sinuses of the head of course partake of the general venous congestion, and in well-marked cases, an unusual number of red points is seen on slicing the brain."

† See Dr. Bennett's Report on the subject, in the *Monthly Journal of Medical Science* for January, 1849, p. 539.

Besides, the dose of chloroform exhibited by Mr. Meggison was so small as to render it exceedingly improbable that it could have been the essential cause of the death of the patient.

Altogether, then, while it thus appears highly improbable that the fatal result in Mr. Meggison's patient could be the consequence of the use of chloroform, and entirely due to it, the conditions in which the patient was placed were such as would almost inevitably have produced death by asphyxia. The morbid appearances were not those resulting from chloroform; they were those resulting from asphyxia: and as I have already stated, the verdict should not have been, "Died from the effects of chloroform," but "Died from the effects of means used to restore her from the state of anæsthesia."

In making this remark, and coming to this self-evident conclusion, I have no desire to throw any—the very slightest—blame upon Mr. Meggison. Nothing could be possibly further from my wishes and intention. On the contrary, I take very great blame to myself for not publishing sooner, as I intended, a suggestion to my professional brethren, to warn them against this source of danger in the treatment of chloroformed or apathized patients. To point to it, as I have now done, will, however, I hope, be sufficient. And I will merely add, that I sincerely believe, from all that I have seen, that in such a case as Mr. Meggison's patient, *nothing* whatever requires to be done but the removal of the handkerchief or inhaler, and the free admission of air to the face of the patient. If aught else is to be attempted, it should amount to sprinkling cold water on the face, compressing the chest, or otherwise exciting inspiratory acts. And if still further measures are required, then, doubtlessly *artificial respiration* should be the measure employed.

Edinburgh, February, 1848.

REPORTS OF CASES IN SURGERY.

By ROBERT STORKS, Esq., London.

Medullary Tumour of the Humerus; Amputation at the Shoulder-Joint; Return of the Disease.

CASE 1.—At the commencement of February, 1846, I was requested, by J. B—, to meet, in consultation, Dr. Jardine, of Burton-crescent, who, at that time, kindly furnished me with the following history of our patient's case:—

J. B—, aged fifty-four, applied to Dr. Jardine, in the month of July, 1845, for relief from constant gnawing-pain and a gradual loss of power in the left arm. These indications of disease had commenced imperceptibly, and steadily advanced, and he could not call to mind ever having sustained any injury that could have given rise to his symptoms. A careful examination of the limb did not assist the diagnosis. Dr. Jardine therefore naturally concluded that these pains were of a rheumatic character—the more especially as J. B— was at that period suffering from, and from his youth had been liable to, similar pains in other parts of the body. Upon this view the patient was subjected to various remedies, unhappily without deriving the least benefit; on the contrary, the motions of the arm became more impaired, and the pain was in no degree alleviated. Under these discouraging circumstances he was advised to take a few shocks of electricity, and he received several, at the Adelaide Gallery, without, however, deriving any benefit. On one occasion, (the 16th of October, 1845,) being too late to obtain one of the shocks he had usually received from the machine, he was advised, by the attendant, to take hold of the electrical eel, and upon receiving the discharge he experienced acute pain in the upper part of the arm. On his return home, Dr. Jardine was summoned to his assistance, and at once detected a fracture of the left humerus, about its middle. The fracture was set, and had firmly united about the usual period, and everything appeared to be going on favourably with regard to the injury, although the limb remained in the same condition as to pain and loss of power. On Christmas day, 1845, he fell down a flight of stairs, and on being picked up insensible, it was found that the arm was broken about two inches above the seat of the former fracture. The humerus was re-set, and again united, and six weeks after the receipt of the last injury I was summoned to the case.

