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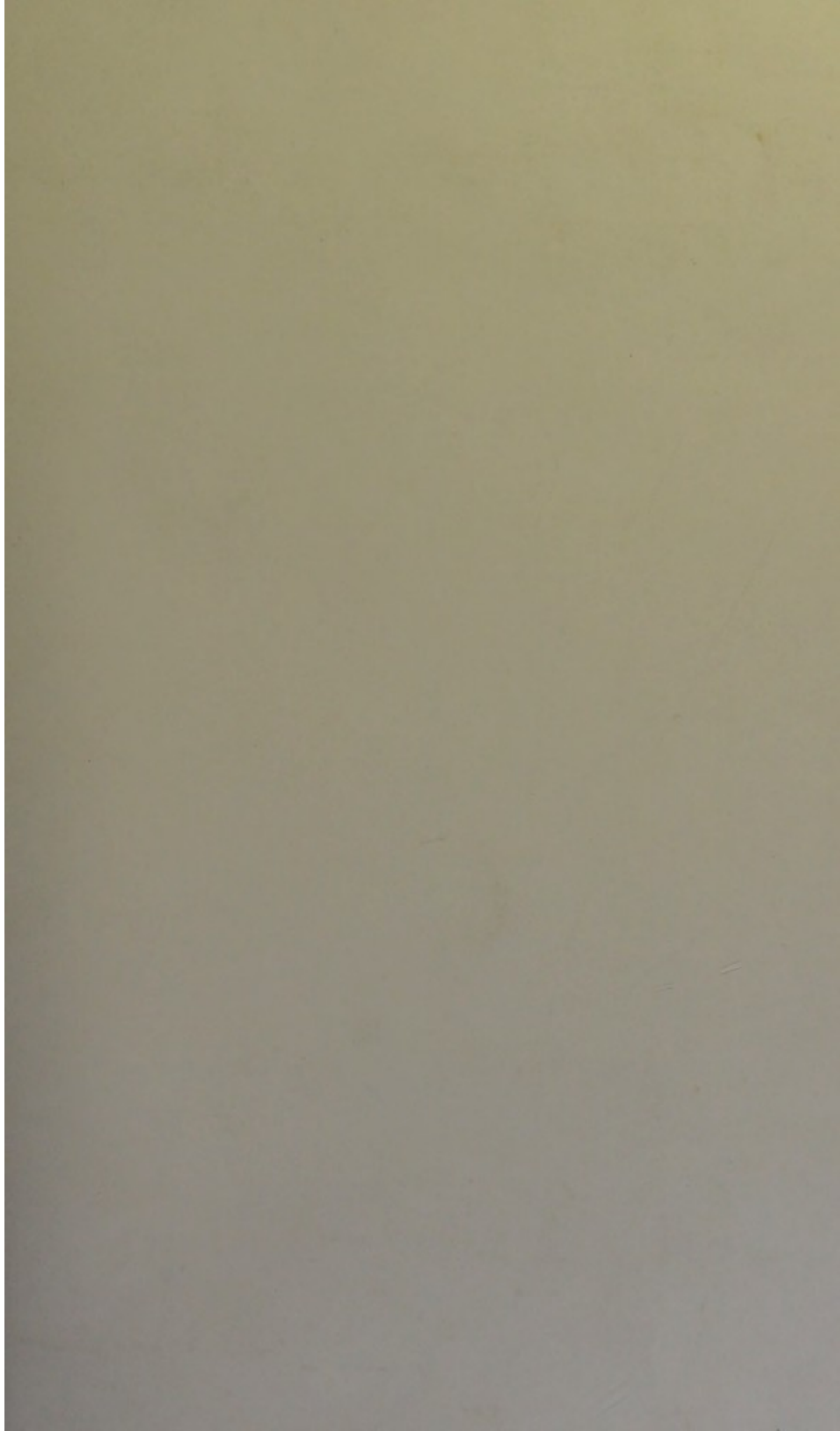
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Excision of the Tongue:

THE SUBSTANCE OF A PAPER READ BEFORE THE SURGICAL SECTION OF THE

International Medical Congress,

HELD IN LONDON, 1881.

