BRITISH MEDICAL JOURNAL:

BEING THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION.

EDITED BY DR. MARKHAM.

LONDON: SATURDAY, JULY 4, 1863.

Remarks

ON

DEPLETION AND EXCESSIVE (?) STIMULATION IN VERY SERIOUS CASES OF ACUTE DISEASE.

BY

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CASE. "He stated that until 2 this morning (Thursday, May 7th) nothing could be more favourable than his patient's progress towards recovery... but at 2 this morning the general awoke with an acute pain in his side; and, although Dr. — hoped that it might proceed from neuralgia, he had the greatest apprehensions in regard to pneumonia.... Upon examination, it was pronounced that the symptoms were decidedly those of pneumonia. The doctor proceeded to cup and leech him; from that moment I gave up all hope of his recovery..... May 10th. *Consummatum est*. From the violent bleeding of Thursday last he never rallied." (*Times*.)

CASE I. W. B., a well made man, in good condition, nearly six feet high; of temperate habits (drinking from one to two pints of beer daily). General health good, but he had been much exposed to wet and cold. He was one of the corps of commissioners. Admitted into King's College Hospital on December 6th, 1862. Face very dusky. Tongue furred. Some dulness at lower part of right lung behind, with crepitation and rhonchus. Urine with a trace of albumen; plenty of chloride. On the third day after admission, there was dulness over lower half of right side of chest, back and front; crepitation; no bronchial breathing. Face very dusky; great distress of breathing; pulse 92; respiration 40.

He was ordered to be cupped to five ounces. Calomel gr. v; sulphate and carbonate of magnesia; liq. ammon. acet. $\mathfrak{zss}$ every four hours. Turpentine stupes to chest.

The following day, there was active delirium; no sleep. Heart's action feeble. Still no bronchial breathing. Pulse 92; respiration 52. To take $\mathfrak{zss}$ of brandy every hour and a half.

On the sixth day after admission, the whole of the right lung was dull, except for an inch below clavicle, where the breathing was very feeble. Bronchial breathing every where audible, except above third rib. He breathes entirely with left lung. Respiration 56; pulse 120.

On the seventh day after admission, the right lung was quite solid throughout, with the exception of a small portion quite at the apex, where breathing was scarcely audible. *Could not answer questions. Tongue dry and brown; face very dusky. Motions and urine passed under him. Muttering delirium.* Profuse sweating. Pulse 120; respiration 70. Calomel gr. iij, to be repeated in six hours. Chloric ether, ammonia, laudanum $\mathfrak{mxxv}$, acetate of ammonia $\mathfrak{zss}$ every three hours. *Brandy, 12 ounces in twenty-four hours.*

Two days afterwards, loud crepitation was heard over the right lung. Dulness and bronchial breathing, as before. Expectoration commenced for the first time; sputa rusty.

Some might consider that this man ought to have been bled freely, in consequence of the low delirium; the motions and urine being passed under him; the great oppression of breathing, which was 70 in the minute; with congestion of the superficial vessels and profuse sweating. It is a fact that the treatment to which he was subjected did not prevent the resolution of the inflammation or destroy life by its effects upon the respiration; although this tall, strong man was breathing with one lung only.

CASE II. On June 4th, a well nourished, temperate man, aged 27, a joiner, was admitted into King's College Hospital with rheumatic pains in several joints and some uneasiness about the region of the heart. Pulse 116; respiration 31. Drachm doses of bicarbonate of potash were given, and one grain of opium every four hours. The day following, the urine was neutral, and contained an abundant deposit of triple phosphate.

Two days after admission, there was a distinct to and fro rub over the heart. Bronchial breathing was heard over a space as large as a five-shilling piece at the back of the left lung. Four ounces of blood were immediately taken by cupping.

The following day, the patient was lower, although he had been taking six ounces of brandy, as well as chloric ether and sal volatile. Pulse 120; respirations 44; the respirations very short and catching; and he could only articulate two short words consecutively.