On a careful examination of the limb at this period, it was found that all movements of the shoulder-joint, in whatever direction they were made, gave pain, so severe in character as to render any but limited motions unbearable. His sufferings we could only explain by the supposition that the insertions of the muscles were involved in the disease, for the most

accurate examination failed in detecting any enlargement of or pain on pressure of the head of the humerus—the contiguous processes of the scapula—or disease in the other structures composing and surrounding the joint. On tracing the humerus downwards, its shaft was found to be of double its natural size, from the surgical neck to the insertion of the deltoid. The fracture was firmly united, and the rest of the limb was perfectly healthy, but wasted—a fact easily accounted for by the long period that had elapsed since our patient had exercised his arm; in every other respect he appeared healthy.

We both agreed as to the doubtful nature of the disease; and, at the time, anticipated that the case might ultimately terminate in a tumour connected with the bone. At this period, however, nothing could be proposed but that the disease should be carefully watched, and that he should resort to any constitutional treatment that the symptoms might indicate. For, however suspicious the swelling about the bone might be, when taken in conjunction with the symptoms preceding the injuries, there was not, at this period, more enlargement than could be fully accounted for by the presence of the provisional callus, and nothing, therefore, to justify a more decided opinion.

Eleven weeks elapsed before I had another opportunity of seeing the case; during this interval a gentleman of much experience had been consulted, by whom Scott's plan of treatment for diseased joints was employed. The disease, however, continued to advance, and this, as well as all the other treatment that had been previously employed, failed in checking its progress.

April 16th, 1846.—I again met Dr. Jardine. On the patient's clothes being removed, a tumour, the size of a large cocoa-nut, presented itself at the upper part of the arm, in the situation of the enlargement we had previously detected. On a careful examination, at points it appeared soft and elastic, at others more resisting; it involved nearly half of the humerus, extending from below the insertion of the deltoid to its surgical neck. The tuberosities of that bone, the shoulder-joint, and the coracoid and acromion processes appeared to be healthy, being neither enlarged nor tender to the touch; the skin was at no point adherent, being freely moveable in all directions. The boundaries of the axilla were not involved in the disease, except at those points immediately in contact with the bone; nor could we detect, on the most careful examination, any enlargement in the absorbent glands, either above or below the clavicle, or in the axilla. During the very limited motions that his sufferings permitted, it was found that the bone, at the seat of the fracture, was not so firm as when we last met. The tumour had increased lately with great rapidity, and the pain entirely deprived him of rest. The countenance had become sallow, the appetite had gone, and he was losing flesh.

As there had been some difference of opinion as to the nature of the disease, we had the advantage, on the two following days, of consultations with the late Mr. Liston (whose loss we have to deplore) and Mr. Fergusson, both of whom concurred in the opinion that the disease was a malignant tumour, involving the humerus.

The nature of the disease being now understood, it became a question as to what line of treatment we should adopt: from the results of operations for malignant disease, more especially from its position in the present case, neither Dr. Jardine nor myself felt justified in urging an operation. We therefore laid before our patient a fair statement of the results of such proceedings, and left it to him to select the course we should adopt. He decided, after due consideration, upon taking the chance an operation afforded him, and I therefore, at his urgent request, felt it to be my duty to perform it.

April 21st.—One P.M.: Assisted by several of my friends, I removed the limb at the shoulder-joint. A preliminary puncture (in order that the accuracy of the diagnosis might be fully ascertained) having been made into the most prominent part of the tumour, from which nothing but blood issued, Mr. Fergusson (with that kindness by which I have so largely benefited) compressed the sub-clavian artery above the clavicles. With a stout bistoury, a semicircular incision, (with its convexity downward,) commencing just in front, and below the acromion, and terminating at the posterior border of the axilla, defined a flap, which was rapidly dissected up; and the joint was opened from behind. At this stage of the proceeding, Dr. Humby, who had charge of the arm, carried it across the front of the chest; but this proceeding was of no avail, the head of the bone remaining in situ, although the force was properly applied, and the capsule and surrounding textures were freely divided. I at once became conscious that the disease had taken from me the lever force