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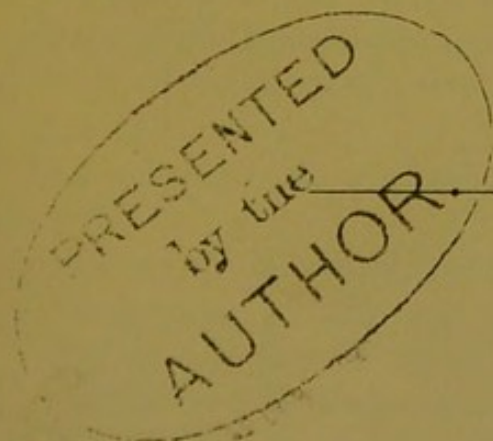
BY

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AND

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1881.

History of the Tongue

By J. H. Green, M. A., F. R. S.

Second Edition

London

Printed by J. H. Green, M. A., F. R. S.

1854

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EXCISION OF THE TONGUE.

On November the 3rd, 1877, I removed the whole of the tongue through the mouth with scissors, and in the *British Medical Journal*, December 8th, 1877, p. 303, I referred to the case, and briefly described the method of operating. D

This case was then, to the best of my knowledge, the first instance of the entire tongue having been removed for disease through the mouth by simple excision.

More than thirty tongues have to my knowledge since been removed by the same plan, and I now submit to the judgment of the profession the merits and the results of this operation.

The operation has been most accurately described by Professor Lund in a paper read by him, in May, 1880, to the members of the Manchester Medical Society, and subsequently published in the form of a small monograph by Messrs. J. and A. Churchill.

The operation is conducted after the following simple manner :—

1. The mouth is opened to the full extent with Mason's, or any other suitable gag, the duty of attending to this important part of the operation being entrusted to one of the two assistants required.
2. The tongue is drawn out of the mouth by a double ligature passed through its substance an inch from the tip. This ligature is given in charge of the second assistant, with instructions to maintain throughout the operation a steady traction outwards and upwards.
3. The operator commences by dividing all the attachments of the tongue to the jaw and to the pillars of the fauces,

after the manner suggested by Sir James Paget, with an ordinary pair of straight scissors.

4. The muscles attached to the base of the tongue are then cut across by a series of successive short snips of the scissors until the entire tongue is separated on the plane of the inferior border of the lower jaw, and as far back as the safety of the epiglottis will permit.
5. The lingual or any other arteries requiring torsion are twisted as divided. It is generally found that a moment's pressure with a small piece of sponge, held in sponge forceps, suffices temporarily, if not permanently, to arrest any bleeding; it is, however, regarded as desirable to twist, either immediately, or after the tongue is removed, every bleeding vessel.
6. A single loop of silk is passed by a long needle through the remains of the glosso-epiglottidean fold of mucous membrane, as a means of drawing forwards the floor of the mouth should secondary hæmorrhage take place. This ligature may with safety be removed the day after the operation, and, as it is invariably a source of annoyance to the patient, it is always desirable to adopt this rule.

The after treatment consists in feeding the patient for the first three days absolutely and solely by nutritive enemata; satisfying thirst by occasionally washing out the mouth with a weak iced solution of permanganate of potash; forbidding any attempt at speaking, and requiring that all the wishes of the patient shall be expressed in writing, or by signs. The difficulties and dangers of the operation are few and more imaginary than real. Hæmorrhage, the *bête noire* of most surgeons who contemplate removing the tongue, is in reality easily controllable, and frequently trifling. I have twice removed the entire tongue without having to secure a single vessel, and more than once have only had to twist one lingual artery.

The accompanying table shows that the tongue has been removed twenty-eight times with only one death as the immediate result of the operation, an old man æt. 69 (Case 29). Two other deaths occurred after the operation, but they resulted from remote causes.

CASES OF REMOVAL OF THE ENTIRE TONGUE WITH SCISSORS.

