On the treatment of cystic goître / by T. Mark Hovell.

With the Author's compliments.

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ON THE TREATMENT OF

CYSTIC GOÎTRE

BY

T. MARK HOVELL, F.R.C.S.E.

SENIOR SURGEON AND AURAL SURGEON TO THE HOSPITAL FOR DISEASES OF THE THROAT;
JUNIOR AURAL SURGEON TO THE LONDON HOSPITAL; LECTURER ON DISEASES
OF THE THROAT AT THE LONDON HOSPITAL MEDICAL COLLEGE

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PREFACE.

Having been asked, by many, for a copy of my short paper "On the Treatment of Cystic Goître," which was first read before the Hunterian Society, and an abstract from which, subsequently, appeared in the *Lancet* (Feb. 11, 1888), I have thought that it would, perhaps, be more, readily, accessible, and, more conducive to general convenience, if reproduced in its present complete form.

T. M. H.

3, Mansfield Street, W.
October, 1888.

ON THE TREATMENT OF CYSTIC GOÎTRE.

(*Read before the Hunterian Society, April 13th*, 1887.)*

My reason for bringing forward a method of treatment by no means new is, that, although it is mentioned in all the principal English and American works on Surgery, the prominence it deserves is not accorded to it, and, recently, cases have been published in which the treatment employed entailed serious risk to the patient, whose safety would not have been thus, unnecessarily, jeopardised had the measures, I am about to describe, been adopted.

The treatment which I advocate is that introduced by Sir Morell Mackenzie in a paper read before the Hunterian Society on January 22nd, 1872, and published by him in the *Lancet* of May 11th, 1872 (vol. i., p. 642).

His method, briefly, consists in tapping the cyst in its most dependent part, inserting a cannula, and when the fluid has been withdrawn, injecting into the cyst with a syringe a solution of perchloride of iron (two drachms of the salt to an ounce of water), then inserting a plug into the cannula, which has previously been secured in position, and allowing it to remain for seventy-two hours, after which time the plug is withdrawn, and not reintroduced if suppuration has taken place, poultices being applied, and the case treated as a chronic abscess.

* An abstract from this paper appeared in the *Lancet* of February 11th, 1888.

But if, from the character of the discharge, it is seen that hæmorrhage is still taking place into the cavity of the sac, or that sufficient inflammation has not been established to cause a purulent flow, the cyst is to be again emptied, and the injection of perchloride of iron repeated at intervals of two or three days, until this latter condition has been produced.

The following conclusions, which Sir Morell Mackenzie published in 1875* as the result of his experience, are worthy of being remembered, and I will, therefore, mention them before describing his treatment in detail :—

"1. That any cystic goître which has attained the size of a hen's egg requires to be actively treated, even when the symptoms are not urgent.

"2. That smaller cysts which give rise to serious dyspnœa, or dysphagia, likewise require to be treated.

"3. That the conversion of the cyst into a chronic abscess, is the safest and most certain mode of treatment.

"4. That suppuration is best set up by injections of the perchloride of iron, as the disposition to hæmorrhage is thereby effectually controlled.

"5. That injections of iodine (in cystic goître) are dangerous, because often followed by sloughing.

"6. That there is a risk in the treatment by injections of iron, from the occurrence of too profuse suppuration, when the cyst has been allowed to attain too large size before treatment.

"7. That all operations on the neck are attended with the danger of air entering a vein and causing sudden death.

"8. That this risk is in proportion to the development of the veins and the propinquity of the tumour to the heart.

"9. That in pure cystic goître the chance of this occurrence is so slight, that it may be dismissed from consideration."

* *Birmingham Medical Review*, vol. iv., p. 63.

The duration of the treatment which I am about to describe is, generally, from three weeks to four months, according to the size of the cyst, the usual time being from six to eight weeks.

In dealing with a case of cystic goître, the place at which the trocar is to be introduced must first be decided upon. It is essential that the spot selected be at the most dependent part of the tumour to subsequently ensure efficient drainage, upon which greatly depends the success of the operation, and it is an advantage to make the puncture where the cyst wall is thin, provided this condition is found in the position mentioned. Care must be taken to avoid a place traversed by a large vein, and, when practicable, it is well to introduce the trocar as near the mesial line as possible. The spot having been selected, the skin should now be frozen by means of an ether spray, and when anæsthesia has thus been produced, a trocar with silver cannula attached should be passed through the wall of the cyst, the trocar being withdrawn as soon as the cavity is reached, and the cannula pushed further in by means of a blunt-pointed plug. For a large goître I select a cannula two inches in length, because I have found that if it is shorter it is apt to slip out of the cyst, in which case there is often difficulty in reintroducing it by means of the plug, in consequence either of the cyst wall having contracted, and, thereby, caused the hole in it to be no longer opposite the opening in the skin, or from the aperture in the cyst wall having closed. When this occurs it is necessary to again puncture with the trocar. For smaller goîtres a cannula of proportionate length should be employed. It is not necessary to use a very large cannula; the sizes I employ correspond to Nos. 7, 8, and 9, English catheter gauge. Those smaller than No. 7, are apt to become blocked with discharge, whereas, those larger than No. 9, are unnecessary in ordinary cases. The cannula having been inserted into the cyst, it should be secured in position by a tape passed round the neck. The plug should be then

