wing, together with the superior maxilla, the infra-orbital canal of which was laid open, in order to demonstrate the thickened state of the nerves. Microscopic sections of the excised ganglion were also exhibited, together with diagrams showing the anatomy of the parts dealt with.

As far as I have been able to learn, this is the first instance in which the Gasserian ganglion has been successfully removed in the human subject. It is undoubtedly an operation of considerable danger and difficulty; at the same time I feel convinced that the severity of the symptoms and the hopelessness of being able to effect relief in any other way justified such a procedure. The loss of the eye is greatly to be regretted, and, it is to be hoped, need not necessarily occur in future cases. In the present instance the patient is more than contented with the immunity from pain which she now enjoys, and thankful to have gained it, even at the sacrifice of an eye. In any future case of the kind I should be inclined to stitch the eyelids together as an additional protection.

Harley-street, W.

NOTE ON

A NEW METHOD OF BLEEDING IN SOME FORMS OF PULMONARY CONGESTION, WITH FOUR CASES.

By J. CHRISTIAN SIMPSON, M.B.,

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THE subject of bleeding, local or general, is one which is not now much discussed or referred to except in a few rare and exceptional cases. This is to some extent due to bleeding having gone out of fashion, and also largely to the fact that when unskilfully used it is a dangerous and even fatal line of treatment. Under the head of local bleeding are classed some of the ordinary methods which are still in use, and deservedly so, such as leeching, cupping, and the like, while general bleeding, as accomplished by venesection or arteriotomy, is now only rarely practised. That bleeding locally does do good in suitable cases there is no denying, and it is equally true that lives can and will be saved by judicious and timely venesection. It is specially to a form of general bloodletting in a certain class of cases that I desire to refer, though in one sense this method is also merely a local depletion of a viscus. This phlebotomy is not one practised in cases of acute febrile diseases, but is rather an extension to another organ of the practice of hepatic phlebotomy as performed by Dr. Harley. This, there is no doubt, has a most beneficial effect in the cases of hepatic congestion in which it is performed. Such a condition can only be very indirectly and somewhat slowly affected by either general depletion or vigorous leeching and counter-irritation over the hepatic regions, for obvious elementary anatomical reasons. But through it we have the direct method, which, apparently in proper cases and when properly performed, is not attended by risks of effusion or subsequent peritonitis, local or general. That a similar procedure might be of use in the case of engorged lungs not in a state of acute inflammation occurred to me; and its practicability was demonstrated, though rather by accident, in a case of severe cardiac pulmonary congestion under my care in the country during August, 1887. The patient was an elderly woman, in whom there was considerable loss of compensation, with mitral regurgitant murmur. The dyspnoea was distressing, and the dulness at the bases of the lungs was so absolute and wooden, and the breath sounds so distant, that pleural effusion seemed probable. Accordingly I introduced a fine needle of an aspirator, which, however, was not attached. No serous fluid escaped, and on thrusting the needle further in, dark venous blood readily flowed, but as there was no utensil at hand, I was forced to withdraw it prematurely on the urgent solicitation of female relatives. This, however, was enough to encourage me as to the ease with which direct local depletion of the lungs could be performed, and, the probable risk being apparently small, I determined to repeat the process in a more elaborate manner when a suitable case occurred.

Such a case was that of a woman who was the subject of chronic inflammatory Bright's disease, which was not im-

proving under dietetic and other treatment. One day she was becoming comatose, with fibrillary muscular twitchings, and intense dyspnoea, accompanied with oedema and congestion of the lungs. Under these circumstances venesection was indicated, as the ordinary treatment for such a condition failed to relieve it. In order to render the pulmonary phlebotomy as safe as possible, the aspirator was used, and the largest cannula thrust into the lung substance at the level of the ninth costal interspace on the left side, the absence of pleural effusion having been previously ascertained. No blood flowed, and after various manipulations, reducing and increasing the suction power, I removed the whole of the aspirating apparatus, and very shortly after there was a free flow of blood from the cannula, which had been left *in situ*. After the withdrawal of twelve ounces of blood the cannula was held *in situ* with the finger over the end to allow of a clot forming, and then it was slowly withdrawn altogether. A piece of plaster was applied over the puncture, but a flannel bandage could not subsequently be retained in position. The patient was immediately and markedly relieved, both as regards the cerebral and pulmonary conditions. No effusion took place, there was only trifling hæmoptysis and a suspicion of a small patch of pleurisy, without a rise of temperature. She remained in a greatly improved condition for a considerable time after this, though she ultimately died comatose.

A third case similarly treated was one of almost complete breakdown of compensation in cardiac disease, there being double mitral and aortic systolic murmurs as well as well marked dilatation. Stimulants and cardiac tonics were tried without avail, and as the cyanosis was somewhat rapidly increasing, I again tried pulmonary bleeding, in a similar manner, and with a similar immediate beneficial result, which continued for about thirty hours, when the patient died quite suddenly of syncope after some exertion in bed.