About eight days after admission, the rubbing sound had disappeared. The cardiac dulness extended to an inch and a half to the right of the sternum, and as high as the third rib; dulness and bronchial breathing from the spine of the scapula downwards to the base of the left lung, extending round to the centre of the lateral region. Dulness and absence of respiratory sounds below the spine of the right scapula. Voice-sounds ægophonic. No vocal fremitus. Breathing in front of both lungs good. Resonance. Pulse 132, feeble, but regular; respiration 43, very short, and but little air introduced at each effort. No delirium. He dozes occasionally. Urine about forty ounces; high coloured; abundance of chloride; numerous crystals of triple phosphate.

Treatment at this Period. Strong beef-tea, two pints.

Brandy, half an ounce every half hour—twenty-four ounces in twenty-four hours.

Dover's powder, gr. x, every four hours:—six grains of opium in twenty-four hours.

Solution of acetate of ammonia, $\mathfrak{zss}$. Sal volatile, $\mathfrak{zss}$. Chloric ether, $\mathfrak{mxx}$ every two hours.

An ointment, composed of strong mercurial ointment $\mathfrak{zj}$, and powdered opium gr. x, to be smeared on lint, and kept constantly applied to heart.

Turpentine stupes. Dry cupping occasionally.

This treatment was continued without variation for seven days.* During this time there had been no delirium. The cardiac dulness had returned to its normal extent by June 16th. The bronchial breathing at the side of the chest had been replaced by the ordinary

* The brandy was kept up at twenty-four ounces for eleven days.

respiratory sound. The physical signs at the back of the chest were the same. Pulse 120; respiration 32. There had been free sweating and moderate purgation. Urine about fifty ounces; large deposit of triple phosphate. During the last two or three days the man has been able to read. He has not at any time felt as if he had taken brandy in any quantity.

There is not the slightest doubt that the man swallowed all that was ordered for him. In seven days he consumed fourteen pints of beef-tea, *eight pints and a half of brandy*, forty-two grains of opium, besides liquor ammoniæ acetatis, sal volatile, and chloric ether.

At the commencement of the treatment, there seemed little hope of recovery. After it had been continued for seven days, the patient's state was most hopeful.

The patient was most carefully watched, and his condition steadily but very slowly improved from day to day.

The stimulant was *very gradually increased* as follows on different days: 4 oz., 6 oz., 8 oz., 10 oz., 15 oz., 18 oz., 24 oz.

It is certain, that neither the very rapid respiration, nor the pneumonia, nor the pleurisy, nor the effusion in the pericardium, were augmented by the brandy.

It is certain, that the respiration diminished in frequency, that resolution of the pneumonia commenced, and that the fluid in the pericardium was absorbed under this treatment.

It is certain, that the brandy did not produce intoxication.

It is certain, the treatment did no harm; but some may hold the opinion that it exerted no influence whatever, and that, if less decided measures had been taken, the result would have been the same.

Some of those who saw the case at the beginning of the week thought that the man would die under any circumstances; and considered at the end of the week that he would have died but for the extreme measures taken. This, it is true, is but an opinion.

That a man suffering from acute rheumatism, complicated with *very considerable effusion in the pericardium*, pneumonia of the lower lobe of one lung, and pleurisy on the opposite side, with a pulse of 120 to 132, and respiration from 30 to 70, *lived for seven days* while subjected to the above treatment, is a fact.

Although the arguments advanced in favour of depletion in acute inflammations and fevers have again and again been refuted, the idea that blood should be taken in inflammatory diseases still seems to be acted upon. If a patient has too much blood for the requirements of the system, or if the vessels of a particular part are over distended, it is obvious that general or local bleeding to a moderate extent may be of advantage to the patient; but, undoubtedly, there still exists an impression that depletion is the right treatment to be pursued to combat inflammation.

It seems to be the opinion of some practitioners that pneumonia should be treated by depletion; nor is the general condition of the patient always considered. Attention is directed to the disease solely; and blood is taken because the practitioner believes that early bleeding will stop the spread of the inflammation, if not cause resolution of that already set up.

The old principles are still to some extent be-

lieved and timidly acted upon; but few of those practitioners who hold that bleeding will cut short inflammation will be inclined to exhibit consistency in carrying out their principle. Some will bleed *because* there is pneumonia, and may deplete again *because* the pneumonia has increased; but no one will in these days bleed again and again if the disease continues to advance; nor would any one bleed very largely in what appeared to be a hopeless case from the first, as would have been the practice formerly.