Case No.	Initials.	Sex.	Age.	Date of Operation.	Name of Operator.	Place where Operation was Performed.	Result of Operation.
1	J. H.	F	64	1877. Nov. 23.	Mr. Whitehead.	Manchester Royal Infirmary	Secondary hæmorrhage. Recovery. No return when last heard of six months after operation.
2	T. B.	M	56	1877. Sep. 27.	"	"	Recovery. No return when last seen two months after operation.
3	E. C.	F	34	1878. Jan. 12.	Professor Lund.	"	Discharged convalescent, Feb. 7th.
4	W. L.	M	43	1878. Sep. 7.	Mr. Bradley	"	Left hospital convalescent, Sep. 21st.
5	T. G.	M		1879. June 14.	"	"	"
6	M. W.	M	39	1879. Oct. 18.	Mr. Whitehead.	"	Convalescent in six days.
7	R. T.	F	39	1879. Nov. 15.	"	"	Left hospital convalescent, Dec. 1st.
8	J. H.	M	2	1880. June 29.	Professor Lund.	"	"
9	G. H.	F		1880. Feb. 12.	Mr. Whitehead.	Harpurhey, Manchester.	Died Dec. 10th, 1880.
10						Manchester Royal Infirmary	Died March 20th, 1880. Asthenia. Removed for macro-glossia. Case published by Mr. Maguire, Journal of Anat. and Phys.: Vol. xiv. p. 417.
11	T. S.	M	57	1880. Feb. 25.	Mr. Ewart	Higher Broughton	Died twelve months after operation. Recurrence in sub-maxillary glands.
12	J. D.	M		1880. Mar. 8.	Mr. Whitehead.	Manchester Royal Infirmary	Alive May, 1881, and free from return.
13	S. R.	F	46	1880. Mar. 22.	Mr. Heath	"	Left hospital convalescent, April 15th.
14	H. W.	M	58	1880. April 10.	Mr. Whitehead.	"	Discharged relieved, April 24th.
15	T. P.	M	55	1880. April 19.	"	"	Discharged May 8th. Not a bad symptom throughout.
16	S. B.	M	60	1880. June 12.	"	"	Alive March, 1881.
17	J. R.	M	67	1880. June 19.	"	"	Discharged July 8th, and reported himself well three months after operation.
18	J. S.	M	49	1880. June 22.	"	"	Left hospital apparently cured, July 8th.
19	P. K.	M	57	1880. Sep. 24.	"	"	Left hospital convalescent.
20	J. W.	M	50	1880. Sep. 24.	Mr. Heath	"	"
21	W. C.	M	43	1880. Nov. 5.	Professor Lund.	"	"
22	J. H.	M	43	1880. Nov. 27.	Mr. Whitehead.	"	"
23	R. B.	M	53	1880. Dec. 16.	Mr. Hughes.	Ashton-under-Lyne Infirmary	"
24	W. H.	M	63	1880.	Mr. Bartleet.	The Birmingham General Hospital	Reported well three months after the operation.
25					Mr. Jolly	"	Died on the 21st day after operation.
26	W. B.	M	51	1881. Jan. 22.	Mr. Whitehead.	Manchester Royal Infirmary	Tongue, floor of mouth, sublingual and submaxillary glands removed with scissors through incision below jaw. Death 12th day. Septic pneumonia.
27	M. D.	M		1881. Feb. 19.	Mr. Jones.	Manchester Royal Infirmary	Left hospital convalescent, March 12th.
28	J. D.	M	69	1881. Feb. 11.	Mr. Lediard.	Cumberland Infirmary, Carlisle	Died fourteen hours after operation from shock.

I am acquainted with the particulars of two other successful cases of removal of the entire tongue which I am requested not to include them in this list.

I am requested not to include them in this list.

In Case 10, a child *æt.* 2, tracheotomy had been considered necessary as a preliminary safeguard before removing the tongue, and the child's death appeared to have more to do with the tracheotomy than with the operation on the tongue, inasmuch as the wound from the latter healed, whereas that of the former sloughed.

It will also be observed that Case 26 involved the removal of other important structures as well as the tongue. I have, however, felt bound in justice to include this case in my table.

Taking, therefore, the most unfavourable estimate, the deaths in the twenty-eight cases do not amount to 11 per cent, and, when contrasted with the 30 to 60 per cent of deaths resulting from removal of the tongue by any other operation, I venture to affirm that substantial evidence has been submitted in favour of removal of the tongue with scissors by the method here described.

