used for wounds gave the optimum effect in the treatment of conjunctivitis. Every second case of conjunctivitis was treated by irrigating the conjunctival sac freely three times a day with eusol; the other cases were treated with boric acid and zinc sulphate solution as being probably the commonest of routine methods.

We took the cases absolutely in the order that they happened to arrive from field ambulances. The only thing that was done in the way of selection was to exclude from the experimental group those cases in which any complications co-existed with the inflammation of the conjunctiva. Cases of blepharitis, corneal ulceration, trichiasis, entropion, and ectropion seemed to us to present incalculable elements, the inclusion of which would be likely to lead to ambiguous and uncertain conclusions.

One hundred cases were treated in this comparative manner. Of these hundred cases the fifty treated by eusol took an aggregate time of 303 days to cure. The cases treated by boric and zinc took 448 days before they were fit for duty.

The employment of eusol therefore resulted in the saving of many days in the treatment, the average time required for a cure with eusol being 6.06 days, as against the average time of 8.96 days required to get the same result with boric and zinc treatment.

It was further apparent as the result of our work that apart from any gain in time, eusol might yet be a very useful alternative measure for the treatment of conjunctivitis, for in six cases it succeeded in effecting a rapid cure of the disease where boric and zinc had proved unsatisfactory.

TWO CASES OF REMOVAL OF A BULLET FROM THE UPPER SURFACE OF THE DIAPHRAGM.

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Whilst the lessons of war surgery have thrown much light on the immediate treatment of penetrating wounds of the chest and have prompted some most valuable additions to surgical literature, the later consequences of these injuries have received but little notice.

It is a fortunate fact that not a few of these seriously wounded men recover; but of these, some still carry in their chests the agent, whether shell or bullet, which caused the injury. These foreign bodies show a tendency to fall to the bottom of the thorax, coming to rest there on the upper surface of the diaphragm. In this position they may give rise to no trouble and no surgeon would suggest their removal. There are found, however, from time to time, cases in which the foreign body is a cause of persistent and distressing symptoms.
Clinical and other Notes

In the first case which I report the man’s life was made miserable by a constant “pricking” pain and, in the second case, the soldier was quite incapable of any exertion owing to the fact that an increase of respiratory movement beyond the normal produced at once a crippling amount of pain. The two cases are reported, not merely as examples of removal of foreign bodies from an unusual situation, but rather as instances of the help afforded to the surgeon by a simple method of “positive pressure anaesthesia.” Thanks to this method, most ably handled by Major A. Wilson, the recovery of a bullet from the pleural cavity was carried out with perfect safety to the patient and was rendered, from the operator’s point of view, little more than a minor surgical procedure. The details of the cases are as follows:

(1) G. W. C., aged 24, was wounded in the right side of the chest by a rifle bullet fired at long range. The bullet entered through the right costal interspace, 3½ inches from the middle line. Free haemoptysis occurred at once and continued in considerable quantity for twenty-four hours. He reached England at the end of five weeks and during this time he had much pain in the lower part of the right chest with frequent cough and daily haemoptysis.

Although he stated on admission to the 2nd Western General Hospital that he had lost two stones in weight since his injury his general condition was excellent. The chest expanded well and beyond a few moist sounds there was no physical sign of disease or injury. Cough was frequent and the sputum always contained a little dark blood. The patient, although apparently well and comfortable in a sitting posture, was not able to lie down with ease and was rendered very breathless by slight exertion. He complained constantly of a “pricking” pain which he located deep to the sixth right costal cartilage.

Radiographic examination by Captain Bythell disclosed an intact rifle bullet lying on the upper surface of the diaphragm. The bullet was localized at a depth of two inches beneath a point marked over the sixth right costal cartilage and distant ½ inch from the line of the right border of the sternum. As the pain continued after a month in hospital and the patient’s condition remained without change, save that the haemoptysis had ceased, it was decided to attempt the removal of the bullet.

Anaesthesia was induced by chloroform and the tracheal catheter of the Ehrenfried’s positive pressure apparatus having been introduced, the operation was carried out under ether vapour introduced under pressure by bellows. Through a curved skin incision the sixth and seventh right costal cartilages were exposed and denuded of their muscular and tendinous coverings, which were reflected downwards in one piece. A portion, 1½ inches in length, of each costal cartilage was then excised. The opening thus made gave abundant access and through it the parietal pleura was incised in a horizontal direction. A healthy, well-inflated
lung presented itself on opening the pleura. The lung appeared and felt absolutely normal, showing no trace of adhesions.

On packing off the lung with a strip of gauze there was disclosed at once on the upper surface of the diaphragm a rounded eminence, in shape and size like the half of a small walnut shell. An incision into this yielded a few drops of turbid fluid and the bright unbroken nose of the bullet at once presented. This was seized and extracted without difficulty; it was lying on the upper surface of the diaphragm and had become covered and encysted by a pale friable fibrous tissue. The gauze was removed and the parietal pleura closed tightly by a continuous stitch of fine chromic gut. The tendino-muscular flap was replaced by chromic gut sutures and the wound closed without drain. The colour and general condition of the patient were perfectly satisfactory throughout the operation. Beyond a slight tracheitis, probably traumatic, which cleared up completely in three days, the convalescence was uninterrupted. The patient was discharged from hospital in four weeks. The "pricking" pain disappeared from the first and the man was able to move freely without breathlessness.

(2) T. J. E., aged 21, was hit by a shrapnel ball at Suvla Bay. He stated that very free bleeding followed the injury—"blood running out of his mouth without cough." He gradually recovered and does not appear to have suffered from any complications of the injury beyond occasional slight hæmoptysis which continued up to the time of his admission to the Royal Infirmary, six months after the injury. At this time the chest showed no abnormal physical signs and his general condition was excellent. The scar of the wound of entry lay over the inferior angle of the left scapula.

The patient complained of much pain on exertion and located the pain at a point on the tenth left rib a little in front of the mid-axillary line; he stated that the pain was very severe on deep breathing.

A radiogram by Captain Barclay showed an intact shrapnel bullet lying deep to the rib and fixed in the angle between the diaphragm and chest wall. Anæsthesia was carried out, as in Case 1, by Major A. Wilson with the help of Ehrenfried's apparatus. The operation was of the simplest nature. A portion of the tenth rib about 1½ inches long was resected and the pleura opened by a horizontal incision. The bullet was at once evident and was picked without effort off the upper surface of the diaphragm. The edge of the well-inflated lung was well seen and as far as it could be inspected through the limited opening the lung appeared to be quite healthy and free. The pleura was closed with fine chromic gut.

The after-history was quite without incident; the patient was discharged in a fortnight in excellent condition, having had neither hæmoptysis nor his former pain since the operation.