The old theory of the nature of inflammation still continues; and the old practice based on it, although long since proved to be erroneous, is still acted upon to a limited extent; and both theory and practice prevent us from observing clinical facts without prejudice. Though forced to give up the old system of depletion, there are comparatively few practitioners who believe that when a large amount of lung is hepatized, and the patient breathing sixty or seventy in a minute, that it is right to give large quantities of stimulants. There are few who can completely abandon the notion that inflammatory processes are excited by stimulants—that to give stimulants in inflammation is to add fuel to the fire.

Nevertheless, it is admitted in practice that no severe case of pneumonia could be saved by active depletion; for it is known that time is required for the absorption of the matter occupying the air-cells of the lung. In a very severe case, the most momentous subject for consideration is how to keep the patient alive long enough for the process of absorption to take place; not how the *inflammatory process* may be cut short, reduced, or removed. For this purpose a line of treatment the very opposite to depletion must be adopted.

Many cases prove that, what would be called by many, excessive stimulation does not *prevent* the rapid resolution of pneumonia. Stimulants do not increase inflammation, nor do they prevent absorption. Although the whole of one lung may be solid, excessive stimulation does not increase the rapidity or embarrassment of the breathing. In extreme cases, by excessive stimulation, life may be prolonged for a sufficient time to allow of the reabsorption of the matters effused. Disease is not *cured* by stimulants; but the patient may be kept alive long enough to get well. Here and there a life may be saved by giving as much stimulant as is possible; but by carrying the opposite system to extremes, death is a necessary consequence.

In desperate cases of fever, pneumonia, rheumatic fever, and in other conditions where there is intense exhaustion, stimulation may be safely pushed to the utmost extent possible.

I shall not now discuss *how* stimulants in very large quantity influence disease, but shall, in conclusion, beg permission to direct attention to certain clinical facts which have been observed in many bad cases of pneumonia and rheumatic fever, placed under the influence of large quantities of stimulants (*eighteen ounces of brandy and upwards in twenty-four hours*).

1. The pneumonia does not extend.
2. The embarrassment of respiration is not increased, nor is the breathing increased in frequency.
3. The inflammatory products are absorbed, and free excretion goes on.

4. The pulse is not increased ; but diminishes in frequency, and increases in power.

5. Delirium is not caused, but may be prevented from occurring ; or if present, may diminish or cease.

6. The tongue may remain moist or become moist, and the fever diminish while a patient is taking *twenty-four ounces of brandy in as many hours.*

Original Communications.

CASES OF DIPHTHERIA.

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HITHERTO there has been no epidemic of diphtheria in Cambridge, though isolated cases have occurred from time to time. The following are some of those which I have seen.

CASE I. *Albuminuria and Paralysis following.* An undergraduate, tall, thin, and not strong, coming from Norwich in the autumn of 1860, caught cold and had rather severe diphtheria. The tincture of the sesquichloride of iron, wine and beef-tea, gargling and sponging the fauces with solution of chlorinated soda, constituted the treatment. The throat gradually cleared ; but he remained weak, and returned home. There the urine became loaded with albumen, almost solidifying under heat, and was of low specific gravity. Partial paralysis of all the voluntary muscles supervened ; he could scarcely stand ; could not button or unbutton his clothes ; deglutition was slow and difficult, and articulation hesitating and imperfect. Most serious apprehensions were entertained by his friends and medical attendant. I advised his immediate removal to the seaside in the south of England, so that he might be taken out into the air several times a day. He went to Hastings, and lived almost in the open air. Improvement began at once. He slowly regained voluntary power and general strength ; the albumen decreased in the urine, and finally disappeared ; he returned to Cambridge in the spring, and has been well ever since.

