THREE YEARS' EXPERIENCE OF BUTLIN'S OPERATION FOR CANCER OF THE TONGUE.*

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IN 1898 Mr. Butlin delivered his Hunterian lecture on "What Operation can do for Cancer of the Tongue." In this lecture he called attention to the importance of removing the groups of lymphatic glands associated with the tongue in *all* cases of operable cancer of that organ. This view thoroughly appealed to me, and I at once put it into practice; but not, I regret to say, with sufficient thoroughness and regularity to test its influence on results properly. Fortunately Mr. Butlin recurred to the subject in a clinical lecture published a little over three years ago in the *BRITISH MEDICAL JOURNAL*. This time he laid down more definite lines on which operations for cancer of the tongue should be conducted, and supported his views with such improved statistics, that the conviction must have been brought home to all surgeons who read this lecture that he had achieved a notable advance in the surgery of the malignant tumours of this region, in which he ought to be followed by all those undertaking such operations. Since the publication of the lecture in October, 1904, I have in every case, so far as it has been possible, operated on the lines suggested, and the object of this short communication is to report the results obtained.

The operation advocated involves the removal of the primary growth, and a complete dissection of the entire anterior triangle of the neck from clavicle to jaw, clearing out the whole of its contents down to the bare surface of the great vessels and muscles. This is an extensive proceeding, and if undertaken at one time the whole of the large wound becomes infected from the mouth, rendering the operation very serious and not rarely fatal. Though there are distinct advantages in removing the tongue and its area of lymphatic distribution in one continuous mass, they are purchased at too great a risk to life, and the operation should therefore, whenever possible, be undertaken in two stages. First the primary growth is removed with a good margin of healthy tissue; then, as soon as the patient is fit for it, usually in about a fortnight, the neck dissection is carried out.

The primary tumour may be situated in almost any part of the mouth, and for the purpose of the subject under discussion no distinction should be drawn between those which commence on the tongue, and those which originate in any other part of the oral cavity. All are the same variety of cancer, follow the same course, and require the same treatment.

To judge by my own experience, cancer (epithelioma) attacks the mouth in the following situations mentioned in the order of their frequency:

1. The side of the tongue.
2. Anterior pillar of the fauces.
3. Floor of the mouth about the orifices of the salivary ducts.
4. Cheeks and lips.
5. Tip, dorsum, and epiglottis.
6. Palate, and top of pharynx.

The lip and the side of the tongue are the most favourable positions; the tip, dorsum, and cheek the next. Any of the others, if quite small, may be favourable; but growths on the fauces soon spread to the bone, and involvement of bone is one of the most hopeless complications.

It is not necessary to go into details as to the operations required for the removal of epithelioma arising in the lips or cheek. In early cases one is justified in expecting success. In neglected cases there is practically no hope of an ultimate cure, except in some chronic growths in old people. All the groups of glands become infected in lip cases, and therefore they require quite as complete secondary operations as in cancer of the tongue. When the growth is situated on the floor of the mouth or tongue the part is removed with knife or scissors in the ordinary way, though I doubt if one can really do justice to the patient by a purely intraoral operation, except when the growth is in a very early stage. Formerly I

