AN ADDRESS ON THE SURGERY OF THE TONGUE.

Read before the Liverpool Medical Institution.

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(Concluded from page 1196.)

It is an interesting fact in reference to disease of lymphatics beginning from tumours of the tongue that the gland affection may occur in any one of several different regions. The commonest part is in the floor of the mouth, and here, if the enlargement be recognised early, and the patient, having been forewarned of the occurrence, be willing at once to submit to an operation, there is a fair amount of hopefulness. I have at least one patient living in whom a period of at least three years has elapsed since the excision of enlarged glands from the floor of the mouth, secondary to cancer of the tongue. Sir Joseph Lister had operated for similar disease upon a gentleman, with the particulars of whose case I was well acquainted, and who, inasmuch as he died of a quite independent malady eight years after the removal of the glands and nine after the removal of his tongue, may be deemed to have been permanently cured as far as cancer was concerned.

In the majority of cases of enlargement of glands in the floor of the mouth the patient does not seek surgical advice until many glands are implicated, and until, it may be, they are adherent one to the other and it is too late to attempt an operation. Even, however, in some of these cases, apparently hopeless, it may be justifiable, after fully explaining the facts to the patient, to attempt an operation. If done it must, obviously be carried out in the freest possible manner. Mr. Christopher Heath once showed me a very successful case of this kind in which he had operated under conditions apparently almost hopeless.

Another position in which isolated glands every now and then take on enlargement after cancer of the tongue is under the anterior edge of the sterno-mastoid in its upper third. I have several times removed glands from this position. The gland is often a single one, and it may enlarge rather quietly. Provided that it has not acquired adhesions to the sheath of the vessels and that it be single, a gland in this position is fairly accessible and its removal is a satisfactory procedure. General M., from whom I removed a gland, full of epithelial cancerous structures from this position, is still alive and well, five years after that operation and seven after the excision of part of his tongue.

If, as they are apt to do, glands in this region have surrounded the vessels, or even become adherent to them, their excision is a difficult, dangerous, and unhelpful procedure. The worst position of all in which the recurrence of gland disease can take place, and, unfortunately, a not infrequent one, is in the back of the neck behind the mastoid process and the upper part of the sterno-mastoid. I have never seen a case in which I have thought it advisable to attempt an operation for the removal of glands in this position. They usually grow very rapidly, produce a large and very painful mass, and bring about the patient's death after a very short interval. A tumour in this position was the cause of the death of a late very distinguished author. He was near upon 70 years of age, and I had excised about a third of his tongue two years before the enlargement of the glands commenced. There had been no return in the tongue, and during the two years he had enjoyed good health and been quite free from lymphatic irritation. Both he and I had begun to think that he was secure against risk of relapse, when, after this long interval, as I have already said, the glands at the back of his neck began to enlarge.

It may be noted as a point of interest that it is very seldom indeed that the lymphatic glands enlarge in these three several positions in the same patient. If a gland tumour appears in one of these regions, it is almost certain that the

others will be free. This fact favours the belief that the lymphatic infection is caused by the migration of infective elements in very small numbers, which acquire their location in one or the other part, almost as a matter of accident. This inference is obviously from the theoretical side a great source of encouragement to the operator. Constitutional tendency to the disease clearly counts for but little. We have to deal with a local malady, to follow it up perseveringly and courageously by local measures.