withdrawn, and the contents of the cyst allowed to escape, care being taken not to squeeze the cyst lest air should be sucked into its cavity. One or two drachms or more, according to the size of the cyst, of a solution of perchloride of iron (two drachms of the salt to an ounce of water) should be now injected into the cavity by means of the syringe, to be, presently, described, held vertically, and the plug reintroduced to prevent the solution from escaping. The reasons for using the aqueous solution of the salt, are, that it is more astringent than either the tincture or liquor ferri perchloridi (B.P.), and it is devoid of the free hydrochloric acid which they contain. The injection of perchloride of iron is made with a double object :—

First. To check the hæmorrhage which takes place from the capillaries in the cyst wall on the fluid being withdrawn. This is a very important step, for, hitherto, the capillaries have been supported by the fluid contained in the cyst. That the hæmorrhage results from the withdrawal of this support is proved by the fact, that, although, the fluid which first passes out of the cannula is of a pale albuminous character, yet, as soon as the cyst is emptied, pure blood is poured out.

Secondly. To produce sufficient inflammation in the cyst wall to destroy the secreting surface, and convert it into a granulating membrane.

The syringe,* used for this purpose, has its nozzle fixed at an obtuse angle with the cylinder, the object of this arrangement being, to allow any air which may be in the syringe, when held vertically, to rise to the top of the solution, and, therefore, render impossible the injection of air into a vein. This occurrence is further prevented by a button placed on the piston of the syringe above the cylinder, the button being screwed down for about an inch after the cylinder has been filled with the solution for injection, causing, by this means, the piston to be about an inch shorter than the cylinder, and, consequently, incapable of emptying it. The

* The syringe may be obtained from Messrs. Mayer & Meltzer, 71, Great Portland-street, W.

nozzle of the syringe is made to taper to the point, in order to allow it to, accurately, fit any cannula which may be used for this operation. The solution of iron having been injected into the cyst, it should be allowed to remain there for seventy-two hours. During this period the cyst will refill to a greater or less extent, and, if inflammation has been set up, it will be marked by pain and tenderness over the tumour, and there may, in addition, be signs of slight inflammation in its immediate neighbourhood. Whilst the cyst is swelling, care must be taken to loosen the tape which holds the cannula, to a corresponding degree, otherwise the head of the cannula will be pressed against the skin and may cause it to slough; the tight tape will also greatly add to the patient's discomfort. During the after-treatment of the case, tightness of the tape may, generally, be considered to indicate distension of the cavity of the cyst, consequent upon the escape of pus being retarded by the cannula having become obstructed. If, on withdrawing the fluid at the end of seventy-two hours, it is found to contain blood, or to show no signs of suppuration, an injection of iron must again be made, and retained in the sac for seventy-two hours, as before, by means of the plug, this process being repeated until suppuration has been produced. Poultices should then be applied, and in some cases the plug may be permanently removed, but, usually, it is better to keep it in position for a few days, in order to retain some pus in the cyst, and increase, thereby, the amount of inflammation. The quantity of pus, however, which is retained should not be large, and to ensure this, the plug must be removed, several times, during the day, to allow the discharge which has collected, to escape. Whilst the plug is retained in the cannula the temperature generally ranges between 100° and 103° F., but quickly falls after the plug has been removed and the free exit of pus permitted; but, should it not do so (and from the character of the discharge it appears unnecessary to keep up the inflammation), the cyst should be washed out, several times a day, by the injec-

tion through the cannula of tepid water containing some antiseptic.