usually made Kocher's incision below the jaw, or occasionally followed Syme in splitting the jaw in the middle line, but of late, with the object of leaving the neck intact for Butlin's dissecting operation, I have, whenever it was possible, confined the primary proceeding entirely to the oral cavity. In this way undoubtedly some risk is run of cutting too near the growth, and consequently of getting a local recurrence, and any kind of recurrence in this disease is usually the beginning of the end. Laryngotomy, which adds very little if at all to the severity of the operation, is in some cases a great help, especially because it enables the anaesthetist to do his work more thoroughly and to keep out of the operator's way; but it does not very greatly facilitate a wide extirpation of the tissues beyond the tumour, and from this point of view cannot compare with the advantages of Kocher's and Syme's incisions. I am seriously considering a reversion to these methods for bad infections of the body of the tongue and floor of the mouth. There is only one operation by which we can deal satisfactorily with the fauces and neighbouring parts of the tongue and pharynx, and that is by an incision commencing at the corner of the mouth, and continued in a curve across the angle of the jaw and down the edge of the sterno-mastoid, the jaw being divided in the same line. In this operation it is imperative to remove the glands (submaxillary and carotid) at once, and the dangers are thereby increased; still, though big, it is very well borne by fairly good subjects. Convalescence is a little slow, owing to the jaw having been cut. It is, of course, necessary to wire it, and when the soft parts have been very freely removed there is always the possibility or even the probability that a slight exfoliation of bone may occur. Epithelioma of the palate is rare. Small growths are easily dealt with, but large ones need laryngotomy with plugging of the larynx. Epithelioma of the epiglottis is fortunately also rare. It is a most inconvenient situation. I believe many surgeons would attack it by a semicircular incision into the floor of the mouth under the front portion of the jaw; but I am so familiar with the route through the angle of the jaw that I prefer this latter method. It gives a very good view of the parts which have to be dealt with.

As soon as the patient has recovered from the primary operation on the tongue, lip, cheek, or palate, Butlin's operation on the neck is undertaken; that is usually after an interval of two or at most three weeks. In the fauces cases the submaxillary and carotid regions have necessarily been cleared out, together with the primary growth, while the submental glands are well removed from the infected area, therefore the "Butlin" does not apply to these cases. For the rest one has to decide whether to do a "Butlin" in all cases, and how often one should do it on both sides. The originator of the operation holds that it must be done in all cases. He supports this opinion by referring to a patient in whom glandular infection was associated with a malignant change in the tongue so early that the pathologist regarded it as precancerous, and all those who have had much experience of epithelioma know that very insignificant primary growths sometimes give rise to virulent and extensive secondary infection. Indeed, the whole of one's past experience favours the view that the glands should always be thoroughly removed. The only safe plan is to make the rule absolute. We should also be equally uncompromising in regard to dealing with both sides whenever the growth has originated near, or has subsequently approached, the middle line. Of course, one has felt one's way gradually in this matter, for it has seemed hard to press a third operation on the patient, but I have come to the conclusion that it is essential. Here is a case in point:

A year ago Dr. Middlemass Hunt sent me a gentleman with epithelioma of the epiglottis. It was not extensive, and was quite satisfactorily removed, together with the neighbouring part of the tongue. The growth had involved the left side more than the right, hence I commenced the neck with a thorough operation on that side. The glands removed were microscopically examined, but no growth was detected in them, and the patient begged me to let him off the opposite neck operation. I considered the point, and, seeing that the primary growth was small and that the glands on the side most likely to be infected appeared free, agreed that he might take the risk. Two months ago he was attacked with influenza, and an upper carotid gland on the right side became enlarged and painful. He then returned to me, and I made a complete clearance of the right anterior triangle. The only enlarged

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gland was the one referred to. It was breaking down, and contained pus, but at one spot was a small patch of white, hard infiltration. This was epithelioma—clearly, I think, anolent epithelioma, because the horny cell-nests were not surrounded as usual by growing cells, but were directly in contact with connective tissue. This patch of epithelioma was, of course, in that carotid gland when I removed the epiglottis, and by failing to carry out the "Butilin" on both sides, as I ought to have done, he went away with a seed which must have been fatal if it had not been brought to light by the attack of influenza—I hope before any fresh growth had taken place.

The more experience I get the more I am convinced that we cannot be too careful in carrying out this principle of following up a cancer operation in the direction of secondary infection. Sir William Mitchell Banks a great many years ago impressed upon us the importance of clearing out the axilla in all cases of cancer of the breast. His practice has long since become general. There should be no hesitation in according an equally universal acceptance to Mr. Butlin's advice in regard to tongue cases; nor, indeed, should one have to urge the importance of safeguarding in this way cancer operations in general, especially in the case of growths like epithelioma, which are known to be markedly malignant, but with a usually limited area of secondary infection. I now make it a rule to follow up operations for cancer of the penis, scrotum, anus, head, and limbs with a properly planned attack upon the neighbouring lymphatic glands, and hope in the future to be rewarded with better success. Still, whilst recognizing the extreme importance of these radical operations for cancer, one must not allow one's judgement to be lost in routine practice; and, especially in cases of internal cancer, other factors come into play, such as the enormously increased danger to life as one increases the area of the operation on the one hand, and, on the other, the comparatively slight tendency that is shown by cylindrical-celled carcinoma towards early infection of the lymphatic glands.