In speaking of the circumstances under which operations on the tongue came into general favour, I have mentioned the introduction of the *écraseur* as one of the principal. To a large extent, however, this instrument, once in general use, has now been laid aside. Surgeons have resorted again to cutting instruments. Ingenious methods for securing the bleeding vessels as cut have been devised, or by some the precautionary measure of ligature of the lingual, under the jaw, on both sides, has been enforced. For myself, I may state that I have never on any large scale tried any other operation than that by the *écraseur*; nor do I think it probable, judging from what I hear of the statistics of operations by the scissors or the knife, that I shall ever desert the more clumsy—but, as I think, far safer—instrument. I fully admit that my method is tedious, and that, so far from being showy, it has a certain appearance of awkwardness about it. It leaves little or no opportunity for the exhibition of operative dexterity. As a rule, and intentionally, I occupy by the watch about half-an-hour in cutting through a tongue. In former years it used to be an hour, but that is perhaps scarcely necessary. I also further admit that the wound left by the wire of the *écraseur*, which cuts by crushing, is somewhat more slow to granulate than one made by scissors or knife, and that it presents for a few days an unhealthy surface. I doubt, however, whether there is any real difference as to the time taken in healing in cases operated on by the different methods, and I feel justified in asserting that the so-called sloughing stage after the use of the *écraseur*—although, perhaps, an inconvenience—entails no sort of danger to the patient. I do this on the strength of an entire absence of mortality, for I have never in my private practice lost a patient after excision of the tongue.

The *écraseur* has, I believe, fallen into unmerited disuse, because it has been chiefly associated with the galvanocautery wire. During two years or more I was myself in the habit of employing this method. It was a most troublesome procedure, entailing the attendance of Mr. Krohne with his battery and duplicate set of instruments, and often risking some burning of the patient's lips. These were inconveniences, but it had one fatal and final objection. Although often absolutely free from hæmorrhage at the time of the operation, it was very apt to be followed by it four or five days afterwards. From this occurrence of secondary hæmorrhage, although I had no actual death, I had several very alarming occurrences. On one occasion, by a most remarkable coincidence, the attack of hæmorrhage began a few minutes before my carriage stopped at the patient's door, and whilst his family medical man, who had preceded me, was sitting by his side. We were able, of course, together quickly to secure the vessel, but the quantity of blood which had been lost had been very considerable. In another case my late friend Sir William Fergusson was good enough to obey a hurried summons in the middle of the night, on account of secondary hæmorrhage in a patient of mine who was at an hotel near to his house. These cases and others—for they were not infrequent—soon induced me to lay aside the galvanocautery. Since the year 1877 I do not think I have ever employed it for any purpose whatever. It is a very ingenious instrument, but far inferior for all practical purposes to the cold wire. The instrument which I have employed exclusively for the tongue during the last twelve years is the ordinary screw *écraseur* armed with a loop of well-tempered wire. I never employ a chain or any complicated form of apparatus. It is sometimes said that the wire is apt to break, but this has not been my experience. It is well always to be provided with a spare loop in case of accident, but I cannot remember that I have ever myself broken the wire, the explanation being probably that I always proceed very slowly and allow time for the tissues to give way. At one time I had a favourite loop, with which I had operated in at least fifteen cases; and it was finally broken, not by myself,

but by an assistant to whom I had temporarily entrusted the instrument, and who was going too fast.

The details of the method of procedure are the following:—The mouth being kept open by a Smith's gag, with handles, the tongue is seized near its tip with a vulsellum and dragged forcibly forwards. It is then transfixed well behind the disease by two strong steel hooks. The vulsellum being then relinquished, the wire loop is passed first over the handles of the instruments, and then over their points, and the nozzle of the instrument being pushed well into the mouth, and care being taken that the wire bites at the proper place, the screw is used rapidly until the wire is well buried in a deep groove. After this the steps are very deliberate. Although I always have a watch placed before me as a security against going too fast, any exact timing of the turnings of the screw is but seldom observed. A little practice makes it easy to guess how to make the whole procedure last about half an hour. When I used to take a full hour there was seldom at the conclusion any bleeding whatever, and I did not usually tie the lingual arteries; now, however, I always expect the latter to bleed feebly when the surface of the wound is rubbed, and make a point of inducing them to do so, and of tying them. Scarcely ever do any other vessels than these require ligature, and the operation during the use of the instrument is quite bloodless.

