

A NOTE ON TWO ABNORMAL LARYNGEAL MUSCLES IN A ZULU

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CHARLES, a Zulu labourer, aged 69, died of pulmonary tuberculosis on September 2nd, 1925. His body was dissected in the Department of Anatomy of the University of the Witwatersrand, Johannesburg.

In the course of the dissection there were observed, in addition to various pathological conditions, numerous structural abnormalities not referable to pathological causes. Of the pathological conditions, the principal were advanced pulmonary tuberculosis accompanied by enlargement of the right atrium of the heart, duodenal ulcer, and degenerative changes in the small intestine, accompanied by widespread haemorrhages into the submucous coat, which were regarded by Dr A. Sutherland Strachan, Senior Lecturer in Pathology, as due to anthrax. There were also present an enlarged liver, complete fibrosis of the left vertebral artery, and appearances in the kidney suggesting parenchymatous nephritis.

Among the abnormalities observed were the following: The hemiazygos vein emerged from the substance of the kidney near the upper pole, and formed with the accessory hemiazygos and left superior intercostal veins a continuous venous trunk opening into the left innominate vein. On the left side the subscapular and posterior circumflex humeral arteries had a common origin from the third part of the axillary artery. On the right side the subscapular artery arose from the second part of the axillary artery instead of from the third part. On the right side also the radial artery divided into its two terminal branches some distance proximal to the wrist joint. In the right leg the relative size of the posterior tibial and peroneal arteries was reversed, and the communicating artery connecting them distally was greatly enlarged. Abnormal vascular arrangements of the above nature have been described in Cunningham's *Textbook of Anatomy, passim*. In the right foot the flexor digitorum brevis muscle had only three tendons of insertion instead of four. They were inserted into the second, third and fourth digits. A small partly fleshy and partly tendinous fusiform slip arose from the tendon of the flexor digitorum longus, and divided into two very slender tendons of which the medial blended with the tendon of the flexor digitorum brevis to the fourth digit, while the lateral passed to the fifth digit. In its course it lay superficial to the tendon of the flexor digitorum longus to that digit, and was inserted in exactly the same manner as the normal tendons of the flexor digitorum brevis. This slip is of some anthropological interest, as it is a vestigial representative of the

deep head of the flexor digitorum brevis, which is said to be present in monotremes, marsupials and all primates below man (*Quain's Anatomy*, Vol. iv, Pt. 2).

More recently, in the dissection of the larynx, two abnormal muscular slips were observed which were thought worthy of more detailed notice, as no similar arrangements are described in any of the texts available to us here.

On the posterior aspect of the larynx, on the right side, a muscle was observed arising, in continuity with the origin of the posterior crico-arytenoid muscle, from the uppermost part of the depression lateral to the median ridge

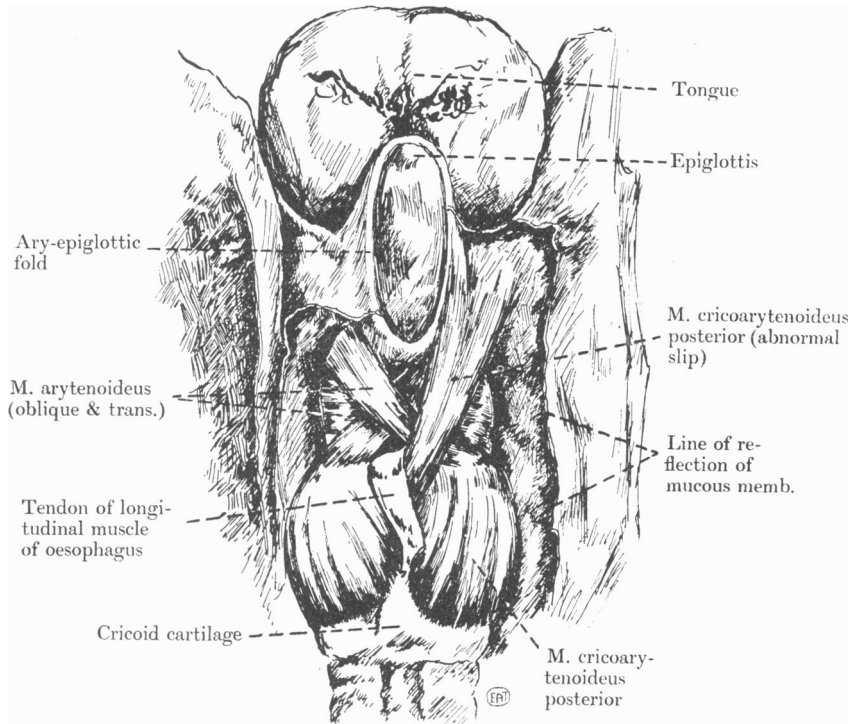


Fig. 1. Posterior view of dissection of larynx, showing the abnormal slip of **M. cricoarytenoideus posterior.**

on the posterior aspect of the left lamina of the cricoid cartilage. From this origin the muscle passed upwards and laterally, superficial to the oblique and transverse arytenoid muscles, to find its principal insertion, in common with the oblique arytenoid muscle, into the apex of the arytenoid cartilage. Some of the medial fibres of the muscle, however, were inserted into the mucous membrane of the ary-epiglottic fold, while a few on the lateral side turned laterally to blend with the transverse arytenoid muscle.

