Lastly, it will be the function of such an organisation to insist that special asylums for admittedly dying cases of tuberculosis among the poorer classes should be erected by the local authorities, in the interests both of the dying and the living, and that wisely-conceived preventive measures be adopted by every community.

PERFORATION OF A TYPHOID ULCER : OPERATION : RECOVERY.

BY
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M.R.C.P.Lond., Physician to the F.R.C.S., Surgeon to the General
General Hospital, Nottingham. Hospital, Nottingham.

PERFORATION of the intestine in typhoid fever is unfortunately not uncommon, and although there is little doubt that recovery does occasionally, though very rarely, follow, the result in the vast majority of cases is fatal unless surgical aid be sought. No very great measure of success can be expected from operation undertaken under such desperate circumstances. Nevertheless Finney,¹ of Baltimore, has collected 47 undoubted cases of operation with 13 recoveries, a percentage of 27.65.

The diagnosis of perforation in the earliest stage is by no means always easy. This is shown by several published cases which have been operated upon and no perforation found, and by the fact that out of the 47 cases collected by Finney, in 8 a wrong diagnosis had been made. Typhoid perforation was found, but appendicitis or some form of intestinal obstruction had been diagnosed.

By far the most important difficulty in recommending operation is the fact that usually when perforation occurs the patient is prostrated by an acute and exhausting disease, the course of which is not yet terminated. The present case was an unusually favourable one, because the attack had never been very severe, and the patient was not exhausted. The perforation occurred during convalescence after nearly a week's normal temperature. My absence in the country caused an unfortunate delay, but the case shows that even after twenty-two hours or more operation may be undertaken with success. The severe nephritis during convalescence from the operation was very unfortunate, and has much delayed complete recovery. It was probably due to a septic infarction of the kidney, which suppurated and discharged into the pelvis of that organ.

HISTORY.

G. S., aged 27, was admitted on February 15th, 1898. He had not been well for three weeks, and had been in bed six days complaining of pain in the head and limbs, diarrhoea, sickness, sore throat, cough, deafness, and nocturnal delirium. On admission the temperature was 102° F.; there were numerous spots, and the spleen could be felt. There was no albumen in the urine, and his case ran a moderate and uneventful course. There was slight diarrhoea for three days; the highest temperature was 103° F., and the temperature reached normal on March 2nd, being the sixteenth after admission, the twenty-first in bed, and probably the twenty-fifth of the disease. He was kept exclusively upon milk and beef tea until March 2nd, when a beaten-up egg was allowed. On March 4th the temperature rose to 101° F., and was thirty-six hours in subsiding. The pulse had fallen to between 80 and 88 per minute, and he appeared quite convalescent, but no solid food was given for fear of a relapse. On the evening of March 10th, the twenty-ninth day in bed, and probably the thirty-third of the disease, he complained of a sudden pain in the abdomen, but the pulse did not rise above 90, and the temperature remained subnormal. The bowels were moved, and a trace of blood appeared in the motion. There was no sign of collapse. Opium was given by the mouth, and next morning, as the pain continued, a hypodermic injection of morphine. I was out of town, and was unable to see him until twenty-one hours after the sudden onset of the abdominal pain. By that time his pulse had risen to 120, his temperature to 102° F., and it was evident that he had perforation and commencing peritonitis. My surgical colleague, Mr. Anderson, was fortunately within reach, and gives the following account of the operation, which was commenced 22½ hours after the occurrence of the perforation.

OPERATION.

An incision 4 inches long was made in the mid-line below the umbilicus. On opening the peritoneum some gas and feculent matter escaped. The whole of the small intestine was deeply congested and covered with patches of lymph. Examination of the coils within view did not reveal the leakage, so the cæcum was found, the ileum traced from its termination, and the perforation found within 3 feet of it, the opening being about the size of a bean. Its edges were thinned, but not excessively. The loop of bowel was pulled out of the abdomen, and the hole closed by Lembert's sutures of fine silk. The edges of the opening were not pared, and the intestinal walls on either side of it, although thinned by ulceration, were in sufficiently good condition to hold the sutures well. The small intestine was then pulled out loop by loop, wiped with sponges wet with 1 in 2,000 biniodide solution, and replaced, until the whole had in this way been cleansed. The pelvis and loins were treated in the same way. Douching was not employed. The presence of septic peritonitis was well marked over the whole area occupied by the small intestine, and also in the pelvis. The abdominal wound was closed completely; no drain was used.

AFTER-HISTORY.