Throughout the subsequent treatment of the case it is most important that thorough drainage of the cyst should be maintained; and, it should be constantly borne in mind that pyrexia persisting after the plug has been removed from the cannula, or a sudden elevation of temperature during the later stages of the case, is almost invariably due to the cannula being blocked, and, consequently, causing retention of pus in the cavity of the cyst. With the view of preventing this occurrence, I have, for some years past, used a piece of Ellis's drainage tube, which consists of silver or plated wire wound spirally to form a tube. I usually allow the turns of wire to remain touching one another, but, in some cases, it is well to slightly separate them, which is easily done by making gentle traction. To apply it, I select a piece of tubing which is a size smaller than the cannula, and, consequently passes easily through it; and, having ascertained the precise length of the cannula by measuring the plug belonging to it, I introduce the tubing until it projects about half an inch beyond it into the cyst, and then secure it in that position by fastening its other end to the tape around the patient's neck. By this means, although the more solid portions of the discharge gather round the cannula and the piece of tubing which projects from it, and there remain, the fluid portion readily passes between the coils of wire into the lumen of the tube and thence away. To further ensure efficient drainage it is necessary to wash out the cyst with tepid water, to which an antiseptic may be added, several times a day, and before doing so, to remove the Ellis's tubing. In some cases the mere injection of water into the cyst is not sufficient to entirely remove all the thicker portion of the discharge, which, carried by the outward flow of the water, collects around the inner opening of the cannula, and blocks it. When this occurs, a fine probe, introduced through the cannula as soon as the syringe is withdrawn, and moved

about so as to keep the end of the tube clear, will cause the previously obstructing pieces to come away with the water. It is useless to attempt to employ Ellis's tubing without a cannula, or to leave it long in position without being removed, because the granulations grow between the coils of wire and choke the lumen of its tube. Care must be taken to bend the inner cut extremity of the wire, so that it does not prick or scratch the wall of the cyst. Constant retention of a certain amount of pus may be caused, in this stage of the treatment, by the cannula projecting too far into the cyst, and, consequently, only allowing the escape of the overflow; the existence or not of this state of affairs can be easily determined by removing the cannula and noticing its colour, the portion which projects into the cyst being always more darkly stained than that which is in contact with the tissues.

It sometimes happens that after a few weeks the discharge becomes thin, and no appreciable diminution in the size of the cyst takes place from week to week. This condition is usually produced by want of tone on the part of the patient, causing the granulations to become flabby, and the healing process, generally, less active. To remedy this, in addition to tonics and a more generous diet, it is well, after each time the cyst is washed out, to inject into it a solution of chloride of zinc (fifteen to thirty grains to an ounce of water), and allow the solution to escape through the cannula. This should be continued until, from the ready way in which the walls bleed when touched with a probe, and from other indications, it is seen that the granulations have reassumed a healthy aspect. A cannula should be retained in the cyst until its cavity is completely obliterated. Provided that efficient drainage is obtained through the cannula which was at first introduced, it is a mistake to remove it until the cyst has contracted around its inner extremity and the granulations have begun to block up the aperture. When this takes place the cannula should be replaced by one of the same gauge, but not more than a quarter of an inch

shorter, which should likewise be retained until the granulations begin to obstruct its inner orifice, when it should be replaced by a cannula again not more than a quarter of an inch shorter than the former one. A fresh cannula should be introduced on this system, from time to time, until the sinus made by the first cannula becomes too short to retain it, when the wound may be left to granulate.

It occasionally happens that during the after treatment the cannula is not well borne, in consequence either of its end impinging on the wall of the cyst and producing irritation, or causing discomfort by its pressure on adjoining parts. In these cases it is my custom to introduce an india-rubber cannula with the chance of its remedying this trouble. If the latter difficulty has to be met, I have, in several cases, found that relief was not obtained until the cyst had entirely closed, and a cannula had been dispensed with.

Sir Morell Mackenzie sometimes uses a silver cannula with a movable shield, which can be fixed at any part of it by means of a screw. In this way as the cyst contracts the tube can be shortened, and its length accurately adjusted to the requirements of the case. For patients who are not well off it is convenient, because it renders a number of tubes unnecessary; but it has the disadvantage of projecting further in front of the neck in proportion as it is withdrawn from the cyst, and this causes a little inconvenience in the arrangement of the dress, and the application of poultices. A multilocular cyst should be treated in the same way as a simple cyst; but if it is found that pus is retained in any one of the cavities, a cannula must be passed directly into that cavity at its most dependent part, and the same treatment adopted for it as is employed in the case of a simple cyst. A cyst containing a large amount of calcareous matter in its walls can only be effectually treated by excision; but this operation ought not to be performed unless the symptoms produced by the tumour demand surgical interference.

Before leaving this part of my subject, I may mention

that Sir Morell Mackenzie, some years ago, employed a solution of tannic acid instead of iron, but the results were not so satisfactory as when the latter agent was used.