Fig. 1, which was drawn from the specimen, shows the dissection from the posterior aspect. It shows the origin of the muscle from the lamina of the

cricoid cartilage, superior to and in continuity with the origin of the posterior crico-arytenoid muscle, and lateral to the attachment of the tendon of the oesophageal longitudinal muscle. The muscle lies superficial to the arytenoid muscles as it ascends obliquely to its insertion into the arytenoid cartilage, where it is in continuity with the origin of the ary-epiglottic muscle. The muscle is innervated by a twig from the posterior division of the inferior laryngeal nerve. Its vascular supply was not accurately determined, owing to the fragile condition of the specimen, but it was apparently derived from the superior laryngeal artery.

The second of the abnormal muscular slips was found on the left lateral aspect of the larynx, under cover of the left lamina of the thyroid cartilage. It arose from the left supero-lateral angle of the lamina of the cricoid cartilage under cover of the lateral crico-arytenoid muscle, and passed upwards and

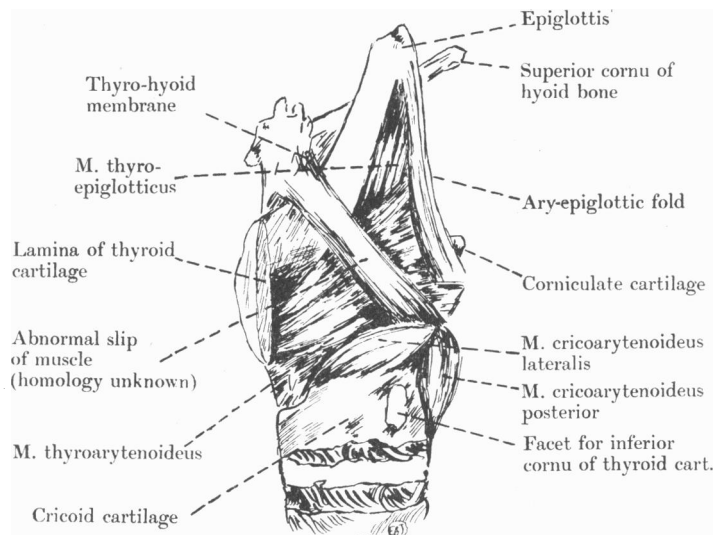


Fig. 2. Lateral view of dissection of larynx, showing abnormal muscle of unknown homologies. The left lamina of the thyroid cartilage has been removed.

anteriorly, lying superficial to the thyreo-arytenoid and thyreo-epiglottic muscles, to be inserted into a thickened band of fascia which appeared to be continued above into the lateral part of the middle thyreo-hyoid ligament.

Fig. 2, which was drawn from the specimen, shows the dissection from the left lateral aspect, the left lamina of the thyroid cartilage having been removed in order to expose the muscles. The abnormal slip is seen emerging from under cover of the lateral crico-arytenoid muscle, which conceals its origin, and crossing obliquely, superficial to the thyreo-arytenoid and thyreo-epiglottic muscles. The continuity of the fascial insertion of the muscle with the middle thyreo-hyoid ligament is also well shown. The muscle was innervated by the anterior branch of the inferior laryngeal nerve. The fragile

condition of the specimen prevented any accurate determination of the arterial supply of the muscle.

It does not appear from the clinical history of this patient that there was any defect of speech and that, therefore, these abnormal muscular slips had any abnormal effect on the movements of the larynx. It appears, therefore, that their presence did not result in any abnormality of physiological function. It is probable, as will appear from the diagram, that the slip on the posterior aspect is an aberrant portion of the posterior crico-arytenoid muscle, but it is not possible to give a simple explanation of the lateral slip. The abnormality is evidently of developmental origin, for no trace was observed of any disease or injury to the larynx such as might have caused distortion of the musculature. Moreover, in the clinical history of the case, the throat is described as perfectly normal, particular examination of this region having been made in consequence of the tuberculous condition. All the other structures met with in the dissection of the larynx were apparently normal.

The widely distributed abnormalities in this specimen are evidence of a considerable disturbance of the foetal development at some period, but no explanation is available of the course taken by the abnormal development in the case of the larynx. No previous observations were available which could serve to throw any light on these abnormalities, nor, apparently, are any anthropological data recorded which might be capable of furnishing an explanation of these structures.