The after-treatment of the case is usually very simple. The patient is allowed to take milk, or coffee or tea with half milk, from the first, and he is fed by means of a teapot, on the spout of which a long, flexible, nozzle is fixed, which is passed well back into his throat. On the day after the operation the patient is encouraged to leave his bed unless he be old and feeble. There is an advantage in the sitting posture, that it permits more easily of washing out of the mouth. This is to be done very freely, and very frequently. The material used is always the same, a tablespoonful of spirits of wine in a tumbler full of water, either hot or cold according to the patient's preference. This is the most convenient and pleasantest antiseptic wash for the mouth that I know of. At the end of a week, or ten days at most, the patient is encouraged to go into the open air. Should the granulations appear feeble, and the healing be slow, the process may be expedited by sending him to the seaside.

In exceptional cases the method of operating and the after-treatment above described may require some modification. When the disease is seated very far back, it may be necessary to divide the cheek in order to gain access to it. In the only case in which, so far as my memory serves me, I have lost a patient after excision of the tongue, this procedure had been necessary. The subject of the case was an American dentist in reduced circumstances, on whom I operated in the London Hospital. Erysipelas attacked the cheek, which had been incised and probably extended to the wound in the mouth, and death occurred within a week. In other cases I have repeatedly divided the cheek without any ill results. I have never thought it necessary to divide the symphysis of the lower jaw, excepting in one case. In that instance the tumour, a sarcoma, was so large that it blocked the whole mouth and rendered it impossible to manipulate with instruments.³ I cut the jaw, not with a saw, but according to my almost invariable rule, with a huge pair of forceps. The case did well, and the union of the jaw was rapid and perfect. I have found forceps-division of the lower jaw save a great deal of time, as compared with sawing, and the subsequent repair is just as good or better. In several cases where removal of the entire organ was necessary, and where it was not easy to drag it out of the mouth, I have adopted the plan of loosening it by a scissors division of the mucous membrane, and then forcibly pushing the finger under it. In two or three cases where the patient was feeble, and the operation had been extensive, I have thought it wise to introduce a tube through the nose into the œsophagus, and to feed by its means during the first few days. This plan, which I first employed many years ago in a case of cut throat, is very effectual, and may be continued if needed for a week or even longer. A No. 12 india-rubber catheter serves the purpose very well.

In comparing the *écraseur* with other methods of operating in cancer of the tongue, I have not the slightest hesitation in

giving it preference as being the one most adapted for general use. For experienced anatomists fresh from the dissecting room ligature of the linguals in the neck has its obvious attractions. Even in their hands, however, it has been occasionally found that, contrary to expectation, the arteries would pour forth blood when divided; nor clearly can this operation be commended as one adapted for surgeons generally; it needs great and constant practice for its skilful performance. Operations by means of the scissors, Whitehead's method, etc., are again chiefly suited for those who have a good staff of trained assistants, and they are even in such hands by no means always exempt from very serious losses of blood. To many of those who are the subjects of cancer of the tongue any material loss of blood is a matter of serious moment. These patients are often old and debilitated to begin with, and I cannot but think that it is the hæmorrhage at the time of the operation, and not anything in the condition of the wound subsequently, which is the great source of danger; hence the strength of my plea for the bloodless method by the *écraseur*. Not only is the loss of blood in itself important to the patient, but bleeding into the mouth in one who is under an anæsthetic is always, as is well known, attended by risk that blood may find its way into the air passages. Secondary pneumonia, which has so often proved the cause of death, is, it may be suspected, quite as often due to this accident as to the secretions from the wound. At any rate, the fact remains that the *écraseur* wounds heal well and do not poison the lungs. I have come to regard excision of the tongue as a procedure which does not really involve any risk to life.