The urine had been tested twice a week up to the date of the perforation, and always found quite free from albumen. Two days after the operation there was a cloud of albumen, which soon disappeared. Again, on March 27th and April 3rd the urine is recorded as quite free from albumen. On April 4th the temperature, which had been normal for a fortnight, began to rise to 100° and 101°; and on April 6th the urine was smoky and contained a large amount of blood and albumen. The albumen rapidly diminished, though a few blood and epithelial casts were found. The temperature returned to normal, and he appeared to be going on well until April 23rd, when the temperature rapidly rose to 105.2° and the quantity of blood and albumen again increased. By May 3rd the temperature was again normal, casts were very rarely found, but about one ounce of pus was discharged in the urine daily. At this date (June 8th) the albumen is very slight in amount, and is fully accounted for by about 1 drachm of pus which is still passed. The quantity of urine is 60 to 80 ounces daily, and the specific gravity 1015. The patient is on meat diet, sitting up, and gaining flesh. Had it not been for the unfortunate renal complication he would have been out long ago. The wound has been soundly healed for several weeks.

REFERENCE.

¹ *Annals of Surgery*, 1897, p. 239.

ON FURTHER EXPERIENCES OF DANGERS CONNECTED WITH RESPIRATION AND THEIR AVOIDANCE;

WITH SPECIAL REFERENCE TO ANÆSTHESIA, HÆMOPTYSIS,
DROWNING, APOPLEXY, AND ALL PARALYSED
AND UNCONSCIOUS CONDITIONS.

By R. L. BOWLES, M.D., F.R.C.P.

THE unconscious state which most commonly presents itself to us as coma implies loss of feeling as well as of consciousness, and a general paresis or loss of muscular sense and power. All mental and bodily powers are more or less in abeyance, and only those final organic forces, circulation and respiration, remain in action, whilst even they are then depending upon but a central spark of life to sustain their functions.

In the treatment of it, when life is threatened, it matters little which gives way first, respiration or circulation; our duty is, clearly, to keep them both in action and to prevent anything coming in the way of their easy, regular, and orderly function. It is to this department of the subject that I now propose to address myself.

For clearness I will remind you of some experimental observations on the dead body, undertaken for the late Dr. Marshall Hall in the years 1855 and 1856 by the now distinguished physician, Dr. Edward Long Fox, of Clifton, the late Mr. Charles Hunter, and myself, with the object of settling some important questions in the management of the appar-

ently drowned. Dr. Marshall Hall conceived the idea that sufficient use was not made, at that time, of the natural elasticity of the chest walls in inducing artificial respiration, and he requested us to find out how much air could be moved out of, and into, the chest, by alternate pressure and relaxation of the ribs and sternum. In the course of these experiments we found that something frequently obstructed the passage of air into the trachea when the patient lay in the supine position, and at the same time we demonstrated the nature of the obstructions we encountered. We also discovered that pronolateral movements were sufficient for effecting artificial respiration, and that the advantages of those movements (afterwards called the Marshall Hall method) over the older methods were very great, for they were considerably more ready than running for a pair of bellows and its appurtenances, better than blowing in air from our own lungs, already charged with more than 4 per cent. of the very poison we seek to get rid of, and better too than any method, such as the Sylvester, which, as advised, implies the adoption of the supine position of a helpless body.

In all unconscious, comatose, or syncopal conditions, however subtle or obscure the cause may be, whether from accident or from disease, whether from concussion or compression, whether from alcohol poisoning or from drugs, whether from suffocation or from drowning, or from any other cause, we have a condition of (in a physical sense) practical death of the body; a condition in which the patient cannot lift a finger to avert impending death, so that, if he is to be saved, it must be done by the help of those around him; he is now as much subject to the force of gravity as the dead bodies upon which we experimented in the *post-mortem* room, and if there are physical difficulties in the way interfering with respiration or circulation they must at once be removed. Anæsthesia is a condition essentially belonging to this category, but it is clinically often complicated by a mixed condition of syncope and apnoea, and it is by no means easy to separate the one from the other.

It is clear that in the syncope of anæsthesia the smallest interference with respiration is an instant danger, for to relieve lungs already surcharged with chloroform vapour we desire in the first place the expulsion of the noxious contents and to replace them with pure air. One's natural instinct is to fly to artificial respiration at once; but let us beware at such a moment of what a friend of mine calls "the vigour of fright."