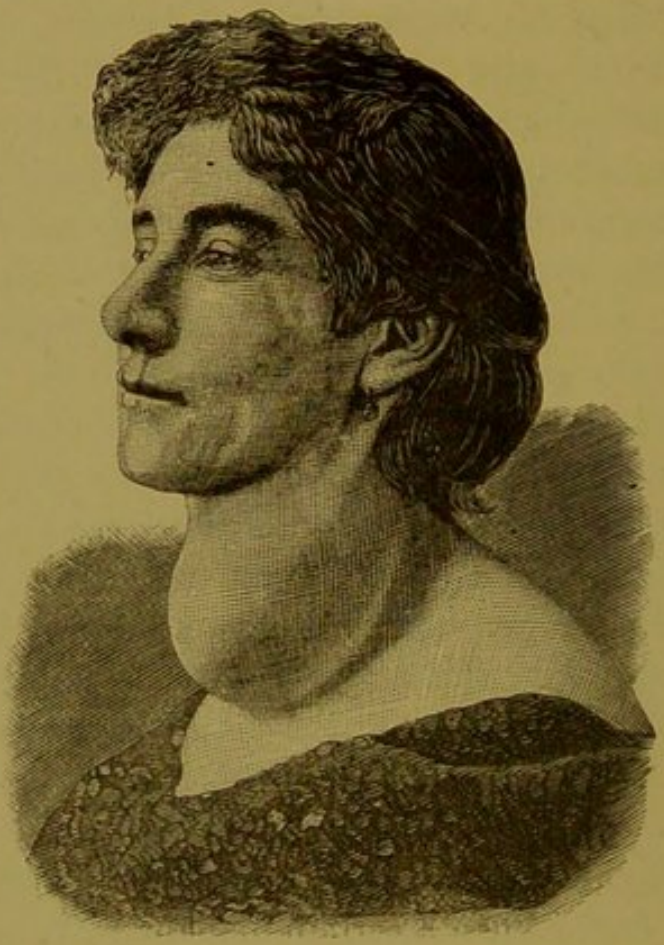
Not only does tannic acid fail to cause sufficient reaction —that is, to set up sufficient irritation,—but it is apt to remain in the cyst cavity. In two of the cases in which I used it, the powder formed a putty-like mass, which had to be dug out with a small spoon, introduced through the sinus made by the cannula, all other methods of removing it which were tried having failed to effect their purpose.

The patients whose history is now, briefly, given, and whose appearance, before and after treatment, is represented by a woodcut taken from a photograph, were shown at the Hunterian Society when this paper was read. Both cases were treated by the injection of the solution of perchloride of iron :—

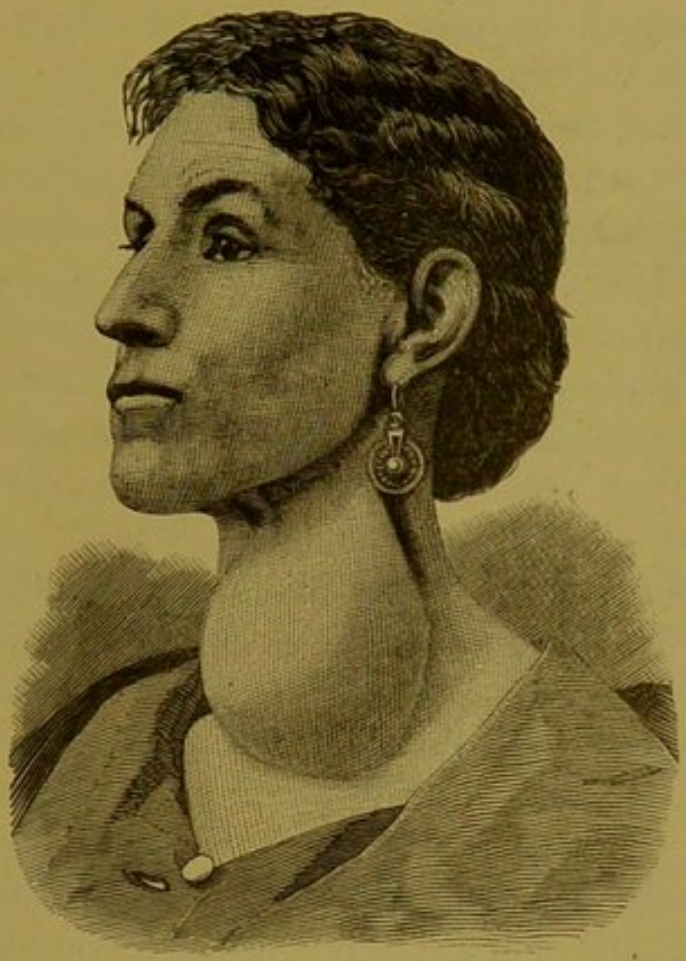
Case 1.—Marie K——, aged thirty-four, single, first noticed a swelling in her neck twenty years ago. During the last eight years she has had a certain amount of dyspnœa whilst walking fast, or going upstairs. Her voice first became weak five or six years ago, and during the last four years it has remained much in its present condition. There is now paralysis of the left vocal cord, which is in the cadaveric position. The tumour has increased very much in size during the last three years, so much so, that for this period she has been unable to wear a collar. The goître had never been surgically treated before she came to the Throat Hospital. On admission, the circumference of her neck measured 19 inches. The cyst was tapped on December 16th, 1886, and twenty-one ounces of dark-brown fluid withdrawn.