In order to illustrate the few remarks I feel justified in making on cancer of the tongue and its treatment, I have selected two of the operations out of the twenty-four I have performed as being well adapted for my purpose. The first case was recorded by Mr. Maguire, and to him I am principally indebted for the following notes:—

John Davenport, *æt.* 52, living at Runcorn, in Cheshire, was admitted into the Manchester Royal Infirmary on the 19th February, 1880. He was a boatman, and had been a great smoker. Previous to this illness he had very good health, although twenty-eight years ago he had gonorrhœa, and two months afterwards a chancre; he gave, however, no account of any secondary syphilitic symptoms. He was the father of seventeen children, three of whom were still-born. There was no history of cancer in his family. Seventeen years ago he noticed a small warty growth on the tip of his tongue, and this gradually increased in size. Three years ago he noticed his tongue becoming covered with a whitish fur, while, for seven weeks, as he himself stated, a sore had been forming behind the warty growth, and this had increased to the size shortly to be mentioned. He had lost much flesh during the previous two months, and in the last six weeks had become deaf on the left

side. At the left side of the extreme tip of the tongue and on the dorsal surface there was a small growth of a circular form, and about half an inch in diameter. This was slightly raised above the general surface of the tongue, and showed projections resembling filiform papillæ, the whole being covered with moist soft whitish scales. The mass was firm, and somewhat rough to the touch, but was not painful.

Behind this was a circular sore, one inch in diameter, which reached from the left border of the tongue to a little to the right side of the middle line. It did not, however, extend to the under surface of the tongue. It was moist and bright red in colour, except in its centre, which was occupied by a whitish brown slough. Its surface was granular, and its edges were everted and fungating. The tissue of the tongue near the ulcer was for a little distance swollen and hard. The inferior surface of the tongue was much swollen, hard, and tender to the touch in the region of the ulcer, but was not ulcerated.

The general surface of the tongue from the tip to the level of the posterior margin of the ulcer was covered by whitish scales, that accumulated into a small mass near the posterior part of the ulcer. The tissue on the floor of the mouth was a little swollen, but did not feel hard.

The patient had lost some teeth opposite the sore, but had no carious teeth. The glands beneath the tongue were felt externally to be enlarged but soft, but there was no enlargement of those at the angle of the jaw or in the neck.

The patient complained much of pain, which shot up along the left side of the face to the forehead and ear, but never affected the right side. The pain was increased by eating and drinking, especially cold fluids. There was great salivation, especially (the patient said) when he sat up; he also described the saliva as tasting sweet. The breath was foetid.

On the 8th of March, 1880, I excised, with scissors, the whole of the tongue through the mouth. The arteries were twisted, and a silk ligature was left attached to the mucous membrane in front of the epiglottis.

For seven days after the operation the patient was fed entirely by nutritive enematas. The temperature never exceeded 100°, and no pain was complained of by the patient.

On the twelfth day after the operation the patient was sufficiently recovered to leave the hospital. The floor of the mouth was in a state of healthy granulation. The patient could swallow fluids perfectly well, but could not masticate or swallow solid food. His sense of taste was perfect as far as could be ascertained. There was no glandular swelling of any kind in the neighbourhood of the mouth, and there was no pain in the side of the face. He could speak fairly well, making himself perfectly understood. The patient is alive and free from any return of the disease at the present time.

This case presents many points of clinical interest, and is of great pathological importance as presenting a somewhat rare combination of tumours of the tongue, and also as having afforded an opportunity for the examination of the so-called ichthyosis of the organ. Clinically the diagnosis of the three different growths was clear. The nature of the papilloma was evident from its form, its slow growth, and the fact of its having been stationary for such a lengthened period.

The ulceration was inferred to be of an epitheliomatous nature from its position, its sprouting red granulations, and its everted edges in place of the clean cut borders usually met with in cases of syphilitic ulceration of the tongue.

The patches of ichthyosis, or the leucomata, as Hutchinson calls them, were too typical to admit of doubt, and whether we regard the ichthyosis as a first stage of epithelioma, or as an independent disease, it is universally acknowledged to be at least a forerunner of the cancrioid. The ichthyosis is evidently nothing more than a hypertrophy of the epithelium of the part, and is not related in any way to the disease of the same name occurring on the external surface of the body. The most important part of the microscopical examination was that which showed the epithelioma to be merely a further development of the ichthyosis, the hypertrophied epithelium of the latter disease extending into the submucous tissue, and forming the columns of cells of epithelioma.

Although the disease in this case had not apparently extended to the glands, yet the cells of the lymphatics were seen to have assumed an epithelioid character, thus affording ample justification for the removal of the entire tongue.