In syncope the greatest care must be taken to avoid disturbance or pulling about of the body; if the ghost of a breath is being taken, wait and watch; a person nigh unto death wants very little air, metabolism is almost at a standstill, and as much air as the patient wants at that moment Nature will supply. If we wish to prevent the extinction of dying embers we do not violently disturb them by "poking the fire," or we dissipate heat, and so extinguish the spark that kept them alive. I have seen cases of illness in which it was certain that physical disturbance during syncope put the patient in imminent peril by calling on the heart for extra effort at a moment when that effort was impossible.

In 1862 the Committee of the Royal Medical and Chirurgical Society repeated our experiments of 1856, but in repeating them the Committee, in the desire to arrive at greater precision as to the amount of air respired in the two rival methods of Marshall Hall and Sylvester, introduced the tube of the pneumeter into the trachea, thus avoiding interference from the regurgitated contents of the stomach or other fluids in the pharynx, or from the gravitation of the base of the tongue or other possible physical obstructions.

This change, in the detail of the experiments of placing the tube below all possible nasal, buccal, pharyngeal, and laryngeal obstructions is a vital point for us and the public to remember, who have to trust to the natural air passages for the maintenance of respiration in any sudden difficulty; it was a change of principle, and although it effected one purpose of the Committee, namely, gauging the amount of air introduced, it led astray the unthinking, who, to spare themselves responsibility, always prefer to wait for and act upon authority.

We have seen how, from gravitation, the tongue, foreign bodies, and liquids, may entirely block the pharynx, and, indeed the trachea and bronchial tubes also; there are, however,

impediments which only partially block the way, but which by their continued presence, produce the most disastrous consequences, frequently ending even in death.

In 1857, whilst watching an old lady lying on her back in deep apoplectic stertor, with a widely-opened mouth, I observed that the sound arose from a partial obstruction of the airway, and that by hooking up the base of the tongue with my finger the sound immediately ceased, and free-and-easy breathing ensued. Realising that the obstruction arose from the gravitation of the heavy and paralysed tongue, I placed the patient on her side and propped her in that position with pillows, when at once easy respiration ensued. As I have said elsewhere, "noise in any part of the airway is a danger signal. Its importance the physician must determine. The stertor of the apoplectic state may indicate a condition equal in danger to the crowing of the croupy child or the stridor arising from the pressure of a thoracic tumour..... Stertor is, therefore, a symptom with two meanings; the noise expresses mechanical interference, and mechanical interference is an accidental concomitant of the unconsciousness. The accident which determines whether the stroke be or be not accompanied by stertor is in most cases due to the accident of the patient's happening, or not happening, to be on his back; or should he exhibit stertor while upon his side, there must be some derangement of the ordinary relations of the pharynx, such as the chin being too near the sternum, the existence of a local oedema, long uvula, large tonsils, mucus in the air tubes, pressure from without, or something which narrows the respiratory channels or vibrates in their course. Stertor, then, that discordant music of the ærian ways, must be so attuned that it no longer grates on the physician's ear, the respiration must again be brought back to the silent harmony of Nature."

I could relate to you many striking cases of successful treatment from carrying out these principles, but I will take one or two only of my own and one or two published cases of others that have been before the profession of late to illustrate some interesting relations with the principles I have just had the pleasure of bringing before you.

THE PREVENTION OF SUFFOCATION IN HÆMOPTYSIS.

On March 22nd, 1894, I was hastily summoned to an apparently dying man. I found him lying on his back on the floor, motionless, with the exception of occasional ineffectual gaspings; he was of a livid colour, and his pupils were widely dilated. The feeble pulse could occasionally be felt, but not counted. Three policemen and several coachmen were standing helplessly by. Observing blood on his clothes and about his mouth, I opened the man's shirt and rapidly surveyed, percussed, and auscultated the front of his chest; finding more percussive dullness on the right side than on the left, and that no air was entering that lung, I gently turned him on to his worst side (the right), so as to leave the better lung free, and propped him up with pillows. Each gasp now became a short gurgling inspiration, and signs of returning life began to show themselves by clutchings of the hands and spasmodic actions of the legs and an occasional moan. Some air entered the upper lung, the *râles* diminished, and the pulse became fuller and countable at 130 in the minute. I then left him in charge of Dr. Waggett, who administered a hypodermic injection of caffeine in sodium salicylate and an enema of 2 ounces of brandy. In half an hour Dr. Waggett reported that the man had quite recovered from present danger, and was talking naturally to his friends.

On the following morning I saw the man in consultation with Mr. Wise, his own medical attendant, and found him still lying on his right side, looking wonderfully better and quite himself; temperature normal, pulse 120. He was expectorating freely blood clots and bloodstained mucus. There were very few *râles* to be heard in the upper (left) lung, and the air entered quite freely, so that as far as the danger from suffocation was concerned, the man was safe.