Case 2.—Mrs. C——, aged thirty-three, first noticed the enlargement in her neck nineteen years ago ; the goître was then about the size of a hen's egg. For several years it did not increase much in size. About six years ago the swelling began to enlarge, and continued to increase slowly. She married three years ago, and was confined ten months after-

CASE 1.



Case 2.



wards, a marked increase in the size of the tumour being noticed after the birth of the child. Mrs. C—— states that during the last twelve months, when she has run downstairs, she has felt the fluid moving about "like water in a bottle." During the three months previous to her admission into the Throat Hospital, the increase in size was very great, so much so that she was obliged to enlarge the collar of her dress almost every Saturday, in order to enable her to wear the dress on the Sunday. The cyst was tapped on January 31st, 1887, and ten ounces and a half of bright-red fluid withdrawn.

Having detailed the treatment recommended by Sir Morell Mackenzie, I will now turn to some of the principal works on Surgery, with the view of ascertaining what assistance is to be derived from them by one having a case of cystic goître to deal with, and being uncertain as to the best course to pursue.

In the "System of Surgery," edited by Messrs. Holmes and Hulke, 1883, vol. iii., p. 594, is the following:—

"The best treatment for cystic bronchocele is that introduced by Dr. Morell Mackenzie (*Lancet*, 1872), etc. etc. Simply tapping or incision has sometimes been successful, but there is always a danger of hæmorrhage attending these measures, which is obviated by the use of the iron injection."

With these remarks I entirely agree.

Mr. Bryant, in his "Practice of Surgery," 4th edit. (1884), vol. i., p. 245, makes the following remarks:—

"Simply tapping a serous cyst may cure it. When it fails, the cyst should be injected with half a drachm of a mixture of tincture of iodine and alcohol in equal parts; or, on this failing, of one of the same mixture and the liq. ferri perchloridi in equal parts. When these fail, a seton has been recommended, but the practice is dangerous, and should only be adopted when simple means are unavailing and further interference is requisite.

"In cysts of the isthmus, more particularly blood cysts, an incision into the cavity is a good and successful operation.

Should a cyst after tapping suppurate, it must be dealt with as an abscess and freely opened as soon as the existence of pus can be made out, for the thyroid is a dangerous position for suppuration to occur. I have successfully treated one case of suppurating thyroid cyst after tapping by incision; but the cases in which this treatment is called for are rare. Dr. M. Mackenzie has (*Lancet*, May, 1872) advocated the practice of converting the cystic disease of the thyroid into a chronic abscess by the following means:—First empty the cyst," etc. etc.

Mr. Bryant's views, as expressed above, differ very materially from my own. He clearly recommends simply tapping the cyst as the first method to be employed, and only on its failure, the injection of iodine and alcohol to be adopted. Although it is perfectly true that "simply tapping a serous cyst may cure it," still, this result is the exception rather than the rule, the usual consequence of such a proceeding being, that the cyst refills in the course of a few days, and not infrequently, before long, also increases in size. In addition to this, there is always the risk of hæmorrhage from the capillaries rupturing on losing the support of the contents of the cyst; moreover, more than one death has been caused by simple tapping. For these reasons I do not recommend this treatment.

With the propriety of injecting tincture of iodine, I am also at issue with Mr. Bryant. Although cases have been cured by this method, still there have been so many in which severe inflammation of the cyst—extending to the cellular tissue of the neck, and causing extensive sloughing, and in some cases producing a fatal termination—has followed this method of treatment, that I consider it attended with considerable risk. The method advocated only aims at producing inflammation, it makes no provision for arresting hæmorrhage, or providing an escape for pus, when suppuration has been established. To inject an irritant into a highly vascular cyst, placed in close proximity to the trachea and large vessels of the neck, with the view of causing inflammation

—an operation which provides no exit for the escape of pus when it has formed—is, I consider, a highly dangerous proceeding.