Now it so happened that I had admitted into hospital the previous day, February 18th, 1880, a man *æt.* 58, suffering from almost precisely the same condition of tongue. He had a papilloma on the right side of his tongue, and on the left an ulcer with indurated and everted edges and red granulating centre. On the right side, in front of the ulcer, and extending to the under surface of the tongue, there was a patch about half-inch square of white, indurated, enlarged, and raised epithelium, possessing all the features of the so-called ichthyosis. The papilloma had existed thirteen months, the ichthyotic patch nine, and the ulceration two months. Although there was no distinct evidence of syphilis, he confessed to having had gonorrhœa 27 years previously. He had been a great smoker from his youth, and had generally used a clay pipe. There were also decayed and broken teeth in the vicinity of the ulceration. His family history was good.

On the 10th April I removed the whole of the tongue with scissors through the mouth. He made a rapid recovery, and left the hospital convalescent on the twelfth day after operation. He died, however, from recurrence of the disease in the submental glands on the 17th February, 1881, ten months after the tongue was removed.

These two cases may be regarded as somewhat uncommon, and I look upon them as of extreme value in demonstrating the stages of transition from the healthy mucous surface of the tongue to that morbid condition which we term epithelioma.

The mucous membrane of the tongue "is highly vascular, and consequently subject to activity of change, the natural epithelium passing through the phases of its life with singular rapidity." This vitality constitutes a surface intolerant of disturbing influences, controlled, however, by remote nervous, vascular, or constitutional conditions which affect the part for the time being; and as the hereditary tendency to cancer is probably owing to an increased susceptibility of the epithelium to irritation, it can readily be understood how the irritation of a rugged tooth or the friction of a clay pipe generally determines the site of the future epithelioma. When we regard the histological elements of the disease in its advanced stage, what more do we find than an

exaggeration and multiplication of the normal epithelial tissues of a part extending beyond their original limits or penetrating into remote structures, and an excessive proliferation of the epithelial cells lining the alveolar walls and lymphatic ducts?

In the cases just mentioned we have illustrations of the three possible directions in which this morbid process can extend. In the ichthyosis there are the superficial and lateral extensions; in the papilloma the upward growth, and in the ulceration the deep penetration, and, as it is the direction of the growth which not only regulates the history of such cases, but also their final results, we must recognise in it a feature of the greatest clinical value.

In the cases where the disease is superficial the lymphatic glands are late in becoming infected; but where the morbid process follows the direction of the lymphatic channels, glandular complications rapidly take place, and it is on these grounds we explain the long duration without gland affection in some cases, and the immediate liability to recurrence after removal in others, and it is from this knowledge that the operative procedure in the individual case should be mainly governed.

What could be more suggestive of the possibility of intercepting the disease than the history of these cases: and in what respect does the surgery of the present day fail to accomplish this apparently simple task? The majority, and, we must admit, the very large majority, of those suffering from cancer of the tongue die from a recurrence of the disease after operation; and although we have the satisfaction of knowing that the fault is not entirely our own, as most patients decline to be operated upon until operative treatment is hopeless, nevertheless we are to a great extent responsible, when we undertake to operate, and stop short of removing the whole of the disease. It is in these cases that life, and the reputation of surgery, are frequently and unnecessarily sacrificed.

If the cancer recurs, we know from the nature of the disease that some part of the morbid structure has been left behind; but if a permanent cure follows, the converse is equally certain. The fact that a few isolated cases of removal of the tongue affected with epithelioma remain free from disease for many years is of little value in the face of the vast number of cases

that end fatally within a few months from a recurrence of the disease; nevertheless, a single well-authenticated case of recovery is sufficient to disprove the dogmatic assertion that every case operated upon eventually dies from a return of the disease either in the floor of the mouth or in contiguous glands. If instead of a few cases a number could be proved to have made permanent recoveries, surgery would receive an impetus which would never be allowed to subside.

With the object of obtaining some definite and reliable information concerning the ultimate results after removal of the tongue for epithelioma, I have distributed to nearly every hospital in the kingdom forms which I have carefully drawn up for the record of cases. I now possess some 250 returns, from which I have obtained considerable information, and many valuable suggestions; but as the mere recital of statistics would be out of place on the present occasion, I reserve them for a more suitable opportunity.

