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EXCISION OF THE THYROID GLAND.

The operation of excision of the thyroid gland has no claim of novelty to render it attractive. It has been practised previously by different surgeons, notably by the late Mr Liston, and the ill success which attended upon the attempts to extirpate this organ when most requiring operative interference, has served to deter most writers of the present day from recommending its adoption. Before practising this operation, I had twice assisted at operations where a partial extirpation of the hypertrophied organ was adopted. In one case under the care of the late Mr Syme, where in a cystic goitre, after tapping and injecting the cyst, aneurismal signs manifested themselves, he laid open the pulsating sac, and failing to arrest the hæmorrhage, which poured out in a rapid stream, he seized first one side of the sponge-like sac and then the other, cutting away as much of the walls as could be exposed. In this case the hæmorrhage proved unrestrainable in spite of stuffing the cavity with sponges, and stitching the margins of the incision together over them, and the patient died in our hands. In the second case, Professor Spence extirpated a tumour of the isthmus of the thyroid with complete success, but with great bleeding attending upon the division of the vascular connexion. The hæmorrhage which complicated both of these cases, was certainly such as to make any one timid in adopting such a proceeding.

In May 1871 I was consulted by the friends of a young lady, who for many years had been affected by a tumour of the neck. It was central, prominent, of the size of a China orange, moving with the trachea, corresponding to its upper part, and of an elastic, solid

consistence. It was a source of great disfigurement, and was gradually increasing in size. Recognising its thyroidal nature, I recommended its removal by excision; being tempted to advise this from its limited central position, and its prominence, which was obviously due to the separation of the sternohyoid and thyroid muscles in the progress of its growth.

The operation was effected by a central linear incision, through which the surface of the tumour was readily exposed, with scarcely any bleeding. But no sooner were the lateral attachments on one side divided than blood gushed in a copious stream both from the tumour and from the vessels. The vessels were secured with some difficulty, and a ligature, embracing one half of the tumour, arrested all further flow. To escape from further trouble from bleeding, before dividing the vascular connexions upon the opposite side, I passed two preliminary ligatures beneath the superior and inferior thyroid vessels, and having tied these ligatures, completed the operation without any further loss of blood. The patient made a rapid recovery. This easy method of controlling the circulation towards the tumour impressed me with the idea of adopting this plan of mediate deligation as a preliminary to the extirpation of the gland.

In the course of the same month (May 1871), a patient was admitted under my care in the Royal Infirmary, affected with a multilocular cystic goitre. She had previously been under treatment, when the single cyst, of which the tumour then apparently consisted, had been tapped and injected with iodine. For a time this had seemed to have arrested the development of the gland, but it again gradually enlarged, until at the time of her readmission the swelling was of the size of two fists. The patient, at the same time, was anæmic, and affected in a slight degree with exophthalmos.

In her case, I operated by a long linear mesial incision, which sufficed to expose the upper and lower margins of the tumour. After dividing the skin and cellular tissue, and opening the fascia over the interval between the sternohyoid and thyroid muscles, carefully avoiding the fascial sheath of the thyroid gland, I carried my forefinger and thumb over the margin of the tumour at its upper and right-hand corner, and feeling that I had the vascular connexions of the tumour, with the right superior thyroid artery, in my grasp, I introduced an aneurism needle through the fascial sheath in the middle line, bringing it out again at the right side of the level of the equator of the tumour. A ligature was passed through the eye of the needle,

and when the needle was withdrawn, the ligature was left in its track. This ligature was confided to an assistant, and held aside. The needle was again passed in the situation of its former emergence, guided by the finger, and then passed beneath the right inferior margin of the gland, so as to include all the right inferior thyroidal connexions. The ligature was similarly withdrawn along the track of the needle. The same process was repeated upon the left side, a ligature being carried beneath the left superior and inferior thyroidal connexions, together with their delicate investing fascia. These four ligatures were then separately tied, so as to secure the vessels included within their cellular sheath as far from the tumour as was possible; the further separation of the tumour was effected by curved scissors. As the right superior thyroidal attachments were divided, the ligature came away in the hands of the assistant to whose care it had been confided. A gush of blood took place, but was at once stanched by means of a sponge thrust into the wound. On cleaning the parts, and drawing the edges of the incision widely asunder, the vessels were again secured by a single ligature. The wound was closed by sutures, except at the lower angle, where a portion of large-sized drainage-tube was inserted to secure the thorough evacuation of all blood, serum, or pus during the after-treatment. The surface was dressed with a pad of oakum, retained in position by plaisters and a cravat composed of a muslin handkerchief folded upon a piece of buckram, after the manner of an old-fashioned stock.