With Mr. Bryant's remark that the treatment by seton is a dangerous practice, I entirely agree, but I am unable to accept his statement with regard to cysts of the isthmus.

This portion of the gland is a very frequent seat of cystic disease, some authors stating it to be the most frequent seat, and, as in many cases a cyst in this position attains a large size, I do not consider an incision into the cavity of a cyst so situated, in all cases likely to prove either a "good" or a "successful operation," whether its contents be serum or blood. Neither when a cyst suppurates after being tapped, do I advocate its being "freely opened as soon as the existence of pus can be made out," my opinion being that, if a cannula was not inserted in the first instance and left communicating with the sac, the sooner one is introduced the better. Also that the withdrawal of pus through this channel, and the subsequent washing out of the cyst with tepid water containing some antiseptic, through the same opening, is, decidedly, preferable to the treatment recommended, which is liable to be followed by severe hæmorrhage, and which, after all, only aims at accomplishing what the milder and safer method effects.

After the remarks of Mr. Bryant, which I have just discussed, he refers to Sir Morell Mackenzie's treatment; but from the order in which it is placed, and his preceding remarks, it is evident that he prefers the methods to which I have just given my grounds for objection.

Mr. Erichsen, in the "Science and Art of Surgery" (1884), vol. ii., p. 570, says :—"When the tumour is chiefly cystic, the fluid contents may be drawn off by tapping, and an endeavour may be made to cause the cysts to close by inducing inflammation in them by the injection of tincture of iodine. The fluid which flows from the cyst is often darkly stained with blood, and occasionally pure blood may escape in considerable quantities from the puncture.

"Morell Mackenzie advises the injection of the cyst with perchloride of iron to check the flow of blood that often takes place from the cyst wall. He recommends that the cyst be tapped with a trocar and cannula; after the fluid has escaped a solution of perchloride of iron (two drachms to an ounce of water) is injected, after which it may be withdrawn and a drainage tube substituted."

Mr. Erichsen, although alluding to Sir Morell Mackenzie's method, has sacrificed clearness for brevity, the result being that it is doubtful whether any one could carry out the treatment from the description which he has given of it. He places before it, also, the treatment by injection of tincture of iodine, to which I have already referred and given my grounds of objection.

Professor Gross, in his "System of Surgery" (1882), vol. ii., p. 356, says:—"For the cure of cystic goître, six methods of treatment are at the command of the surgeon: the seton, puncture, injections of iodine, incision, excision, and electrolysis; all more or less serviceable, but not one entirely free from danger." "Mere tapping of a cyst is not always free from danger," etc. "Injections of iodine occasionally succeed, but the operation is liable to be followed by severe inflammation, eventuating in rapid reaccumulation, and is in the main less certain than the use of a seton. When the cyst is very large previous tapping will be advantageous. From one to two drachms of equal parts of iodine and alcohol will be a suitable quantity of fluid. If the water reaccumulates it must be let out by an early and free incision, and no effort must be spared to keep the inflammation within proper limits."

"Billroth, in 1877, reported thirty-five cases of cystic goître, in twenty-nine of which he effected a cure with the injection in each of four drachms of pure tincture of iodine. The operation was always followed by severe inflammation, and one case was fatal." "Incision of the morbid mass is occasionally practised, and cases have been reported in which the operation was followed by marked diminution. The

procedure is mainly adapted to tumours composed of large cysts, and the chances of success will be much increased if it be combined with the mopping of the affected cavities with iodine, and the use of a tent to provoke suppuration and granulation. Great care must be exercised, otherwise the free use of the knife will be attended with copious hæmorrhage."

"Incision of the sac and uniting its walls with those of the skin, an operation which I believe originated with Von Bruns, has been performed eleven times by Billroth with three deaths."

My opinion with regard to the treatment by simply tapping, by injecting tincture of iodine, and, subsequently, making a free incision into the cyst, and by a seton, has been previously mentioned, and my views with reference to the advisability of attempting a cure by incision, will be given, presently, in connection with a case reported by Mr. Mayo Robson.

Professor Agnew, in his "Principles and Practice of Surgery" (1883), vol. iii., p. 497, enumerated in one list the treatment applicable to the various forms of goître, but did not specify for which variety of the disease the several methods mentioned were suitable, so that but little information as to his views on the subject can be obtained by any one previously unacquainted with the matter.

The above being the only information to be derived from the latest edition of the principal works on Surgery in this country and America, it is not surprising that considerable doubt as to which is the best method to adopt, should arise in the mind of a surgeon called upon, for the first time, to treat a case of cystic goître, or that ordinary cases of this disease should be dealt with by exceptional measures, under the belief that all other methods are useless, or open to still more serious objections than those known to apply to the operation selected.