In 1872 I published in the *Lancet* the particulars of an excision of the entire tongue by the galvanic écraseur. The patient at the time I operated was in her 69th year, and I have recently had the satisfaction of seeing her in perfect health at the age of 78. There has never been any sign of the disease returning, and there never was the slightest doubt entertained by the many who examined the case of its being well marked epithelioma. The interest of this case is somewhat increased by the fact of her brother having previously died from epithelioma of his lip. In this case eight years have elapsed without recurrence of the disease; but in a case recently published by Professor Buchanan, an interval of fifteen years had occurred without any return of the disease. To these cases must be added a patient of Billroth's, who lived five years and seven months, and another four years. A man operated upon by Nunneley lived four years, and eventually died of an independent disease. Hutchinson mentions four patients living and quite well at periods of three years or more after the operation, in whom the microscope left not the slightest doubt that the disease was cancer; and in one case Mr. Lund removed a portion of the tongue of a man who two years afterwards suffered from an epithelioma of the

lip, which was removed, and the man is alive and well at the present time. There are also other cases recorded as recoveries where the nature of the disease is more equivocal.

Scanty as the evidence may appear, there is sufficient to suggest at least that if the whole of the disease is removed reasonable prospects of permanent cure may be entertained.

The different ways of removing the tongue have been so frequently described of late in English and foreign journals, and the subject has been so exhaustively discussed in our own and in Continental Medical Societies, that it would serve no good purpose if I dwelt upon each operation separately.

The object of all is to remove the whole of the disease, and which is the one that best fulfils this purpose can only be proved by the results after more extensive experience. At present the data are insufficient to form a definite opinion, and, pending the publication of more cases, we must rest content to act according to our individual judgment, and commence, I trust, to submit the whole of our cases to more general scrutiny and comparison.

I have now had considerable experience in removing the tongue by most methods that have been advocated, and, as the main features of all may be reduced to the three principles of crushing, burning, and cutting, I may perhaps be allowed very briefly to refer separately to each.

I object to crushing, as effected by the *écraseur*, on the ground that it more frequently than not fails to accomplish the object intended. If the tissue of the tongue is friable, the mere weight of the instrument has been known to remove the tongue without the exercise of its special action. If the structure of the tongue is firm, either the wire generally breaks or fails to prevent hæmorrhage.

Removal of the tongue by the galvanic *écraseur*, and the galvanic or the thermo-cautery has led me to conclusions shared by many other surgeons, that the risks to life are materially augmented, that the instruments are difficult of precise application, that the operation is frequently followed by secondary hæmorrhage when the eschar separates, and that it is more prone to engender conditions favourable to septic dangers than any other mode of procedure.

A very important opinion was recently expressed at the Clinical Society by Professor Stokes, from which I very materially differ, and notwithstanding the opinion comes from so eminent an authority, I feel bound to express opposite views.

He stated "that he had noted that removal of the organ by a cutting operation is not only more liable to be followed by hæmorrhage, but also, what is of more serious moment, by septic infection."

This statement is somewhat surprising, as it is directly opposed to the conclusions drawn from the returns of over 250 cases. My own experience would induce me to say that the danger from hæmorrhage when either the knife or scissors is used is simply *nil*, as the arteries should they require it, which is not always the case, are either twisted or tied.

I do not admit that, because in some of the cases where the tongue is removed by the *écraseur* no bleeding takes place, the absence of bleeding is the consequence of any action the *écraseur* may possess in crushing the arteries; on the contrary, I am inclined to the belief that the hæmorrhage stops from pressure, just as it will frequently stop, when the knife is used, by the momentary pressure of a finger.

The construction of the *écraseur* is opposed to the belief that it can strangle within the final loop the arteries of the tongue. It is only necessary to screw up any *écraseur* to its utmost tension, and then observe how much larger the tightest loop is in comparison with the size of a lingual artery. If the loop is excessive compared with the arteries, what must it be when compared with the lymphatics?

If the crushing was conducted by an instrument with blades that came into final contact, I could imagine that arteries and lymphatics might be permanently occluded, and hæmorrhage and septic invasion prevented.

The difference between crushing and cutting in the influence over direct septic infection through the lymphatics invites more than passing attention. If it could be shown that the *écraseur* by crushing occluded the mouths of the lymphatics, as it is credited with closing the arteries, there would be no difficulty in comprehending how one of the channels for the introduction of septic poison into the system would be cut off and thus would

be established the advantage of the *écraseur* over cutting. But it has yet to be proved that the *écraseur* is even effectual in crushing the arteries, consequently it cannot be conceded that it closes the lymphatics, which are undoubtedly much smaller.

