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GENTLEMEN,—Hemorrhage and fatal results have followed subcutaneous tenotomy of the sterno-mastoid for wry-neck, and therefore most authors lay down rules for the performance of the operation with some exactitude. It must be admitted, however, that accidents attending tenotomy of this muscle must be few and far between, as I have never seen one, and have no personal recollection of such an occurrence in anybody else's practice. My impression, however, is that the imperfect results sometimes obtained after the subcutaneous operation are due to the fear the surgeon has of wounding structures he has been taught to avoid, and that in consequence more or less of the deep-seated fibres of the muscle escape division altogether. The muscle is occasionally described as having tendons, whereas from a surgical aspect it has but one, namely, the sternal attachment, which is "thick and rounded, tendinous in front and fleshy behind. The clavicular portion, separated from the sternal by a narrow interval, is flat, and is composed of fleshy and tendinous fibres."[1] Little difficulty can be met with in a clean division of the sternal attachment of the muscle, but the same cannot be said of the clavicular fibres; possibly the difficulty may be due to variations in the extent of the attachment of the muscle to the clavicle, which is "sometimes as narrow as the sternal tendon, while in other instances it extends for three inches along the clavicle." (Quain.) The fear which the surgeon experiences when operating is due to the presence of the subclavian vein, which lies behind the muscle in the closest proximity, and if the knife is intended effectually to divide every fibre of the muscle, good fortune rather than skill must be invoked in order to do this without wounding the vein. In his "Principles of Surgery"[2] Mr. Syme stated that he had seldom found

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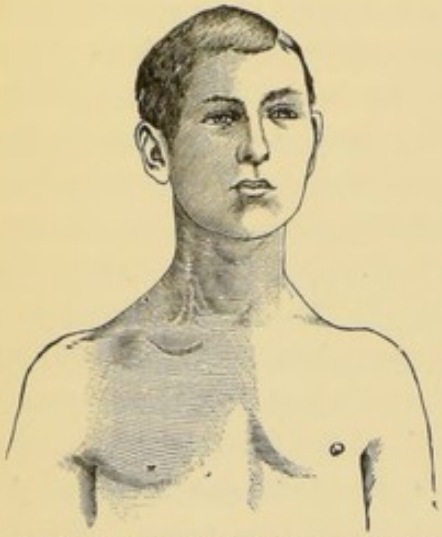
[1] Quain, p. 193, vol. i., 7th edition.

[2] Page 276.

it necessary to divide more than the sternal portion of the sterno-mastoid, and this he did at a distance of one inch above the clavicle; possibly the subclavian vein was constantly kept in mind by that eminent anatomist and surgeon. The other vein which is connected with this operation is the external jugular, which lies at the outer edge of that part of the muscle usually selected for division. It seems not unlikely that when a patient is under an anæsthetic and breathing stertorously, the veins about the neck become distended and occupy more than their usual space, and if so an additional risk is incurred in the division of the clavicular fibres of the muscle near the clavicle, for, according to Reeves's "Practical Orthopædics," p. 97, 1885, "the nearer one can cut to the sternum or clavicle the safer will be the operation." Of this I am convinced, that the clavicular fibres of the sterno-mastoid may lie far deeper behind the clavicle than is commonly supposed, and must therefore often escape satisfactory division. It is fortunate in one respect that it is the case, for in the example about to be given the deeper fibres of the clavicular portion of the muscle lay in absolute contact with the subclavian vein, and even when thus exposed to view care was essential in dividing the former upon a director. The lad upon whom I performed what I believe to be a new operation was fifteen years old, and was admitted to the Cumberland Infirmary in May, 1892. There was no deformity observed until after an accident which happened to him at seven years of age, when he fell over some rails and "lost the use of his arm partly." After that it was noticed that the head began to be directed towards the right shoulder, and as the boy grew it showed more. No photograph was taken prior to treatment, but it will be sufficient to say that the right sterno-mastoid was considerably contracted, and that in the course of years asymmetry of the features had been established. The chief points are as follows: The right palpebral fissure is narrower and more elongated than the left, the right eyebrow is less arched than the left, the right malar bone is flatter than the left, the right frontal region is also less prominent than the left, the right eye is on a lower level than the left, and the right ear is lower than the left. The nose, mouth, and jaw are unaltered. The right chest-wall is smaller and flatter than the left, and the right nipple is on a lower level than the left. The fold of the trapezius in the right neck is somewhat higher than the fold on the opposite side. The spine is found to be curved in the neck, with the convexity towards the left, and compensating curves are seen in the dorsal and lumbar regions. For instance, the angle of the right scapula is one and a half inches from the spine, whereas at the same point the angle of the left