This case recalled another, similar in its onset, different in its result, but useful as a contrast and as a demonstration of the importance of the mechanical management of such cases in practice. When going round the wards as a student, the physician, Dr. Bence Jones, commented on the salient points of a case of phthisis in a young girl who was sitting dressed on the side of her bed. Ten minutes afterwards the physician was hastily summoned from the other end of the ward to see her again, and she was dead; at least she had entirely ceased to breathe. She had been seized with hæmoptysis, the nurse had laid her on her back on the bed, and she had so become choked. At the necropsy large coagula were found in the trachea and bronchial tubes.

Lately I was taken by surprise in a case of hæmoptysis by a patient suddenly developing dyspnoea and cyanosis with starting eyeballs and dilated pupils whilst in the sitting posture. With sudden and violent effort he coughed up three or four large pinkish-grey masses similar in appearance to portions of emphysematous lung; on examination, they proved to be coagula infiltrated with numberless fine air vesicles. It appears that in his terror of increasing his blood flow, he had maintained the sitting position for some hours and had studiously avoided coughing when he felt the *râles* in his chest, so that the small oozing from the affected (right) lung had gradually found its way into the sound lung, and had become inflated into large masses by the air vesicles which had slowly formed in the coagulating blood.

GRADUAL SUFFOCATION IN APOPLEXY.

In March, 1894, I saw on the *post-mortem* table the body of a man. His face was terrible in the extreme—distorted, swollen, and purple; the eyes were open, and blood was oozing from the mouth and nose. Venesection had been performed in the left arm. I diagnosed “death from suffocation,” but was told that the man had died of apoplexy, but, with profound stertor which the venesection had in no way relieved.

DEATH FROM TEA IN THE LUNGS.

On February 23rd, 1894, Dr. Hale White reported to the Clinical Society a case of a patient suffering from diphtherial paralysis who had died suddenly whilst drinking tea; after death an ounce and a half of tea was found in the bronchial tubes. Dr. Hale White stated that after coughing for some seconds “the patient became very distressed in his breathing, exactly as if he had been suffering from asthma, there was at no time any evidence that the larynx was obstructed.” The patient was dead in less than ten minutes from his taking the tea. The pulse was good to the end. It was assumed that the patient had died of spasm of the bronchial tubes from the specific action of tea on the nerve centres, but may it not be assumed, with even more confidence, that the patient was practically drowned with tea? An ounce and a half was found after death. This is a large amount, and probably during life it was larger; quite enough, when mingled with mucus and churned into foam, to obstruct several of the main bronchi, and thus to cause fatal suffocation. At the same meeting Mr. Gould related a case of suffocation in a child with diphtherial paralysis. Tracheotomy was instantly performed and the child turned over, whereupon the bread and butter which the child had been eating ran out of the wound in a liquid form, and the child recovered.

Dr. Frederick Weber told me of a case of death from suffocation in consequence of milk having been inspired in a case of diphtherial paralysis; so that bland fluids such as water and milk will cause death when introduced into the windpipe; we need not therefore assume that the specific influence of tea had anything to do with the cause of death in the case above referred to. We know what horrible distress supervenes on even one of the large bronchi becoming suddenly plugged by a cherry stone or by a pea. In cases of drowning the amount of fluid usually found after death might not amount to more than was found in the foregoing case. It must always be remembered that the introduction of any fluid excites mucous secretion which inspissates the fluid and gives rise to foam bubbles, more or less large, and these add greatly to the difficulties of inspiration.

From these points of view it is possible that the case might have been successfully treated, either by turning the patient on one side as in the case of hæmoptysis just related, thus freeing one lung, and so giving time for the obstructed lung to relieve itself by expelling the intruded fluid; or in this case perhaps relief might even have been more immediately effected by placing the patient on his face, and pressing or striking on the back to assist the expulsion of the tea.

AN ADDRESS

ON THE

SINS OF THE TEETOTALLERS.

Delivered at the Annual Meeting of the Midland Branch of the British Medical Association.

By W. A. CARLINE, M.D.,
President of the Branch.

LADIES AND GENTLEMEN,—My first duty is to thank you for the great honour you have done me in electing me your president. No honours can carry so much prestige as those conferred by members of one's own profession, and of these president of a Branch of our Association is one of the highest.