My fourth case was one which also terminated fatally, death being due to uræmic convulsions. In this case, instead of a flow of blood, the oedema was so pure that only serous fluid escaped very slowly, and coagulated quickly, thus rendering the process futile. In spite of brachial venesection, which was immediately performed on account of the urgent symptoms, this patient died of the convulsions.

These are four cases in which this procedure has been carried out, intentionally and systematically in the last three. So far as I am aware, deliberate puncture of the lung in such cases with the intention of depletion has not been before practised, and it is on this account that I desire to record the above. By some it may be said to be unjustifiable or too heroic treatment; but with this I do not agree, provided that suitable cases are chosen, and that the operator is familiar with the use and abuse of the exploring needle; in other words, that he has the manipulative skill requisite for such an operation. These cases were all of a hopeless character, and only palliation at best could be expected, except in the cardiac case, the third recorded, and in it I regret that time had been lost in ordinary medical treatment. Whether it would be useful as a *dernier ressort* in cases of acute uræmia with pulmonary symptoms remains to be seen; but there was certainly immediate improvement in the cases where blood was abstracted. The aim and object is to try to get the good of venesection without such a loss of blood and its consequent retardation of convalescence. The process is analogous to a pulmonary apoplexy, which is recognised as being of the utmost benefit in certain cardiac cases, and the pulmonary lesions in both cases have a strong similarity. The broad indications for this seem to me to be that the case is one which has (1) extreme pulmonary congestion and oedema; (2) absence of effusion into the pleural cavity; (3) general venous stasis and cyanosis, all of which may occur in the progress of certain heart and kidney affections; and (4) that other treatment, medicinal and mechanical, had failed to relieve the symptoms. The coexistence of such congestion without pleural effusion is somewhat rare, and therefore this limits the practice; for the mere aspiration of the pleural effusion is almost invariably followed by such relief in cardiac cases that venesection is not required. It is therefore a necessary preliminary procedure to negative the presence of effusion in any quantity that would embarrass the heart's action and impede the pulmonary circulation. To do this thoroughly an exploring needle must be used. The condition of the lungs in a suitable case is such that, as regards the danger of subsequent pneumothorax, little or no air is being inter-

changed at the proposed seat of puncture, and the elasticity of the lung is quite sufficient to prevent any serious oozing taking place.

The method of procedure may now be considered *seriatim*.

1. What side is to be the seat of puncture? As a rule, I think the right side should be chosen if both sides are equally free of effusion, or are generally engorged. The reason for this is evident when it is remembered that such cases usually lie on that side, and consequently the congestion will be greater, and the rest to the lung afterwards will also be greater than on the left side. 2. The site of puncture should be not higher than the ninth interspace posteriorly. 3. The needle to be used is the largest usually supplied with an aspirator, the parts used being the cannula and the corresponding trocar and fittings, but it will be found advantageous in some cases to use a probe of a size smaller than the cannula. I found the suction by means of the aspirator too powerful in any degree, but there was no inconvenience from its absence, as there was not the slightest tendency in any of the cases for air to be inspired through the cannula—so complete was the congestion. 4. Mode of puncture: This should be done in one thrust, so that there be no danger of one or more small punctures of the lung. If this be not done the patient will cough and be troublesome, as the visceral layer of pleura is very sensitive, but with one thrust there is little or no discomfort. The depth of cannula introduced need not be great at first, and it could only be by great carelessness that any vessel of any size could be injured. The *tactus eruditus* will at once advise the operator of the fact that the end of the cannula is not in a free space containing fluid. 5. The cannula being steadied and the needle withdrawn, the operator should wait for a few seconds to see if any blood flows. If not, the cannula should be moved, so as to produce slight laceration, then slightly withdrawn, and usually there is a free flow. If clotting takes place, the smaller probe should be introduced and the cannula cleared. The probe being smaller, allows of blood to flow, although it may be *in situ*, and keeps any lung tissue from the end of the cannula. 6. The amount of blood to be abstracted varies according to the case and the results produced, it being as a rule less than would be required were venesection adopted. 7. The extraction requires some care. The finger should be placed on the angular aperture of the cannula, and either the needle or probe introduced along the cannula and kept there for a few minutes, to allow of clotting to take place in the lung, and then slowly withdrawn. In this way I have found no subsequent hæmothorax or pneumothorax, and there has been slight, if any, local pleurisy. 8. The local after-treatment consists in applying a piece of plaster to the puncture, and a bandage if the dyspnoea will admit of it.