It remains for me to say a few words in explanation of my statement that I have not in private practice ever lost a patient after an operation on the tongue. I must apologise for the apparent boastfulness which is perhaps involved in my saying this. I make the statement thus prominently in the cause of surgery, and in the hope that it may induce others to adopt a practice which I feel sure is conducive to the saving of life. I am not recommending any procedure in which it may be supposed that personal skill has any share, but one which is so simple that it can be adopted by anyone who will take pains, disregard appearances, and act according to rule. I regret much that I cannot count my cases or produce statistics, and my statements must, of course, be discounted on this score to any extent which the reader may think necessary. It would be a labour more than I can undertake to search through the notebooks of twenty years, nor if it were done would the list have any claim to completeness. I may state, however, that during the whole of this period I have been a warm advocate of the operation, and that I have adopted it in every suitable case in which I had the opportunity. Part of my success is, I have no doubt, due to the fact already adverted to, that a large proportion of my operations have been *partial* excisions. Another part is probably to be explained by the fact that I have been a strong advocate for early operations, and have performed many when the disease was but very little advanced. In all these, however, the part removed has been of very considerable size; I have never taken little bits. It is possible, further, that I may have declined a few cases as being past hope, where others would have operated. It is possible also that during the last five years, during which I have not held a hospital appointment, I may have sent into the London Hospital, to be operated on by others, a few of the most extensive cases. I do not think, however, that there is much to be said on the two latter heads. My strong conviction is, that the difference between my own statistics and those of my friends who use the knife and scissors is simply that between an operation often attended by very free hæmorrhage (some of it into the lungs) and one which is all but bloodless.

Some lesser matters demand a few words and I must conclude. As regards sex I do not think that in the whole course of my experience I have operated on more than six or eight women for cancer of the tongue. Almost all my patients have been men and almost all smokers, who had in early life suffered from syphilis. On this latter point my proportions may very easily differ from those of other observers since many of my patients have been sent to me in the belief that the ulcer was syphilitic.

That the term "precancerous stage" is justifiable, and that

³ This case is recorded, with a plate, in the *Medico-Chirurgical Transactions*.

there is a period during which naked-eye diagnosis is possible before anything definite is discovered by the microscope, is, I think, well proved by the following fact. In at least three cases in which different microscopists, who examined the specimen after its removal, reported that there was nothing definite, the disease yet recurred in the glands. I, therefore, always trust to other signs for the diagnosis. A careful microscopic examination ought always to be made, but it should follow and not precede a liberal excision. In one of the very few cases in which I have known the disease return in the tongue itself, most valuable time had been lost before I saw the patient in the vain hope of establishing a diagnosis by the microscope.

If it be asked whether the doctrine of a precancerous stage and the habit of trusting to the aspect, etc., of the sore for diagnosis, do not occasionally lead to errors and to premature operations, I must answer candidly, yes. A gentleman to whom I had, after consultation with an eminent surgeon, advised excision of part of his tongue, was quite cured by a liberal use of the acid nitrate of mercury as a caustic, and several under similar conditions have been cured by the actual cautery. One very obstinate patient who refused my urgent recommendation that he should have the whole tongue removed because there were several separate places which looked very suspicious, lived for at least three years without any malignant development. He visited many of my surgical friends and always expressed his satisfaction, that by disregarding my recommendation he had saved his tongue. His fate found him, however, at last. He never consulted me again, but one morning a medical friend acquainted with the facts drew my attention to a newspaper notice of his death, and I found on inquiry that he had died after an operation for cancer of the tongue. He would have been a gainer by what some might deem a premature operation for (let alone the final result), his tongue had been a trouble to him during the whole interval.

REMARKS

ON

THE VARIOUS SURGICAL PROCEDURES DEvised FOR THE RELIEF OR CURE OF TRIGEMINAL NEURALGIA (TIC DOULOUREUX).

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(Concluded from page 1193.)

Operation for Removal of the Gasserian Ganglion and the Division of the Fifth Nerve behind the Lateral.—In considering the possibility of relieving cases of inveterate neuralgia where recurrence of the pain had taken place, I thought one might be able to remove the Gasserian ganglion or divide the fifth nerve behind it, and I made, some years ago, dissections³⁸ to see how far the Gasserian ganglion could be separated from the cavernous sinus. On first exposing the ganglion from the pterygoid fossa and opening the middle fossa of the skull freely following up the inferior division of the fifth nerve, I found that one could raise the inferior division and so the lower half of the ganglion from its bed in the dura mater without damage to the carotid artery in the canal or to the cavernous sinus, but that when one attempted to strip up the upper half of the ganglion from the cavernous sinus it invariably tore the wall of that cavity. For this reason I believe that the operation of complete removal of the Gasserian ganglion is not possible, but that in the operation

which Mr. Rose has subsequently described only a portion of it can be taken away.