The subject of my short address is an unusual one at these meetings, but it is one to which I have given some thought, and one which I venture to believe has been left too much in abeyance by the profession. I wish to draw your attention to some of the sins of the teetotallers, and at the outset I must put myself right with you by a little personal explanation.

I have nothing to say against abstinence from alcohol. Professionally I rarely order it for patients, and then only for a specified period. At the same time I can see no objection to persons taking alcohol, provided they do so in moderation, and because they like it, but not for the purpose of doing them good; that is, always providing they are not people devoid of that self-restraint found in a well-balanced mind. What I have to speak against, however, is the omission of the teetotallers to guide aright, and do their duty to those whom they have won to their cause. Having made a man or woman forswear alcohol, they seem to think there is nothing further to do except to provide them with literature which consists chiefly of abuse of the liquor traffic, or with meetings, whereat the same abuse is dealt out with the addition of music and song. The first thing a teetotalter requires and the last thing he thinks of is pure water.

I have had 22 consecutive numbers of one of the leading temperance papers, the *Alliance News*, carefully examined. In the 22 numbers the word “water” was found 60 times; of

these 38 are used in the sense of drinking water, of which all but 10 occur in quotations. The sole encouragement for the water drinker is contained in the following quotations. December 31st, p. 859, Mr. A. J. H. Crespi, in a letter on substitutes for alcoholic beverages, says:

“Many people clamour for substitutes. Well, I find water very palatable, and coffee and tea I don't like, but cocoa and chocolate are very good. Lemonade I rarely touch, and syrups I don't buy, while soda water I dislike. Some of my friends and guests will take lemonade, others soda water, by the quart.”

And again, April 22nd, p. 253, referring to the Atbara war, the following quotation is given of a conversation between Lady Elizabeth Biddulph and Lord Cromer:

“But what about the Nile water?” asked Lady Elizabeth.

“We have Pasteur filters in the camp,” was the reply, “and plenty of good tea and coffee, which you will find our troops will be able to fight on.”

And on the same page a quotation from the *Daily News* says:

“If there had been any whisky at hand it might have been impossible to move the whole army without the aid of the London police. The battle was fought on Nile water purified by the Pasteur filter, and then converted into the cup that cheers.”

Perhaps the *Alliance News* would consider the following more encouraging to the drinking of water. It is a quotation on p. 207, and appropriately dated April 1st:

“The *Christian Leader* says we have all heard of the captain who with a portion of his crew was cast into a shark-infested sea by the capsizing of a boat, and who, counselling the sailors to keep their legs moving to keep the sharks off, forgot meanwhile to move his own, and was snapped up while warning his men. Something of the same kind has happened to the late Father Kneipp, famous for his water cures. That his treatment did immense good to many is unquestionable; but while commending water to others, it seems that he did not provide enough for himself. He died of cancer in the stomach, and the medical verdict is that he neglected to apply water in sufficient quantities internally to keep his blood in good order.”

This is all the encouragement a water drinker obtains in nearly half a year from the *Alliance News*.

Our experience in Lincoln is that in any attempt to improve the water supply the teetotallers are either not in evidence or they are in opposition, and I do not think that our experience is at all unique.

Recently a local society was in communication with the Waterworks Committee about the pollution of our drinking water by the effluent of a sewage farm. The teetotal members of this society were not in evidence, and the teetotal members of the Waterworks Committee were in opposition. This pollution has been going on for years, and was long since condemned by the medical officer of health, but the local temperance societies have never taken any action.

In this connection and bearing on the attitude of the temperance party to a pure water supply, I will quote the following from the *Medical Press*, under date November 24th, 1897:

“One of the results of the recent waterborne epidemics of typhoid fever will be a serious backhanded blow at the advocates of water drinking. The new Mayor of King's Lynn is a total abstainer, and at the feast which celebrated his election to the civic headship he found himself unable for conscience sake to offer them any beverage stronger than water. As some sort of compensation for his restricted hospitality he fined himself 10 guineas in favour of the typhoid relief fund of his native town. There is a grim, satirical irony about his worship's action in this matter that invites a passing reflection. The typhoid fever at Lynn is due to polluted drinking water; at the Mayor's feast the guests must drink nothing but Lynn water; the Mayor gives 10 guineas to help the victims of that contaminated supply. It remains to be seen whether any part of this donation will be required on behalf of those who have partaken of his banquet. The answer to that interesting query may be expected in about a fortnight, more or less. Clearly it is in some cases safer to turn to the brewery than to the water monopolist when one wishes to slake one's thirst.”

One almost doubts if the teetotallers are really anxious to put down the use of alcoholic drinks; surely if they were