REMARKS

ON

THE TREATMENT OF ABSCESSES BY
HYPERDISTENSION WITH
CARBOLISED WATER.*By GEORGE W. CALLENDER, F.R.S.,
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WE are familiar with the good result which follows the washing out of the sac of an abscess with carbolised water, and afterwards draining it. In some cases, however, abscesses are divided by septa, or have extended amongst tissues so as to form several chambers communicating by narrow passages. They are practically multilocular, and, if washed out in an ordinary way, are not effectually treated, because parts of them are apt to be inefficiently cleansed. In the treatment of all abscesses, but more especially for those with branching sinuses, or with a sac broken up by imperfect septa, we have found it desirable not merely to wash out the abscess in what, for distinction, may be termed the ordinary way, but to throw in such a quantity of fluid as will distend the abscess-sac in all its parts; and this procedure we speak of as hyperdistension of an abscess-cavity. In this manner, abscesses complicated in the way I have mentioned may be cured as effectually as are those in which we have to deal with a single cavity.

The operation may be performed whilst the patient is under the influence of ether, or the integuments may be frozen by the ether-spray. The following are required:—A scalpel where an incision is needed, no open sinus existing; carbolic acid lotion (one part in twenty) diluted to one in thirty by the addition of warm water before using it; a perforated elastic drainage-tube; carbolised oil (one in twelve) on lint for dressing the wound, and gutta-percha tissue for covering this; some ordinary adhesive plaster; some tenax to receive any subsequent discharge (which, however, is very slight); an ordinary two or four-ounce syringe. When it is desirable to make continuous pressure over an abscess after opening it, a pad shaped to the needs of the case, and filled with shot, will be found useful. It acts more effectually than a sand-bag, and is easily made and adapted.

The operation is begun by cutting into the abscess (if no sinus exist), the opening made being of sufficient size to admit one of the fingers. The pus is then allowed to escape, the abscess being emptied as completely as possible. The nozzle of a syringe is next passed through the opening, and the skin is drawn closely around it by the operator with his left hand; the contents of the syringe are then passed into the abscess-sac. Care must be taken in doing this, that no pressure is made upon the abscess-wall, or the distension of the sac will be incomplete. Either by using a syringe which throws a continuous stream, or equally well by closing the wound with a finger whilst the syringe is being refilled by an assistant (very little fluid being lost in its reintroduction), the abscess-sac will presently distend quite to, or even beyond, its original size; and, under these circumstances, the carbolised water necessarily finds its way (as a rule, which has few exceptions) into all parts of the cavity, however irregular, and along any channels leading from it. When the abscess has been opened, the amount of injection may be roughly measured as being rather in excess of the quantity of pus let out. When distension has been effected, the fluid is allowed to escape, and, if much pus be mingled with it, a second injection may be practised. An elastic drainage-tube, its size varying with that of the abscess, is then inserted and secured, and over the end of this, and over the wound, a piece of lint, twice folded and soaked in carbolised oil, is laid. This is covered with a sheet of gutta-percha tissue and some tenax, and these dressings are secured with some ordinary plaster.

Subsequent treatment consists in the renewal of the dressings, which, to myself, it seems desirable to see to daily. The drainage-tube is gradually shortened as the abscess-wall contracts, and through its canal, if there be any sign of puriform discharge, a little carbolised water may be occasionally injected.

It is scarcely necessary for me to add that, under this treatment, the discharge of pus ceases; a limpid serous fluid in small quantity drains

away, and presently only a sinus remains; that is, in cases in which there is a persistent source of irritation. These are facts which surgeons have already described.

The point I wish to bring before the Section is, that by hyperdistension of an abscess-sac the carbolised water can be forced into cavities complicated and irregular, and that treatment can thus effect for such complicated abscesses (amongst which may be classed cases of empyema) the same result as an ordinary injection will ensure with a simple abscess.