In the *Lancet* of July 3rd, 1886, is an account of a cystic goître treated by Dr. C. T. Vachell, of Cardiff, by "shelling out." The patient was a woman aged twenty-three, who had a tumour about the size of a cocoanut, occupying the

position of the right lobe of the thyroid gland and passing somewhat over the middle line of the neck. Fluctuation could be felt all over the tumour. Neither breathing nor swallowing was seriously interfered with. About three weeks before admission a teacupful of bloody serous fluid had been withdrawn by a trocar and cannula, and the tumour, in consequence, considerably reduced in size, but reaccumulation took place in a day or two, and in less than six weeks the tumour had attained a larger size than before, the circumference of the neck being $17\frac{3}{4}$ in. The patient was informed that if the tumour remained, serious results might ensue, and she consented to an operation. Ether having been administered, a vertical incision $2\frac{1}{2}$ in. in length was made through the skin over the most prominent part of the tumour, and at once the surface of it came into view. "Up to this point very little hæmorrhage had occurred. Without much difficulty the tumour was now shelled out, but the hæmorrhage which commenced with this process and continued throughout was very profuse. Firm pressure was maintained by an assistant, the surface was mopped with very hot water mixed with tincture of iodine (1 in 20), and as bit by bit the surface was exposed all the bleeding points were ligatured. The edges were then brought together, and a drainage tube inserted." "The tumour, which was irregularly ovoid in shape, measured 13 in. by 9 in. and weighed twenty ounces. On being cut into, nine ounces of dark sanguineous fluid escaped similar to what had been removed by tapping, but darker." The patient left the infirmary twelve days after the operation.

Although the operation was most skilfully performed, and the result of the treatment as far as reported quite successful, still, I consider, from the account given of the case, that there was nothing to justify the measures which were adopted. The case was apparently an ordinary one of cystic goître, and it is distinctly stated that neither breathing nor swallowing was seriously interfered with. That the cyst would refill after being tapped, might have been foretold, it

being the exception when this does not occur; also that it would be liable to attain a greater size, might have been stated with equal confidence. These usual results, however, having followed the tapping, Dr. Vachell appears to have thought that no course was open to him but to excise the portion of the gland containing the cyst. Although in the case just recorded the operation was successful, its performance is always attended with a considerable amount of risk to the patient. More than one death has resulted from hæmorrhage, which, as it was in this case, is frequently very profuse, and the evil effects which may arise from excision of large portions of the thyroid gland are too well known to need comment. After the grave consequences which are liable to attend the operation, the mere question of the size of the scar which results, sinks into insignificance, although, I hold, that in the surgical treatment of exposed portions of the body this point ought to be considered.

In the *Lancet* of January 22nd, 1887, p. 174, is the report of a paper which Mr. Mayo Robson, of Leeds, read before the Clinical Society, in which he advocated the treatment of thyroid cysts by antiseptic incision, stitching the edge of the cyst to the skin, and scraping the interior of the cyst sufficiently to separate all colloid material, then draining for a short time under an antiseptic dressing, and afterwards packing with zinc lotion and lint. Mr. Mayo Robson thought that the advantages of this method were its simplicity, safety, and certainty. He stated that he would not again practise complete excision, having had one case in which asphyxia and another in which hæmorrhage caused great anxiety. The advantage claimed by Mr. Mayo Robson of stitching the cyst wall to the skin, was that by this means the cyst was shut off from the surrounding cellular tissue, and, consequently, the extension of inflammatory processes was prevented.

The elaboration of the treatment by incision, just referred to, presents no novel feature, as the extract which I have quoted from Gross's "System of Surgery" clearly shows.

The fact that three deaths occurred in the eleven cases operated upon by Billroth does not offer much encouragement for the adoption of this method of treatment, especially if he did not scrape the interior of the sac, which proceeding, must add, considerably, to the risks of it. The object of the treatment advised by Mr. Mayo Robson is the same as that of Sir Morell Mackenzie—viz., the destruction of the secreting surface of the cyst and subsequent union of its walls; but the means which he takes to produce this result, compare most unfavourably with those which I advocate.