The loose and flaccid skin had in two days become adapted to the parts beneath, and showed no signs of any redundancy. The wound was healed in a fortnight, except where the ligatures hung out. One of these, after the lapse of a month, required for its removal to be forcibly drawn out until the knot appeared, and its loop divided on one side.

The next case, one of multiple cystic goitre, was operated upon in the Chalmers Hospital, in the autumn of 1871, and presented no peculiarities, except that the ligatures employed consisted of strong catgut, which were cut short after the division of the attachments of the tumour, and its removal.

Here the healing process was completed in three weeks, and the patient, who had been sent to my charge by Dr Howden, of Montrose, returned to her duties as an asylum attendant. In this case, the anæmia and exophthalmos which were present on admission, markedly diminished after the operation.

The next case was that of an Irishwoman affected with a multiple

cystic goitre. She was admitted to the Chalmers Hospital in the beginning of 1872. The operation was performed exactly as in the last case, and was followed by equally favourable results.

The last case, a patient from Leith, was admitted to the Royal Infirmary in February 1872. This was also a case of multiple cystic goitre, which had grown steadily for twenty-three years. Its commencement dated back to the commencement of menstruation. It was of the size of a large fist. It pulsated distinctly, and was accompanied by anæmia and exophthalmos. The operation was performed upon the 1st March 1872 in precisely the same manner as already detailed. The wound, however, was not entirely closed for six weeks after the operation. The retention of a small portion of sloughing texture within the wound was the occasion of this delay. An anomalous condition of matters manifested itself in this case after the healing was complete. A pulsating swelling about the size of a small hazel-nut developed itself in the situation where the right superior thyroidal vessels had been included within their cellular sheath in the grasp of the ligature. This gradually increased in size till it was as large as a small walnut. It then presented all the characters of an aneurism with a venous communication, manifesting the rattling of shot-like thrill, and the *bruit de diable* in a marked manner. After continuing for about three weeks, it entirely disappeared, without any treatment being employed except rest in bed. The result attained in this case I had an opportunity of exhibiting to the Medico-Chirurgical Society one evening at the commencement of the present session.

So far as I am aware, this method of operating is original. Mediate ligature of the thyroids has, I am aware, been proposed and employed as a means of curing—or, at least, arresting—the growth of the goitre, though its practical employment was not found to be attended by such results as to lead to imitation. The operation was further effected by four separate incisions, each made in relation to the vessel to be secured. In the operation I have now the honour of submitting to the Profession, the deligation of the vessels is only a preliminary to the excision of the tumour, and is effected through the same incision as that by which the extirpation of the goitre is made.

To attain the best results—(1.) The external incision should be very free, extending from the larnyx to the notch of the sternum if the tumour is large and spreads widely in a lateral direction. (2.) The vessels, arterial and venous, in the superficial incision should be secured as they are divided, to avoid any obscuration of the parts

through oozing going on. (3.) The fascia should be as freely opened as the skin. (4.) The investing delicate fascial sheath of the thyroid should be left undivided until the mediate ligature of the vessels included in their fine cellular sheath has been effected. This sheathing fascia or cellular capsule of the thyroid gland is only a prolongation of the sheath of these thyroidal vessels. If the capsule is opened, then, in pushing aside the soft parts to disclose the outline of the tumour, this delicate sheath is apt to glide off the surface of the thyroid gland; and should this occur, the gland may readily be detached from the vessels even with comparatively gentle handling, and thus copious hæmorrhage, difficult of restraint, may be occasioned. (5.) After the mediate ligature of the thyroidal vessels in their sheathing cellular envelope, the cellular capsule of the thyroid gland should now be opened by scratching through it in the middle line, and the attachments which still retain the goitre in its position carefully divided by means of curved and blunt-pointed scissors. There should be no tearing away of the gland—no pushing parts aside with any roughness of manipulation. (6.) Should bleeding occur, it must be recollected that it must take place within the cellular sheath of the vessel and its prolongation upon the gland in the fashion of an investing capsule, and that, if the vessels are to be tied, they should be secured along with the cellular sheath. Without this sheath these enlarged trunks will be found so fragile as to risk being cut by the ligature; while any attempt to reach the bleeding mouths will usually be baulked by the infiltration by clot of this cellular envelope.

I need hardly say, that a method of operation such as this, which is easy and rapid of execution, and certainly devoid of risk, so far as I have yet tested its employment, holds out great attractions to the surgeon in the treatment of tumours of the thyroid gland, over the use of the seton or the caustic *flèches*.

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