As for the result of this treatment, so far as bone-carics is concerned, my observations do not at present allow my drawing any absolute conclusions; but that the abscesses connected with such disease can be emptied and reduced to non-suppurating sinuses, and this without causing the least constitutional disturbance, whilst the health of the patient is improved by the cessation of the suppuration, is clearly established.

I may add that, for these as for other cases, we do not employ the carbolised spray, or adopt any precautions during or after the operation beyond those mentioned, taking care only that the well established rules for surgical treatment are strictly attended to.

CASE I. *Angular Curvature of the Spine, with Abscess.*—C. B., aged 16, was admitted into Darken Ward on June 24th, 1876. He had been ill for three years. His health was first broken by an attack of rheumatic fever, and this was followed by symptoms of disease of the left hip, and later on by an abscess which formed in connection with the joint-affection. This abscess had been repeatedly aspirated in one of the London hospitals, and now discharged through a sinus. About eighteen months ago, he began to suffer from the spinal affection, and soon afterwards a swelling began to form in the right lumbar space. There was considerable deformity in the lower dorsal and upper lumbar regions, causing an angular curvature of the spine, and the swelling was an ordinary lumbar abscess formed in connection with the morbid changes in the vertebrae. The general condition of the boy was fair, but he was much emaciated, and was disturbed, especially at night, by pain, and he was unable to rest upon the back: a trouble which was considerable, because of the hip-affection, to which reference has been made, but further notice of which is not required. It may, however, be added that the patient suffered from rheumatic disease of the valves of the heart. On July 4th, the pain from the abscess had increased, and, on the 6th, it was thought desirable to relieve it.

An incision was, therefore, made into the abscess sufficiently large to admit the index-finger, and twelve ounces of pus escaped. By means of an ordinary syringe, the sac of the abscess was then distended with carbolised water. When tense, the fluid injected was allowed to escape. A second distension was then practised, and, after removal of this fluid, an elastic drainage-tube was introduced. The wound was covered with carbolised oil on lint, and this with a piece of gutta-percha tissue. A slight serous oozing followed, which has now (July 27th) ceased, and the sinus is a mere track leading to the diseased vertebrae. The pulse, which was affected by the heart-disease, varied from 106 to 112, the temperature from 99 deg. to 99.4 deg., on one occasion rising to 100.4 deg. There was no constitutional disturbance consequent upon the operation, and the boy was free throughout from pain. The patient remains under observation because of his other troubles.

CASE II. *Disease of Upper Lumbar Vertebrae: Abscess.*—A male child, aged 2, was admitted into Lawrence Ward, having for six months suffered from a tumour in the left lumbar region. This was found to be an abscess formed in connection with disease of the upper lumbar vertebrae, an angular curvature existing. The abscess was remarkable for its extension forwards in a branched manner, and, at two points in this direction, it threatened to break through the skin, and subsequent examination with the finger showed that it consisted of at least three chambers or cavities communicating one with another by narrow passages. On June 19th, the abscess was opened between the points at which it threatened to break and the middle line (posteriorly). The cavity having been explored by the index-finger, and its character recognised, the chambers were washed out by carbolic lotion, care being taken freely to distend all parts of the abscess-wall, a drainage-tube was introduced, and the wound was dressed as in the preceding case. A little serous discharge followed. There was no constitutional disturbance, the pulse varying from 108 to 84, and the temperature from 98.8 deg. to 99.8 deg. But, on the sixth day, some of the serous fluid was allowed, on purpose, to be retained, and the pulse rose to 140 and the temperature to 102 deg. On again cleaning the wound, they fell to—pulse, 96; temperature, 99.8 deg. On the eleventh day, I again allowed some of the discharge to be retained, and the pulse rose in the day to 120, and the temperature to 100 deg., falling again to the normal points immediately on the reintroduction of the drainage-tube. The wound has now (July 27th) closed to a simple sinus without

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purulent discharge, and the child is playing about in bed. He is kept in the hospital, as he is being fitted with a spinal support.

