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ST. GEORGE'S HOSPITAL.

ANEURISM TREATED BY PRESSURE, ILLUSTRATED BY A SERIES OF CASES.

By T. HOLMES, Esq., Surgical Registrar to the Hospital.

[Concluded from page 515.]

CASE VI. *Laceration of the Right Lung, accompanied, but not produced, by Fracture of the Ribs on the same Side: Death.* The admirable arrangements of our much abused government, and the admirable good temper and good sense of our still more libelled populace, caused the great festivity of the 29th of May to go off with an absence of danger to life or injury to property which I believe could hardly have been anticipated in any other capital in Europe. It was not, however, possible that so great a crowd could be collected, especially for the purpose of witnessing the discharge of innumerable fireworks, without some accidents of more or less gravity. Amongst those which were brought into St. George's I have to record one which unhappily terminated fatally (the only one which has done or is likely to do so). It affords not a very good, but still a sufficiently suggestive example, of an injury that seems to be rare, but to which the attention of the profession has been lately directed by an excellent paper in the *Memoires de la Société de Chirurgie de Paris*, which I would recommend to the perusal of your readers. I mean rupture of the lung, unconnected with fracture of the corresponding ribs. In the case I am about to describe, there was, it is true, fracture, and that very extensive, of the ribs on the same side as the lung which was lacerated, but this fracture had not produced the laceration directly (I mean, by the contact of one of the fractured ends), as was proved by the integrity of the pleura costalis. The same force which produced the fracture seems to have produced also the laceration; and there are, I conceive, two ways in which this may be effected; viz., either by the local action of pressure at the part, or by its general action diffused and falling on a more distant part. In either case, it is necessary that the glottis should be closed, and so the column of air lying on the opposite side of the tissue of the lung to that acted upon by the force be made to furnish a point of resistance. This being so, in the first class of cases the force will compress the portion of pulmonary tissue lying beneath its point of action, between itself and the fixed column of air, and thus rupture it; in the second, it will succeed in displacing the same column of air so far as to drive an under portion into some other part of the lung, which then gives way under the distension. This explanation is, I believe, substantially the same with that of the writer above referred to.

The injury is by no means uniformly fatal. In the article I have above referred to, cases may be read in which this lesion was diagnosed, and apparently with perfect accuracy, during life, and in which the patients made a good and permanent recovery.

I am sorry that the notes I was able to obtain of this case are so vague and scanty; but the attempts to examine the chest produced so much terror, and apparently so much suffering, that it was impossible to proceed with

them; nor would it have been of much use to do so, as her constant cries obscured the other sounds.

Louisa C., aged 2½ years, was admitted on May 29th, on account of an accident, a cab having passed over her chest. On admission, no bruise of the part was seen, and no fracture of the ribs was to be detected. She breathed very frequently, and apparently with pain. A peculiar thrill was felt on applying the hand to the right side of the chest, and it was thought that a to-and-fro sound could be heard in the pleural cavity; but it was quite impossible to examine her chest stethoscopically, as she was in great fear of any examination, and immediately began to move about and scream. The colour of the face was good, and the breath tolerably strong.

She went on without fresh symptoms for three days, except increasing weakness. Her restlessness prevented any reliable description of the stethoscopic signs from being obtained, though many attempts were made to examine her. She sank at last, more, as it seemed, from weakness than dyspnoea, as the breathing, though it had been excessively hurried all along (sometimes as rapid as 80 in a minute), was not laboured, nor the features discoloured. There was a little barking cough all along, but this was not a prominent symptom.

On examination, a large quantity of recently effused blood, partly fluid, was found in the right pleural cavity. The pleura pulmonalis was coated with a layer of recently effused lymph, and adherent over a great part of its surface to the pleura costalis. There was an extensive laceration of the back part of the right lung. On removing the contents of the right pleural cavity, the pleura costalis was found perfectly smooth in every part, and there was no appearance of fractured ribs. On removing the coverings of the chest, however, it was found that there was a separation between the first rib and its costal cartilage, and all the ribs on that side were found fractured opposite their angles, except the eleventh and twelfth. There was no displacement of the fractured ends. Nothing worth noting was seen on the opposite side of the chest, or in other parts of the body.

I take the above description of the *post mortem* appearances from the hospital book. The laceration was, as well as I remember, about an inch and a half long in the pleural covering of the lung, and into a large cavity (the tissue of the lung having apparently retracted from the lacerated portion), which might contain a walnut. The fracture of the ribs was not detected, although carefully looked for, by any of those present at the *post mortem* examination, until the soft parts were cleared off the bones. It is reasonable, therefore, to conclude (though the point is not expressly mentioned in the notes), that the fractured bones were held together by untorn periosteum.

REMARKS. The series of cases of aneurism treated by compression, which I have laid before your readers, is not adduced on account of any extraordinary success obtained in their treatment, but as displaying a few interesting peculiarities in their symptoms and course, and suggesting some points worth considering in determining the treatment to be pursued in any given case.

There are several points to be considered in choosing between the treatment by compression and that by ligature. In the first place, the former plan of treatment is usually very protracted, and tries severely the powers of patients constitutionally irritable from dissipated habits or previous ill health. This is exemplified by the first case in my series, in which, although the aneurism had been nearly cured by the compression, the treatment had proved so

irritating and painful that it was found necessary to abandon it. So, in the third case, the patient had become much irritated and exhausted by the employment of pressure before the failure of that plan rendered it necessary to tie the artery. I am aware that the compression treatment is not always so tedious, and that, in the hands of the Dublin surgeons, it has succeeded in a few hours; but such cases as these must, I should suppose, be rare. In all these five patients, except the second, there is every reason for supposing that the instruments were kept on steadily, and with sufficient, yet not excessive, force. In the first, whom I had under my own observation as house-surgeon, I satisfied myself, by constant visits night and day for two days, that the pressure was kept on with the proper direction and due force; and, after those two days were over, I had every reason to believe that the pressure was efficiently maintained. All the others have been under the constant care of experienced nurses, and were themselves persons of intelligence, who soon learned the art of managing the instruments, and who were all extremely anxious for a speedy cure. The importance of securing the assistance of vigilant attendants is shown in the second case, where the same treatment which had proved quite useless for months of lax discipline succeeded perfectly in a few days of better management.

