

In order to gain an entrance into the subject, and with the object of determining the relative parts played in the obliteration of an eviscerated pleural cavity by the various anatomical elements forming its boundaries, we undertook a series of experiments, the results of which we would beg leave to lay before you.

Proceeding upon the known fact that unilateral thoracotomy might be undertaken in rabbits without great risk of sacrificing the animals, and pending the construction of a positive pressure apparatus, we carried out a series of 31 experiments.

A strictly aseptic technique was, of course, constantly aimed at, and under ether anæsthesia total pneumonectomy, either right or left, was performed in each case. After preparation of the skin, the operation consisted in the employment of a straight incision in the long axis of the rib, the separation of the muscular layers in the direction of their fibres, resection of the middle two-thirds of the fifth or sixth rib overlying the root of the lung, and the successive ligation and excision of the lung lobes in situ. Closure was effected by suture of the intercostal muscular stumps and continuous suture of the muscular layers. Finally, before closure of the skin with Michel's clamps, aspiration of the eviscerated cavity was carried out in a majority of the cases, as we were early impressed with the necessity of dealing in some way with the closed pneumothorax.

The following figures give briefly and from various points of view the results of our experiments: 31 experiments; 19 recoveries and 12 deaths; recovery percentage 61.2. Of the deaths one occurred before operation from anæsthesia; four were due to hæmorrhage, two to infection, and five to the direct or indirect effects of tension pneumothorax, that is, either to respiratory or cardiac embarrassment. Of the four deaths from hæmorrhage, two occurred in the first stage of the operation from laceration of the lung tissue, which in the rabbit is extremely friable and can be handled only with padded forceps. Indeed, the liability of tearing is so great that it is necessary to ligate the lobes in situ without attempting to deliver the lung. The remaining two deaths were the result of hæmorrhage after closure,—in one instance, from the torn mediastinal attachment of the lower lobe, and in the other, from the divided intercostal artery in the posterior angle of the thoracotomy wound. Of the two cases of infection, the first occurred in a rabbit with severe snuffles; fibrino-purulent exudate was found in both pleuræ and in the pericardium, death occurring five days after operation. Multiple necroses of the liver were also present. The second case occurred in a poorly nourished rabbit three days after operation, the post mortem revealing a bilateral serous pleuritic effusion and