I relate this case, as it shows the rapidity with which irritation follows upon the withdrawal of the drainage-tube and the consequent retention of a small quantity of discharge. It also seems to me to point, as does the preceding case, to the possible good effects produced by the opening and cleansing of the abscess upon the quieting, perhaps even the arresting, of the carious affection of the spine. This point has attracted the attention of other observers.

CASE III. *Perinephritic Abscess from Calculus in Kidney.*—In this instance, the patient suffered from a large chronic abscess about a kidney, in consequence of the formation of a calculus in its pelvis (perinephritic abscess). W. L., aged 56, was admitted into Darken Ward on March 28th, 1876. He had been ailing for five years, his water being reported as at times having been very thick. Lately, he had been obliged to pass urine every hour or two, and had had symptoms which led to his being sounded for stone. The urine had latterly become clearer, but, three weeks ago, he had noticed a swelling in the left loin, where also there arose a great pain. On examination, a large abscess was found in the lumbar region. Pulse, 110; temperature, 102.4 deg.; respirations, 23. On March 31st, the abscess was aspirated, and forty-eight ounces of pus were removed. On April 10th, it was aspirated to twenty ounces; on May 11th, it was aspirated to twenty-one ounces and a half; on June 3rd, it was opened, and thirty-six ounces of pus were let out.

On introducing a probe, it met with septa in various directions; but, by manoeuvring, it was at last directed towards the right kidney, and struck against a mass of impacted calculus. The patient was now in a very feeble condition. Pulse, 128; temperature, 101.2 deg.; respirations, 28. He refused food, and sordes were found about the lips and teeth. He was becoming exhausted by the discharge. The only good point about him was, that the urine was better retained, and was clear.

Whilst he was in this state on June 6th, I decided upon endeavouring to distend the abscess-sac, which was effectually done twice; a drainage-tube was inserted and the usual dressings applied. The next morning, the pulse was 92, temperature 99.2 deg., and the respirations natural. The patient felt better; was free from pain, and there was scarcely any discharge. For a few days, a small quantity of limpid fluid exuded, and occasionally the contracting sac was washed with a small quantity of carbolic water. I do not know that this was absolutely needed, but I was anxious to ensure perfect cleanliness. The patient's general condition rapidly improved, and, on June 27th, he was up and about. He was sent home into the country to recruit his health, having been instructed to keep the sinus open, and, when he returns, he will do so, that we may consult as to the propriety of practising an operation for the removal of the calculus from the pelvis of the kidney.

BULBAR PARALYSIS.

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THE disease whose especial clinical features my paper relates is best known in this country as labio-glosso-laryngeal paralysis, but I have adopted the name of bulbar "paralysis"—a name which was first introduced by Wachsmuth. It is much shorter, and directs the attention at once to the seat of the pathological lesion of the nervous centre—namely, the medulla oblongata, from which the facial, trigeminal, glosso-pharyngeal, pneumogastric, and spinal accessory nerves take their origin; and as, at some period or other during the course of the disease, all these nerves are implicated, it is evident that the term "labio-glosso-laryngeal paralysis" conveys a very inadequate idea of the parts involved.

The disease was first noticed by Trousseau in 1841; but it was not until twenty years later that its clinical features were more accurately described, both by himself and by Duchenne of Boulogne. Since then, however, scarcely any disease of the nervous system has been more written about, either directly or indirectly, than paralysis of the parts concerned in expression and speech. To our own countryman Dr. Hughlings Jackson, we are undoubtedly much indebted for the admirable and original work he has done in this as in other branches of nervous disease.

Statistics prove that this malady prevails more among men than women, in the proportion of two to one. It does not carry with it any history of heredity, unless we take into consideration those progressive forms of bulbar paralysis which are by no means infrequently found in

large lunatic asylums, and which are mere continuations of morbid changes in the nerve-substance of the brain and spinal cord.