I should, therefore, consider that the first contra-indication to the long continued use of compression in the treatment of aneurism would be constitutional irritability or failing health in the subject of the disease. The second I believe to be the position of the aneurism. When this latter lies in contiguity with the knee-joint (a fact which may be generally determined with an approach to certainty from the peculiar sensation communicated to the hand by the artery, raised on the swelling. V. Case III), the case will generally be observed to present much more urgent symptoms, and to call for proportionally prompt measures. The form and size of the opening is also a matter which must exercise the most important influence on the success of this method of treatment. When, for instance, as in Case IV, the disease is more of the nature of aneurismal dilatation, it is, I believe, vain to hope for cure by any method which does not entirely cut off for a time the circulation of blood through the tumour—a result hardly to be obtained by the compression treatment, without an amount of force which cannot be borne for more than a very short period. The size of the opening may, of course, be judged of by the loudness of the murmur, and by the time which the tumour requires to fill; and, therefore, an aneurism in which the bruit is loud and rasping, while the sac fills and empties itself slowly, is far more likely to be cured rapidly by pressure than one in which these conditions are reversed.

These few considerations will serve, I think, to remind us of the principal contra-indications to the long continued use of pressure: but are there any circumstances which forbid entirely the use of this method of treatment? I believe not, so long as the sac continues entire. While this is the case, and the general health of the patient is not so much deteriorated as to render some immediate and decisive step necessary, the diminution of the force of the circulation on the tumour cannot be otherwise than beneficial directly; while the enlargement of the collateral branches which must follow, from the diminution of the stream of blood in the artery below the instrument, while in the part above it remains of course the same, must have a very beneficial indirect influence upon the result of an operation by ligature, should that be found at last necessary. It is obvious that the risk of gangrene must be materially diminished when the lower extremity is already in great part nourished by the intervention of a fresh system of vessels. It is true that, in my third case, gangrene did occur after ligature of the femoral, where pressure had been used for some time; but it seems probable, from the symptoms and course of that case, that the pressure had not been applied efficiently and in the proper direction. In fact, it was not easy to keep an instrument on

each thigh, of the pattern of the Dublin instruments. A much lighter and more manageable *preace-artère* has recently been in use at St. George's (the invention, if I am not mistaken, of Mr. Blair, of St. James's Street), which acts very much in the same manner as the fingers of a man's hand; the broad part (representing the palm) lying below and outside the thigh, and the pad (representing the end of the fingers) being moveable on the connecting arm by a simple rack and pinion. This apparatus, presenting no projecting screws, etc., is not liable to be displaced as the other is by slight movements of the body, or by a similar instrument applied to the opposite thigh; while it is far more easily managed by the patient, there being but one simple screw to look after; and its lightness makes it far more comfortable to wear.

The last case I have quoted will show, I think, that the fact of the aneurism being diffused—that is, without distinct sac, as I understand the term—and due to a wound still existing as such in the artery, does not preclude all chance of cure from pressure, though it renders such cure far less probable. I infer in this case the absence of a distinct sac from the obscurity of the pulsation, and of the sensation of filling and emptying, with pressure applied to the artery; and from the fact of the tumour increasing steadily without obvious pulsation.

The second case is one of perhaps no special interest in its course or symptoms, but is worth preserving as one of a very rare type—a spontaneous aneurism in a young woman otherwise in robust health.

The fourth case serves to prove that even extensive disease of the heart does not in all cases prevent pressure being borne. The signs of the cardiac affection are unmistakable, and it sometimes interferes with the functions of the organ, though not to any very alarming extent; yet the patient has submitted to the continuous application of pressure to both thighs for a longer period than any whose case I have ever seen quoted, and seems not to have suffered in any degree from it.

The other two cases might bear some comment, but I fear I have already trespassed too much on your space and your readers' attention.

The general conclusion to which I have been led by what I have seen of the compression treatment in popliteal aneurism is this, that there are few or no cases in which the cautious use of pressure is not justifiable, the sac remaining entire; but that in persons of shattered constitution, in aneurisms lying in contact with the knee-joint, and in those which communicate very freely with the cavity of the artery, the surgeon should be prepared to give up the pressure after a short time, if no rapid improvement follows its use, and resort to the ligature.

ROYAL FREE HOSPITAL.

HÆMATEMESIS FROM ULCER OF THE STOMACH: ILLUSTRATED BY THREE CASES.

By WILLIAM BRINTON, M.D., Physician to the Hospital.

To the various cases of this malady already reported by me in the ASSOCIATION JOURNAL, I may now add a brief account of two or three in which the symptoms justify my inferring this lesion to have been the cause of dangerous hæmatemesis.

CASE I. E. D., a married woman, aged 52 years, addicted to gin drinking, was delivered of a child by craniotomy about seventeen years ago. During the long confinement to bed which followed this operation, she began to suffer from pain in the epigastrium after taking food; sometimes attended by nausea, and after a time by pain between the shoulder blades. From that date to the present, she has never been free from these symptoms; at frequent but irregular intervals. Menstruation always regular.

In April 1855, the epigastric pain became much more