RETROGRADE NEEDLING.

A NEW TECHNIQUE FOR INSERTING RADIUM NEEDLES IN
CARCINOMA OF THE TONGUE.

BY

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(With Special Plate.)

A NEW technique for inserting radium needles in carcinoma of the tongue has been devised to overcome the difficulties which are met with when needles are inserted by the usual technique.

Owing to the mobility of the tongue the movements of deglutition may displace needles inserted in the edges of a growth. In some cases the needles have been dislodged and swallowed, and in others they have been displaced, necessitating removal before the full dosage has been given. The back of the tongue, too, especially the epiglottic region, is very inaccessible, and great difficulty may be experienced in placing the needles in the growth and keeping them there. In addition, the deeper parts of the growth are too far from the needles to be affected by the radium.

The following case of carcinoma in the dorsum of the tongue illustrates the new technique. The growth was in the epiglottic region and the base of the tongue was infiltrated. The ulcerated area could not be seen from the mouth without the aid of a mirror. The radium needles used were shaped as shown in Fig. 1. They were threaded with Pagenstacher No. 2, knotted once.

FIG. 1.

The tongue was drawn forward and a Greig-Smith abdominal needle was introduced into the space between the hyoid bone and the mandible, a finger introduced into the mouth guiding the needle so that it came out through the margin of the growth into the mouth. The end A of the thread attached to the radium needle was then threaded through the Greig-Smith needle, which was withdrawn through the skin of the neck and detached. By pulling on the thread the radium needle was drawn backwards into the growth till the point just disappeared. A small piece of rubber tube was threaded on the end A where it came out of the skin to indicate the depth of the needle in the growth. A piece of rubber tubing was threaded on to end B to protect the lip, and the ends A and B were knotted together loosely, forming a complete loop (Fig. 2). In a similar manner other needles were placed all round the growth.

FIG. 2.

By pulling the ends A or B the needles can be made to travel either down into the deeper parts of the tongue and glands and finally out through the skin in the submaxillary triangle, or up in the mouth.

By transfixing the growth the deeper parts of it and the glands themselves may be treated after the needles have been for some time in the margin of the growth, and when supplies of radium are small a large area comes within reach of the needles when they are gradually pulled through the growth—for instance, one inch every three or five days.

A needle with two eyes (Fig. 3) is suggested for this technique, which has also been used with success in the treatment of new growths in parts of the body other than the tongue. For instance, when only four or five needles were available, a large sarcomatous mass on the parietal

peritoneum was treated by this method, the needles being made to travel in four stages of one inch every three days.

FIG. 3.

The advantages of this technique are:

1. The ease with which radium needles can be inserted in inaccessible regions.
2. A small quantity of radium can be made to act on a large area.
3. The position of the needles is always known and they can be moved with great ease and anchored where desired.

The disadvantages of the technique are:

1. Sepsis; there is always some pus and inflammation round the thread track.
2. Haemorrhage; the needle might puncture some vessel of large size, though this would be rendered unlikely by the use of two-eyed needles as suggested. In the cases treated hitherto there has been no trouble from haemorrhage.

The skiagrams reproduced in the Special Plate show radium needles *in situ* introduced by this technique.

THE PATHOGENESIS OF PULMONARY
CAVITIES.

BY

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(With Special Plate.)

THERE is a possible factor in the production of excavation in the lung to which hitherto little or no attention has been drawn. For some time I have felt that there is a certain amount of evidence indicating that a positive pressure of gas within an area of softening, or within a definite cavity already formed, helps to produce excavation. I have now been able to prove that this positive pressure occurs, because recently I was able to introduce a hollow needle safely straight into a large apical cavity, which needle was attached to the ordinary manometer of a pneumothorax apparatus, and I found a positive pressure of 16 cm. of water. From this cavity I extracted gas, and while able to reduce the pressure several centimetres I could not reduce it further, owing, apparently, to the fact that there was only an obstructed opening into the bronchus. Some two months later, on repeating the puncture of the cavity, I found that it was patent both on inspiration and during expiration. I append more precise details about this particular patient and send two photographs of his x-ray appearances, one taken in June, 1927, and the other in November, 1929.

There are several *a priori* reasons which support the likelihood of internal pressure as a factor in the pathogenesis of pulmonary cavities. Considering that cavities frequently have secretion in them, it seems reasonable to suppose that some of this may at times block the opening into the bronchial system. It is often taken for granted that a valvular opening through a hole in the lung surface into the pleural space, as occurs sometimes in spontaneous

S. VERE PEARSON: PATHOGENESIS OF
PULMONARY CAVITIES.

FIG. 1.

FIG. 2.

K. H. PRIDIE: RETROGRADE NEEDLING.

FIG. 1.—Antero-posterior view of needles after insertion.

FIG. 2.—Lateral view of needles after insertion.

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FIG. 1.

FIG. 2.