The operation I have finally adopted is the one just described, and, as I have never found any difficulty in boldly removing the whole of the tongue through the mouth, I see no object in dividing the jaw. If the floor of the mouth or the glands below the jaw are involved, I advocate the excision of the tongue through the mouth first, and afterwards the removal of the glands and other structure by an independent incision below the jaw.

During the last four years Billroth, who appears to have had by far the largest experience of any surgeon in removal of the tongue, has entirely abandoned the use of the *écraseur* on account of the enormous mortality, which he estimates at 61·5 per cent.

He now commences his operation by tying one or both lingual arteries, and removes through the wound made for this purpose, enlarged if necessary, any glands that may be affected, and afterwards utilises the wound as a channel for the drainage of the subsequent secretions from the mouth after removing the tongue. After having filled the wound with antiseptic gauze, the mouth is opened to its full extent by means of Herster's gag, and the angles of the mouth and the lower lip are drawn apart by three double hooks.

Where the floor of the mouth is extensively affected, the teeth of the corresponding side are extracted, and the gums detached from the inside of the lower jaw by means of a raspator. He then excises the diseased structures by repeated short cuts with a pair of curved scissors. Any hæmorrhage that may occur is immediately arrested by the ligature of any bleeding vessels. If both lingual arteries are previously tied hæmorrhage is nearly absent, and the stump looks pale, like the muscles of a limb after Esmarch's bandage has been used. If only one lateral half of the tongue has to be removed he first makes a median division, and afterwards a transverse section of the affected side.

When the operation is completed, the drainage is carefully provided for, and the surface of the wound is cauterised by means of a strong solution of permanganate of potash, or the same salt in powder.

After operations have been conducted in this manner Billroth has never experienced cellulitis, diphtheria, or bronchial pneumonia. The temperature remains almost normal, and between the third and seventh day the drainage tubes are removed. The patients are fed by means of an œsophageal tube for about the first week.

Billroth observes that the tongue can easily be removed with the curved scissors through the mouth, after the lingual arteries have been ligatured, which he regards as a simple matter. The success of his operations by this method amounts to 84·2 per cent, and further testify to the advantage of excision over the *écraseur*.

From this account it will be observed that the operation of Billroth very much resembles the one I have been in the habit of practising without knowing that any other surgeon relied entirely on scissors for excision of the tongue. The only difference in our modes of procedure appears to have been that Billroth made the ligature of the linguals a preliminary operation, while I left these arteries intact until divided during the excision of the tongue. This is a minor difference, and when the operation involves more than removal of the tongue, Billroth's method is probably to be preferred, as the submental wounds are quite as available for the removal of diseased glands as the one I am accustomed to make subsequently and independently for the same purpose.

I have recently sent to the surgical registrars of hospitals a letter urging them to adopt some uniform system of recording the results of operations on the tongue for cancer, and, with your permission, I will conclude by taking this opportunity of repeating the grounds upon which I think this desirable.

The past records of excision of the tongue have not hitherto been given in sufficient detail, or in such numbers as to enable the profession to arrive at any definite conclusions on many vital and vexed questions affecting this operation. Amongst the most important points in dispute, I venture to mention

that considerable divergence of opinion exists as to whether removal of the tongue for cancer materially prolongs life, or alleviates suffering; which of the numerous methods advocated for removal of the tongue fulfils in the widest sense the objects of the operation; which operation is attended by the least risk to life, and prevents to the greatest degree the dangers from hæmorrhage, immediate and remote, shock, and septic dangers; and which operation is the least frequently followed by a return of the disease, or is attended by the longest interval without any recurrence; the advantage or otherwise of partial over complete removal, and the subsequent influence of each on the patient's powers of articulation.

There are other considerations, such as the causes influencing the rapidity of growth; the conditions regulating immediate or retarded implication of contiguous glands; and the connection between the assigned effects of irritation and initial growth; each consideration requiring the light of accumulated evidence. It is not, moreover, unreasonable to suppose that, with a methodical record of cases, aids may be found that will considerably lessen the difficulties which now obscure differential diagnosis.

