the extract of the suprarenal medulla itself, and we have the extracts of glands known to work in unison with it. It is my practice to order mixed gland because I can see no harm in giving an overdose of a gland substance known to stimulate the suprarenal glands, and no harm in giving gland substance which has no demonstrable action on the suprarenal. But where there is evidence of hyperfunction of any particular gland I withhold that gland substance in treatment.

It will be said: "But we have all had failures with the exhibition of adrenaline in asthma." Perhaps these can be explained by reference to the properties of the extract and to what happens when it is administered. When given subcutaneously it brings about intense constriction of subcutaneous vessels and thus tends to defeat its own absorption. It does the same in the stomach, but this may not be a disadvantage. It is rendered inert though not destroyed in an alkaline medium. The stomach contents are acid and the vaso constriction produced would be useful in producing a slow, continuous absorption, unlike the quick absorption obtained from an intramuscular injection, for adrenaline dilates intramuscular vessels. Therefore, for immediate ease, an intramuscular injection should be given, and oral administration employed for a slow continuous action.

My great difficulty in compiling this paper has been the paucity of available bibliographic references to the endocrine glands and asthma. There are, I feel, many flaws in my argument, but if the paper serves to stimulate discussion I shall feel amply rewarded.

THYROIDFISSURE FOR MALIGNANT DISEASE IN A MAN OF 74.

BY

W. J. HARRISON, M.B., M.R.C.S.,

SURGEON, EAR, NOSE AND THROAT HOSPITAL, NEWCASTLE-ON-TYNE.

THE case here reported is interesting in view of the advanced age of the patient. So far as I have been able to ascertain, the only instance in which thyroidfissure has been performed on a patient older than this is that of a man aged 75, on whom Sir StClair Thomson operated successfully. There is naturally a certain amount of hesitation in advising an operation on a patient of such an age, especially if he is at all debilitated, but this man is more vigorous than usual at this time of life—thin, but with good arteries, and unhesitatingly chose to have the operation.

W. T., aged 74, attended as an out-patient at the Throat Hospital in May, 1922. He complained of hoarseness of several months' duration, and this was the only symptom. A small warty growth could be seen on the margin of the right vocal cord, at the junction of the middle and anterior thirds. There was no lagging of the movement of the cord, the only impairment of the movement being caused by the mechanical obstruction of the growth to proper apposition. A specimen showed the growth to be a squamous-cell carcinoma.

On June 6th thyroidfissure was performed. The isthmus of the thyroid gland was ligatured and divided and tracheotomy performed in the median position. Before opening the trachea a 2 per cent. solution of cocaine was injected into its lumen and into the interior of the larynx. The tracheotomy tube was inserted and the larynx opened without any of the usual disturbance. On exposing the growth by sawing through the ossified thyroid cartilage it was found that, as is so often the case, it was much more extensive than it appeared to be, spreading below the cords across the anterior commissure to implicate the tissue below the opposite cord in the anterior part. In consequence a considerable amount of tissue on both sides of the larynx had to be removed; this was done after placing a swab dipped in 2 per cent. cocaine into the larynx and packing off the trachea and pharynx.

As soon as he recovered consciousness and there was no sign of bleeding the tracheotomy tube was removed, a suture having been placed in each side of the trachea at the time of the tracheotomy. These were left *in situ* for a short time, so that if necessary the wound could be readily opened and the tracheotomy tube reinserted. He was kept in the upright position in bed and encouraged to get up and sit in a chair from the third day onwards; convalescence was uneventful. A small tumour appeared at the anterior commissure and persisted for several months; this was removed and proved to be the remains of granulation tissue with no evidence of malignancy. He now speaks in a loud whisper, which, taking into account the amount of tissue which had to be removed, is as much as can be expected.

The case illustrates clearly the importance which should be attached to persistent hoarseness or alteration of voice occurring in a man over 40. Semon and all laryngologists have pointed out the great importance of a laryngeal examination when it occurs, but unfortunately this symptom is

frequently ignored until some other reason sends the patient for an examination. Then it is too often found that the disease has progressed to such an extent that operation is impossible, and only a very severe operation offers any prospect of success. Alteration of the voice, being the only symptom of intrinsic cancer for some considerable time, should arouse suspicion when occurring in a man of 40 or over, which suspicion should not be set at rest even if no growth is visible at the time of examination, unless some other definite cause can be found for the condition, treated and cured. It is now possible to examine the larynx below the vocal cords by means of a mirror, introduced by Irwin Moore, so early growths in this region can be detected. As in the case mentioned above, the growth is frequently more extensive below the cord than is at first imagined. Impaired mobility or lagging of the cord implies some infiltration of the intrinsic muscles by the growth, and when present in conjunction with a growth is considered pathognomonic of malignant disease. In the case recorded it was not present, in spite of the size of the growth. In the larynx, as in other situations, epitheliomatous growths may be divided into those which tend to grow outwards (exfoliate) and at first show little tendency to invade the deep tissues; those which at first tend to extend over the surface, with little tendency to exfoliate or invade the deeper tissues; and those which tend to invade the deeper tissues at an early period of their growth.

The injection of cocaine into the trachea and larynx is of great value in the operation. Everybody knows the violent coughing, venous congestion, wide movement of the trachea, etc., which occur as soon as it is opened. After introducing a few drops of the 2 per cent. cocaine solution it can be opened with absolutely no disturbance. The disturbance when opening the larynx is even more marked, and the manipulation of the tissue may, by the inhibitory action of the branches of the recurrent laryngeal nerve, cause dangerous and fatal collapse. All this is done away with by the use of cocaine, which has the still further advantage of greatly reducing the haemorrhage and more clearly defining the growth and diminishing the shock.

The early removal of the tracheotomy tube is a matter of considerable importance, as it enables the patient to cough up secretions much more easily than when the tube is retained. It can easily be replaced, by the nurse if necessary, if sutures have been placed in the trachea, the wound being easily opened by traction on them.

The median position of the tracheotomy opening offers several advantages. After division of the thyroid isthmus the trachea is superficial in this region, so the operation is more easy than low tracheotomy; the tube can readily be reinserted if necessary, and during the operation is sufficiently out of the way not to cause inconvenience. In high tracheotomy the tube is in the way during the operation, and the thyroid isthmus, which has to be retracted when the trachea is opened, may get in the way and cause difficulty and delay in replacing the tube should necessity arise after its removal. In low tracheotomy there is often much difficulty in reinserting the tube owing to the depth at which the trachea lies.

REFERENCES.

Irwin Moore: *Intrinsic Cancer of the Larynx*. Sir StClair Thomson: *Journal of Laryngology*, May, 1919.

PRIMARY UNION AFTER OPERATION FOR SUPPURATIVE APPENDICITIS.

BY

ROBERT G. RIDDELL, M.D., F.R.C.S.E.,

HONORARY SURGEON, ROTHERHAM HOSPITAL.

IT is now the practice of many surgeons to close the peritoneum without drainage in cases of abdominal sepsis, such as perforated gastric or duodenal ulcer, pyosalpinx, and appendicitis with localized abscess or general peritonitis, when it has been possible to remove the focus of infection. In such conditions, the root of the trouble having been removed, and as much as possible of the septic material having been swabbed out, the peritoneum is left to deal with what remains; provided that the infecting organism does not belong to one of the more virulent strains of streptococci (when the patient would probably die in any case), and provided also that the patient has not been left till *in extremis*, that membrane seldom betrays the trust reposed in it.

The tissues of the abdominal wall have not the same