scapula is two and a half inches from the spine. Seeing that the notes of the points of asymmetry were taken fourteen months after operation, it is probable that had they been taken prior to operation or immediately thereafter, in some respects the deformity of the spine would have been even greater. On May 22, a curved incision was made beneath the inner end of the collar-bone, about three and a half or four inches long, with the convexity downward. Reference to the wood-cut will show the scar resulting. The flap was turned up and the attachments of the muscle to the sternum and clavicle thoroughly exposed. After division of the sternal tendon, it was seen that the clavicular fibres were spread out to at least two inches in breadth, and lay immediately in contact with the subclavian vein, so that it was needful to pass a director beneath the muscle prior to cutting the deep fibres. This having been done, the muscle retracted about one and a half or two inches, and the head was brought into a straight position without difficulty. The flap was then stitched down, but, owing to air having lodged in the space left by the retracted muscle, an abscess formed which required incision above the collar-bone. With this exception, union of the wound was rapid, and but little general disturbance was associated with the operation. The head, moreover, retained its new position without any retentive apparatus of any kind. Prior to the lad being discharged, and in order to obviate the effect of reunion of the muscle, a leather collar was made by a saddler to keep the chin elevated.



Lad of fifteen upon whom division of the sterno-mastoid muscle was performed, for the correction of torticollis, through an open wound.

It is now more than a year since the operation was performed, and sufficient time has elapsed to enable a judgment to be passed on the result. The asymmetry of the features is the same, but the head is perfectly straight, although the collar has long since been too small to have any controlling power on the chin. Reference to the wood-cut will show that a few strands of muscle at the site of the operation have formed slender ridges beneath the skin, but this reunion of the muscle does not seem likely to bring about a recurrence of the deformity. Objections to the operation may be raised on account of the extent of skin divided and the scar resulting, which might be a plausible reason

against it in the case of a young woman. To this one would say that the perfectly satisfactory division of the muscle by the subocular method must insure a better result than that obtained by the subcutaneous plan. In the present case I feel sure that the result has proved more satisfactory than it would have done had the ordinary method been adopted, and at the same time it is to be noted that no expensive apparatus was needed to retain the head in position, a matter of some moment in hospital practice.

Since writing the above I have seen an article on torticollis in Keating's "Cyclopædia of the Diseases of Children," vol. iii., by Drs. Bradford and Brackett, in which it appears that the open incision has been practised in America, a fact with which I was not acquainted. In the same article it is also stated that males are more subject to wry-neck than females, and that the right side is oftener the seat of the affection than the left. With regard to the former point, it appears on reference to St. Bartholomew's Hospital Reports for the years 1882–1889 inclusive that eleven males and seventeen females were admitted and treated for wry-neck. From this it would appear that in so large a hospital as St. Bartholomew's a comparatively small number of cases of wry-neck are to be seen, and that females have an advantage of about twenty-one per cent. over the males. On looking over the index of diseases treated in the wards of the Cumberland Infirmary during the last fourteen years, no examples of the disease, save the one already spoken of, seem to have been treated, and therefore it may be long before I have another opportunity of repeating in the hospital an operation which has in its result satisfied both surgeon and patient alike, but perhaps others may be induced to try it in cases where division of the sternal tendon would be insufficient. It is not presumed that the method of procedure adopted in this instance would be of service in the spasmodic form of torticollis.