While on the subject of puncturing the lungs, I would just remark that the benefit which accrues in some cases of pneumonia, where it is doubtful whether abscess or tubercle is going to supervene, is not apparently sufficiently generally known or practised. Not long ago I was attending a boy who had a five days' croupous pneumonia, and on the seventh there was a relapse which did not resolve. There were all the symptoms pointing to suppuration or the commencement of tuberculosis—sweating, hectic, and lung consolidation, &c. Pleural effusion, serous or purulent, was excluded by exploring, and at the same time the lung was punctured in one or two places. Nothing was obtained except a small quantity of blood and pus cells, but from that day the temperature was never so high and resolution commenced. The change in the percussion note and auscultation in a week's time was remarkable.

In another case in which there were similar symptoms, I aspirated about one drachm and a half of purulent débris from the base of a lung, and though subsequent explorations failed to strike any more, the patient completely recovered. The proceeding is so simple that it should be much more frequently used, and when antiseptic principles are practised the danger is practically *nil* and the results are good. Whether *post hoc* or *propter hoc*, each one must be the judge. The anatomical relations of the chest wall to the lung absolutely preclude the idea of anything approaching direct depletion by means of application to the parietes, thus agreeing with the condition of the liver, and contrasting with that of the kidney, where a certain amount of direct depletion can be effected. This is because of the fact that the kidney lies in, and its vessels have certain anastomoses with, the vessels of the surrounding connective tissue. Whether this method could be used in bad cases of acute pulmonary congestion, in which stimulants and other treat-

ment failed, I cannot say, but under such circumstances I see no reason why it should not be tried—at least, there are no grounds for supposing that it would put the patient in a worse condition. The ultimate result in the latter two of my cases was hardly preventable by human means, but they served to show that pulmonary depletion in a direct way alleviates symptoms which vigorous treatment in other directions had failed to do.

Stoke Newington, N.

NOTES OF THREE CASES OF SEVERE INJURIES CAUSED BY THE EXPLOSION OF A CANNON DURING A GUY FAWKES' CELEBRATION.

By WM. BERRY, F.R.C.S.I.,

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CASE 1. *Impaction of an iron rod in the face; removal; recovery.*—On Nov. 5th, 1889, at 8.30 P.M., I was sent for to see J. G—, aged seventeen years. The messenger informed me that a cannon had exploded, and a piece of iron had gone up his nose, and could not be removed. On my arrival I found him perfectly sensible, reclining on a couch in the kitchen, holding a handkerchief to his forehead, with a round piece of iron apparently projecting for about a quarter of an inch from the left nostril. The left eye appeared pushed forwards, swollen, and partially open; pupil widely dilated. I seized as much of the piece as I could between my finger and thumb, but found it firmly embedded in the face. I then got a handkerchief, and seized the end, and rotated right and left, and I found that with a little exertion I could twist it round, and in a few seconds I succeeded in removing a rod of iron, the upper end or head having been firmly embedded under the left malar bone. This piece of iron is four inches and a half long, the diameter of the head is one inch, and it weighs four ounces and a half; it had entered just below the left nostril, the alveolar process of the left maxillary bone, and had passed obliquely upwards and outwards into the spheno-maxillary fossa, pushing the eyeball forwards and outwards. There was not much hæmorrhage or shock; the pain was great when I plugged the wound with dry lint. On Nov. 6th I removed the plug and syringed with weak carbolic lotion, and plugged with lint soaked in carbolic oil. There was a good deal of oozing the first two days. Small pieces of bone came away with each syringing. The pain over the left eye was very intense, and the eyeball stood out prominently between the half-closed lids. On the 8th the patient had a bad night; he was very restless, and in great pain. The wound was syringed and plugged as usual. He seemed stupid, and was kept in bed with great difficulty. A mixture containing ten-grain doses of bromide of potassium was ordered to be given every two hours, and cold applications to be applied to the head.—9th: Wound looks well and is discharging freely. Patient is getting unruly and difficult to manage. Symptoms of meningitis seem to threaten.—10th: Patient much as usual. Takes plenty of bread-and-milk and beef-tea.—12th: Patient more rational and not so drowsy or difficult to manage. Wound now syringed twice a day only with carbolic lotion, and no plugging.—15th: Symptoms of meningitis are passing off and he takes more notice of what is going on. Thinks he can see light with the left eye.—18th: He improves every day, and can now sit up each day a little; not much discharge from the wound. He improved daily, and my attendance ceased on Dec. 6th, and it was Dec. 31st before he could see with any degree of perfection with the left eye.

CASE 2. *Compound comminuted depressed fracture of the skull; hernia cerebri; death.*—J. R—, aged twenty-one years, was injured at the same time and place as Case 1. He was taken to the Royal Albert Edward Infirmary, and admitted under my care. When I saw him about two hours after the accident he was in the operating theatre, and we found a lacerated wound extending upwards and backwards for about two inches from a point just in front of and above the left ear; in this wound a fragment of bone could be felt and a foreign body seen projecting in the angle of the wound. The wound was enlarged and the foreign body with difficulty extracted by a pair of strong forceps, as it was firmly wedged in the bone. It proved to be a piece of brass, one end of which was solid and the other hollow, to