Before the secreting surface can be destroyed it must be reached. Mr. Mayo Robson effects this by an incision, Sir Morell Mackenzie by a puncture. The former method is always attended with hæmorrhage, which in many cases is very profuse; the latter is bloodless, because the pressure produced by the cannula plugs any vessel that may have been wounded, except in those rare cases in which a large vessel in the interior of the cyst becomes injured, and in these, no serious result need be feared, because, but little, if any, escape of blood can take place, externally, by the side of the cannula, and the amount of flow, internally, is limited by the size of the cyst, even if pressure and ice-bags have failed to check it previously. In order to destroy the secreting surface, Mr. Mayo Robson advocates scraping the wall of the cyst sufficiently to separate all colloid material, and subsequently packing the cyst with zinc lotion and lint. Sir M. Mackenzie recommends a solution of perchloride of iron to be injected into the cavity, with the twofold object of checking the hæmorrhage from the cyst walls which follows the withdrawal of the fluid contents, and, subsequently, of producing sufficient inflammation to destroy the secreting surface. Bearing in mind the extreme vascularity of the cyst wall, and the delicate structure of the vessels, I consider Mr. Robson's method of destroying the secreting surface, to be highly objectionable, even, if not, positively, dangerous. The steps of the operation recommended by Mr. Robson, cannot be performed without producing hæmorrhage, which

is always liable to be profuse; while, on the contrary, the object of the treatment which I advise, throughout, is, to prevent hæmorrhage. Holding the views, above stated, with regard to the method of treatment advocated by Mr. Mayo Robson, I am unable to consider it either simple, safe, or certain.

Having been accustomed, myself, to treat cases of cystic goître by Sir M. Mackenzie's method, and to see the same course adopted by others, I was unaware, till recently, of the methods of dealing with this disease, advocated in the last editions of the leading works on Surgery, having had no occasion to refer to them on this subject, being well satisfied with the plan I employed, and knowing how disastrous many of the older modes of treatment had proved. It was not, indeed, until my attention was called to the matter by the case referred to, published by Dr. Vachell last year, that I looked at the most recent English and American works on Surgery, to see what treatment their authors recommended. Had I done so, being ignorant of the best course to pursue, I confess that when I had finished such study, I should have been a sadder but not a wiser man, because no assistance would have been obtained, notwithstanding that the five leading works had been consulted. I should have found that no two authors agreed upon what is the best method to adopt, and that, in fact, all recommended a different proceeding. My efforts to obtain advice would have shown me that Messrs. Holmes and Hulke advocated Sir Morell Mackenzie's method; that Mr. Bryant recommended puncture as the first means to be adopted; that Mr. Erichsen advised the fluid contents to be drawn off by tapping, and an endeavour made to cause the cyst to close by inducing inflammation by means of an injection of iodine; that Professor Gross stated that six methods of treatment were at the command of the surgeon, all more or less serviceable, but not one entirely free from danger; and that Professor Agnew, apparently, did not consider the subject of sufficient importance to necessitate a separate paragraph being given to it, he having enumerated

the various methods of treatment applicable to the several forms of goître in one list, and, in such a manner, that only a person possessing a full and accurate knowledge of the subject, could distinguish which method was suitable to a particular form of the disease. A closer examination of the treatment recommended would have shown me that in two of the three English works injection of tincture of iodine was, favourably, spoken of, but under different conditions, Mr. Erichsen having advised the cyst to be emptied before the iodine was injected, whereas, Mr. Bryant advocated the injection of tincture of iodine and alcohol in equal parts, without any allusion to the preliminary measures recommended by Mr. Erichsen. Professor Gross, on the other hand, whilst stating that injections of iodine occasionally succeed, went on to say that the operation was liable to be followed by severe inflammation,—eventuating in rapid reaccumulation,—and was in the main less certain than the use of a seton; whereas Mr. Bryant stated that this latter method was dangerous, and should only be adopted when simple means were unavailing and further interference necessary. With such diversity of opinion, it would have been extremely difficult for me to come to a conclusion as to the best course to adopt, especially, as the weight of opinion was against the treatment which seemed most rational; and I consider that had I selected an operation which exposed my patient to unnecessary risk, the responsibility for the course adopted, would have rested on the shoulders of most of the authors of the surgical works which deal with this disease, rather than on my own.

Bearing in mind the frequency with which cases of cystic goître are met with, and the large number of deaths which have followed the attempts to effect a cure, I maintain that, the treatment of this disease, demands more serious attention than surgeons have, hitherto, accorded it.

In conclusion, I will say that if I have clearly demonstrated the decided advantages possessed by Mackenzie's method, as compared with the other modes of treatment which have been

employed, and this should lead surgeons to adopt it, and abandon, as more dangerous, the other operations which have been performed, I shall consider that the time which I have devoted to ascertaining the views of other men on this subject, submitting them to critical examination, and, testing them by the light of experience, has been well spent, and the object aimed at, in this paper, fully attained.

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