weights and weights of anterior lobes were altered significantly by thyroidectomy.

The doses of fresh anterior lobe tissue necessary to cause ovulation in at least part of a group were found to be larger than those Wolfe and Cleveland used.[1] In recipient animals weighing about 3 kg., 5 mg. of fresh anterior lobe per kg. were required; in smaller animals (about 2 kg.) it was necessary to inject 7.5 to 10.0 mg. per kg. In using the anterior lobes of an operated and a control animal we usually administered doses proportional to the anterior lobe weights to recipient animals of practically identical weights. Our results indicate that the concentration of the hormone causing ovulation was reduced in the pituitary of the thyroidectomized animal. The absolute amount of the hormone present was certainly not increased and may have been reduced inasmuch as ovulation occasionally occurred only in the test animal receiving anterior lobe suspension from a control donor; moreover anterior lobe suspension from a control animal always caused ovulation, if a similar suspension from a thyroidectomized animal had a similar effect.

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Fate of Bronchial Ligatures.

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It is well known that non-absorbable ligatures and sutures applied to some tubular structures in the body tend to migrate. The special mode of migration of such material in the intestine, common bile duct, Fallopian tubes, and large arteries has been determined in detail. The present work concerns the behavior of ligatures applied to a tertiary bronchus, and the resultant effect upon the bronchial continuity, in dogs.

The first branch (about 4 mm. in diameter) of the stem bronchus of the right lower lobe was exposed, and ligated with silk. In 9 dogs, it was singly ligated; in 8 other dogs it was ligated at 2 points and divided between the ligatures. After postoperative periods varying from 3 days to 6 months, the animals were killed and the region of ligation was examined grossly and microscopically (using serial microscopic sections).

[1] Wolfe and Cleveland, *Anat. Rec.*, 1931, **51**, 213.

In every case of single ligation, before the 7th day, the thread cut through the bronchial wall at one point. The process continued, more or less gradually, until the ligature became entirely free and lay in the lumen. Almost as fast as the ligature cut through, the resultant circular ulcer became filled with granulations and covered with bronchial epithelium. At 6 months, the ligature had disappeared, presumably to the outside, the bronchial lumen was patent, and the walls were healed. There was little or no stricture. The mucosa was normal, but under it was a microscopic circumferential scar.

In every case of double ligature, the bronchus remained obstructed. The proximal stump (the one next to the stem bronchus) healed without any interruption; but within 14 days a small ulcer developed in the mucosa of the distal bronchial segment, at a point just over the distal ligature, and it stayed open until both ligatures and nearly the whole mass of pinched off cartilages had gradually worked their way into the lumen of the distal bronchial segment. At 6 months, the ulcer was healed and the fragments of silk thread were lying in the lumen distal to the site of bronchial interruption. The portion of the pinched off cartilages which failed to migrate underwent absorption *in situ*.

In both types of ligation, as long as the bronchus remained blocked, the distal lumen was greatly distended with air, mucus, leukocytes, and tissue debris. The parenchyma of the obstructed lobule was always air-containing.

The reason for the difference in the resultant effect upon bronchial continuity, which the 2 types of ligation exhibited, is not apparent. It corresponds with the situation in arterial ligation, where one tie applied "in continuity" usually fails to interrupt the vessel permanently but 2 ties with division between produces permanent interruption.[1] The cause for the migration of the ligatures and pinched off cartilages into the lumen distal to the site of ligation, rather than into the lumen on the proximal side, in the cases with double ligation, was apparently the fact that the lumen of the distal side only was distended, so that the bronchial wall on that side alone pressed against the ligated masses. The continued inflation of the obstructed lobules was obviously due to collateral respiration.[2]

[1] Horsley, J. S., *J. Am. Med. Assn.*, 1925, **85**, 1209.

[2] Van Allen, C. M., Lindskog, G. E., and Richter, H. G., *J. Clin. Invest.*, 1931, **10**, 559.