CASE II. *Tracheotomy affording temporary Relief.* Miss —, aged about 15, rather delicate, with large tonsils, had severe diphtheria, without apparent cause, in the summer of 1862. The swelling of the tonsils, fauces, and surrounding glands, with thick, dirty white deposit upon the fauces and adjacent parts, caused so much difficulty of breathing that we were meditating removal of the tonsils or tracheotomy. I thought removal of the tonsils, which met in the middle line, would afford some relief ; perhaps as much as opening the trachea, because the impediment was evidently in the isthmus faucium. However, the difficulty of breathing had in two hours increased so greatly that it was desirable to resort to the more sure method, if to any. Accordingly, I opened the trachea, and placed a tube in it. At the time of the operation, the breathing was greatly embarrassed, the lips quite blue, and she was scarcely conscious. Chloroform was administered, and did not increase the dyspnœa. After the operation, the breathing was easier ; colour and consciousness were restored ; she slept ; and, for twenty-four hours, hopes of recovery were entertained. These were soon disappointed by a recurrence of the dyspnœa, now depending evidently upon effusion into the bronchial tubes ; and shreds and flakes of dirty membranous lymph were occasionally coughed up through the tube. She died about forty hours after the operation.

CASE III. *Removal of Uvula ; Temporary Relief.* Mr. —, aged 25, was in the habit of going before breakfast

to his garden, and mixing some very fœtid materials composed of urine and other ingredients, for manure. The emanations from this used to "stick about his throat" for some time ; and, in July 1862, he was attacked with severe diphtheria. He was so nearly choked that he longed for some operation to relieve him ; and I saw him with his medical attendant. There was swelling of the fauces, and a thick foul membranous coating upon them and the soft palate. The uvula was much enlarged and coated, and, nearly filling up the isthmus faucium, seemed to be the chief cause of the dyspnœa. I accordingly removed it ; and the relief given was so great, that his friends considered the danger was gone ; he took food well, and even went down next day into his shop. That night he became restless, and breathing was quicker ; and the following day he was weak ; respiration was noisy and much embarrassed, apparently from effusion into the bronchial tubes. He died in the night.

CASE IV. *Affecting the Larynx and Bronchi only ; Temporary Relief from Tracheotomy.* Master —, aged 14, came home from school in March 1862 with slight sore-throat. This subsided, but was followed by difficulty of breathing. Leeches, aperients, etc., were employed by the medical man ; but, the symptoms not diminishing, I saw him. There was nothing abnormal in the throat ; but he had cough, thickness of voice, and difficult noisy inspiration ; the noise indicating that the difficulty was in the larynx. Slight tenderness about the larynx. The symptoms not being very urgent, we agreed to try soothing applications, in the form of inhalations and external application, and free mercurial inunction. In twenty-four hours, the dyspnœa had rather increased, and he was weaker. Accordingly, I opened the trachea, and placed a tube in it. For a few hours he was relieved, and promised recovery. Soon, however, he became restless again and weak, with increasing dyspnœa ; and died two days after the operation. We found the mucous membrane of the larynx, and of the trachea and bronchial tubes, large and small, coated with a thin layer of dirty false membrane, not like that in ordinary croup, but similar to that which I have seen in other cases of diphtheria.

CASE V. *Affecting Nose, Fauces, Eye, and Pericranium.* An infant, two months old, had what appeared to be severe cold in the nose. This caused a good deal of difficulty in breathing ; but a violent convulsive fit was the first serious note of alarm. I saw the child then with the gentleman in attendance. The nostrils were blocked up by whitish, tenacious, semimembranous secretion, which was evidently of diphtheritic character ; and, in a day or two, there was a thin film of the like substance upon the edge of the palate. By careful syringing, the nostrils were cleared and the child breathed better ; the throat also improved, and she took food pretty well, so that we had good hope of recovery. The improvement, however, did not continue ; and after a few days the eyelids of one eye were lined with a yellowish white film, which, in spite of careful removal and frequent syringing with water and mild astringent solutions, spread over the rest of the conjunctiva ; the cornea became opaque, and gave way. A periosteal swelling was observed upon the forehead, followed by others upon the temple and occiput. The coating reappeared upon the fauces ; the child refused its nourishment, and died two weeks from the commencement of the attack.

CASE VI. *Hemiplegia Supervening.* Master —, aged 11, in a neighbouring village where diphtheria was prevalent, was attacked in March 1863. When I saw him a few days afterwards, on March 7th, the false membrane was beginning to separate from the fauces, under frequent gargling with biborate of soda and liberal diet prescribed by the surgeon in attendance. He had much pain in swallowing ; and there was some difficulty in inducing him to take food. He appeared, however, to be