Finding this to be the case, I then considered the possibility of dividing the fifth nerve behind the ganglion. It is well known that the fifth nerve enters the dura mater just beneath the edge of the tentorium, and that it runs afterwards in a small but roomy canal in the dura mater, joining the Gasserian ganglion, which lies in a similar cleft on the upper surface of the petrous bone and on the roof of the carotid canal. Some experiments on the monkey to expose the crura had shown me that it was possible to expose the temporo-sphenoidal lobe, and then, by raising the brain carefully with a broad retractor, to lay bare the floor of the middle fossa of the skull. On trying this on the dead body I found that it was perfectly possible in man also, the only trouble being the small veins which come from the temporo-sphenoidal lobe and which enter the petrosal sinuses. If these be ruptured the hæmorrhage is very free, and, although not dangerous to life, nevertheless very effectually hinders the performance of the operation.

This exposure of the temporo-sphenoidal lobe in man I have carried out by making a large temporal flap, starting from the anterior extremity of the zygomatic process, and running upwards to the temporal ridge, following that line and descending along it to the asterion. The temporal muscle, after being separated from the bone, is then best removed, so far as its posterior half is concerned, and then the whole of the squamous portion of the temporal taken away by means of a trephined hole and suitable bone forceps. Anteriorly the middle meningeal artery may be dealt with where exposed, being simply ligatured in the dura mater. The dura mater is then to be opened along the full length of the area of bone removed, and the temporo-sphenoidal lobe thus laid bare. A broad copper retractor, with smooth and everted edges, is then gently slipped underneath the lobe and slowly but steadily raised. The lobe is partly moulded partly lifted upwards, and the floor of the skull is then easily seen and illuminated with the electric light. The guide to the fifth nerve now is the upper border of the petrous bone. The lobe being raised a little more, the edge of the tentorium will be defined and the point at which the fifth nerve passes beneath it could, in the first case I operated upon, be seen. The position of the canal in which the nerve is lying just above the ganglion must then be estimated, and a small puncturing incision made into it. As it is about a quarter of an inch in diameter, it can be recognised as soon as the puncturing instrument passes into it, and the dura forming its roof should then be further slit open. The nerve in this way is exposed, and is found to be freely lying in the little passage.

The first case on which I operated in this manner was the patient No. 5 in the table, in whom I had, as is shown there, previously removed a portion of the inferior dental and of the infraorbital. The recurrence of pain, for which she then desired further operative relief, began in the auriculo-temporal nerve, the only branch remaining of the inferior division which had not been cut. As the pain, however, also ultimately invaded apparently the stump of the middle division, I thought it best to attempt the operation of dividing the nerve behind the ganglion. The patient had not eaten any solid food for several months, and was not in a good condition to undergo the operation. However, as her state was a very desperate one, I agreed to perform the operation, warning the friends that there might be fatal collapse even on the table. As a matter of fact, the operation presented no special difficulty beyond that of being very tedious. I resected the zygoma in order to have more room, but I feel sure now that that was a useless complication—that it was quite possible to have reached the nerve without it, and I regret having done it, because I think it of course aided in producing the shock which caused a fatal termination to the case. On opening the dura mater the brain bulged moderately into the opening, but as soon as the effect of the shock began to show itself it of course sank. On exposing the nerve in the canal behind the ganglion I passed a small blunt hook around it, and it then occurred to me that the small branch of the basilar artery which accompanies the nerve might give some trouble. I therefore thought one might safely attempt avulsion of the nerve from its attachment to the pons, and on gently drawing on it with a hook this was easily accomplished, and without

³⁸ By the kind help of Drs. Savill, Lunn, and others.