There are also many other points, in connection with cancer of the tongue, which are associated with doubt in the minds of surgeons, and which can only be settled by a wider field of investigation, based upon more rigid and precise lines of enquiry than those that have hitherto been adopted on this important subject. A large number of cases, carefully recorded on some uniform system, would enable us to decide many of these questions, and it is in the hope that I may obtain the co-operation of those who have it in their power to advance surgery in this particular department that I am prepared to supply to any member of the profession special forms, which, if accurately and generally filled up, must in the aggregate eventually prove of the greatest value.

The vital significance and surgical importance of the tongue as the seat of cancer is best appreciated by a reference to the returns of the Registrar General, which show with what alarming strides cancer is increasing in England.

In 1851 there were 5,218 deaths from cancer, whereas

in 1879, the year of the last report, the deaths amounted to no fewer than 12,799. To make this contrast more conspicuous, I have compared the population of the two years with the number of deaths in each, when I find that the ratio of deaths in 1879 was 509 per million, whereas the deaths per million in 1851 were only 290; and on the assumption that cancer will continue to increase at the same rate during the next eighteen years, the deaths per million in 1897 will be 893, or more than three times as many deaths per million as occurred in 1851.

How far, as the Registrar General observes, "this apparent increase is simply due to improved diagnosis, and how far to a real augmentation, is doubtful;" but when we consider that an improved diagnosis is more likely to tell in the opposite direction, we have every reason to fear that the returns of deaths from cancer are rather below than in excess of the actual number.

We have only, I regret to say, very imperfect data for calculating the number of deaths from cancer of the tongue, as there is no attempt made in the returns of the Registrar General to specify the locality of the disease; but suppose, as I believe, from an estimate I have made, that 6 per cent of the number included in the generic term cancer are cases of epithelioma of the tongue, a percentage which I think will not be found to be an exaggerated proportion, we may assume that 640 people died from cancer of the tongue in this country during the year 1879.

The grave character of these statistics cannot fail I think to arrest the attention of thoughtful men, and stimulate the minds of scientific surgeons to increase the means at their disposal of lessening the mortality of this disease.

We have no reason to suppose at the present day that the internal administration of medicines, or that the topical application of drugs, has the smallest influence in arresting the progress of cancer; consequently, unless surgery can accomplish this, we must regard the disease as hopelessly incurable.

EXCISION OF TONGUE.

Name and Address of Patient
 " " " Operator
 Hospital Admit^d. Disch^d.
 Age of Patient Sex Social state Occupation
 Family history, facts in, having any direct bearing on present illness—
 cancer, syphilis, &c.
 Date of first appearance of disease
 Presumed exciting cause of disease—condition of teeth in vicinity of
 disease—if smoker, kind of pipe generally used, &c.
 Precise seat of disease—right or left lateral half; anterior middle or
 posterior third; dorsum, under surface—lateral borders, &c.
 Characteristics of growth—ulcerated, fissured, indurated—induration
 preceded, or followed by superficial sore—previous ichthyosis, or
 superficial glossitis, &c.
 Infiltration or induration of surrounding parts—palate, floor of mouth,
 epiglottis, tonsil, pillars of fauces, cheeks, gums, lips, reflection
 of mucous membrane, jaws, submaxillary, sublingual, cervical
 lymphatics, parotid, &c.
 Symptoms, character, and seat of pain, difficulty in deglutition, articu-
 lation, mastication, &c.
 Nature of operation—knife, scissors, écraseur (chain, wire, galvanic),
 galvano-cautery, thermo-cautery, section of jaw, ligature, incision
 through cheek, elastic ligature—median division—incision below
 jaw, &c.
 Date of operation
 Complications of operation, hæmorrhage, immediate, secondary, &c.
 Amount of tongue removed
 Tracheotomy performed previous to, during, or after incision
 Diagnosis verified by microscopic examination
 Date when last seen
 Recurrence of disease after operation Situation
 Cause of Death—Gland disease, hæmorrhage, inanition, exhaustion
 after operation, shock, pneumonia, cellulitis, pyæmia, septicæmia,
 gangrene, erysipelas, &c.
 Date of Death
 Temperature—highest recorded during the first fourteen days succeeding
 operation
 Post-mortem examination—and remarks
 Reference, full and exact, where case may be found reported

These forms are printed on foolscap sheets, with ruled interspaces left
 blank for the record of each case.

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