It has been my experience, and I do not think it will found to be an exceptional one, that paralysis of those parts receiving motor power from nerves originating in the medulla oblongata is extremely rare, unless associated with change in the encephalon or spinal cord. Some few cases have been placed on record where the anterior pyramids, olivary bodies, and lateral tracts were the seats of morbid growths; but these are rare, and can scarcely be said to influence the general question. No one doubts that the medulla might be the seat of a primary interstitial neuritis, resulting in progressive palsy known as glosso-laryngeal paralysis; but this I must hold to be exceptional. I know that there are many men of the highest eminence who maintain that, in its etiology, this form of paralysis is essentially of syphilitic origin; but this does not accord with my own observation, and I am fully persuaded that, in many instances, it is an erroneous supposition. That syphilis is a fertile source of origin for many obscure forms of disease, I have no wish to deny; but I utterly repudiate the fashion which at present prevails, and which ascribes unknown morbid conditions to the effects of syphilis, because these conditions apparently yield after large doses of iodide of potassium have been administered.

I can hardly see how it is possible for syphilitic disease of the membranes, and of the vessels covering the medulla, to produce sufficient lesion of the bulbar roots to give rise to this distinct form of paralysis. The arterial change might advance to the most minute vessels supplying the various nuclei with blood. Then one can understand a lesion of the nerves as a sequence.

I have had a case of basic cerebro-spinal meningitis, where the medulla has been covered with corpuscular lymphoid material, invading its entire surface, yet, during life, there has been no lesion of the bulbar nerves. I have long considered that (as before stated), from its progressive character, the bulbar lesion is of an essentially inflammatory nature; although, in four of my cases, where the bulbar paralysis was most marked, it came on suddenly, associated with paralysis of the extremities.

Again, we know full well that a pseudo-bulbar paralysis can exist, caused by central brain-change, whether this change be the effect of hæmorrhage or of vascular plugging producing mere inanition; and this is more especially the case when such changes originate in the body of the pons Varolii, effecting absolute inhibition of the medullary nerve-centres, and in this case no lesion can be detected after death in the nuclei of origin in the medulla. And this leads us to the consideration of another cause, namely, reflex agency—a rare condition; but I have had one case, which I shall presently detail. I have seen many cases of diphtheritic paralysis, but never one where the tongue has been affected.

Hysterical bulbar paralysis I have never seen, and do not believe in; but I have at present under my care a case, which will be described further on, of amyotrophic lateral sclerosis of the spinal cord and medulla, involving all the cranial nerves, except the first, second, and third. In this case, no power can depress the lower jaw, or make the patient depress it by a conscious voluntary effort. When, however, food is brought to her, the lower jaw falls. I believe it falls by a process as purely automatic as is that of the sucking of the new-born child at the mother's breast.

Thus we find that the causes of bulbar paralysis are numerous, and can be divided into direct and indirect:

DIRECT.

1. Progressive interstitial neuritis
2. Thrombosis of medullary vessels.
3. Hæmorrhage.
4. Morbid growths.
5. Vascular spasm.

INDIRECT.

1. Reflex action from peripheral irritation.
2. Inhibition from shock to central cerebral ganglia.

To all who have considered the physiology of the nervous centres, it must have been apparent that the medulla oblongata constitutes a focus or centre, from which proceed those nerves intimately connected with the phenomena of vitality. Here, in fact, resides (possibly) the seat of sensation (Schroeder van der Kolk). Here, reflex movements pass over to the opposite side; here is the centre of automatic respiratory motions and of deglutition; hence the vagus nerve derives its remarkable influence upon the heart, and an irritated condition of this part produces an excitation of the sexual organs, and influences the secretory action of the kidneys.

And there is abundant proof to show that the vascular supply of the medulla, especially of the corpora olivaria, and the ganglionic cell-groups