The actual operation suggested by Mr. Butlin for tongue cases consists in making an incision along the whole length of the anterior border of the sterno-mastoid muscle and joining this at the level of the cricoid cartilage with another commenced at the point of the chin. The two triangular flaps thus outlined are reflected with the least amount of subcutaneous tissue, because, especially in the submental and submaxillary regions, there are some very superficially-placed lymphatic glands. The border of the sterno-mastoid muscle is then defined, and all the cellular tissue down to the muscles and great vessels is cleanly dissected up and removed. In the submental region one has to be careful not to miss glands deeply placed between the genio-hyo-glossus muscles. In the submaxillary region the entire salivary gland is taken, which permits a very clean sweep of this important tract, and in the carotid region the connective tissue and glands contained in it are removed from the clavicle to the mastoid process, particular care being taken to get all the glands from the bifurcation of the artery upwards, for it is these which are first infected. It is impossible to get the upper carotid glands without cutting the parotid salivary gland. This is unfortunate, because in so doing one cuts the cervical branch of the facial nerve, paralyzing the corner of the lip, and also permits the escape of salivary secretion into the wound. However, these are minor troubles compared with the issues at stake. Although the operation seems severe, it is remarkably well borne, even by patients 70 years of age, and heals excellently. It is really much less serious than the primary operation in the mouth, and has not given me cause for anxiety in any of the cases. If there be a fault, it is not that the operation is too big, but that it is not big enough. When there are infected glands on the jugular vein it would usually be wise to extend the incisions, divide the sterno-mastoid muscle, remove the vein, and carry the dissection into the posterior triangle. The muscle may be excised or sutured as circumstances dictate.

During the three years 1905 to 1907 I have operated on 35 cases of cancer of the mouth, many of them very bad cases—I think much worse than Mr. Butlin would have to undertake, because most of my cases are derived from hospital practice, whilst all of his, I believe, are private patients who come for treatment at an earlier stage of the disease. Of these 35 cases 2 died from the operation, both of sepsis. For many years I have not

lost a case from any other cause. One of the deaths was simple bad luck, for the growth was a very small one on the side of the tongue; but the patient was a very fragile anaemic woman of 60. Her mouth became very septic; cellulitis followed, and she died in four days. The other case was a big operation in an alcoholic subject involving the jaw, and I knew that he ran a considerable risk. I am very glad to say that I believe we are now combating this danger successfully. The prophylaxis was suggested to me by my colleague, Sir James Barr. He advised that in all those subjects likely to run serious risk of sepsis a dose of polyvalent serum should be given before the operation. I have now tried this in several of the worst cases, and the result appears to have been excellent. I am sure the treatment is worth an extended trial.

It is extremely difficult to classify these 35 cases in such a way as to convey a fair idea of the results obtained. If I mix cases which offered me every chance of success with those which offered me hardly any a statistical table would be useless; so I will ask you to accept my opinion as to which were favourable and which were unfavourable, and classify them in that simple way. The most favourable were growths up to an inch in diameter well situated for removal. The bad cases were mostly large growths, often badly situated. The worst involved the bone.

RESULTS OF BUTLIN'S OPERATION FOR CANCER OF THE MOUTH, 1905, 1906, AND 1907.

Total number of cases, 35—Lip, 3; cheek, 3; palate, 1 tongue, 28. Favourable cases, 11; advanced cases, 15 involving bone, 9.

Favourable Cases.—Free from recurrence, 9; died from operation, 1; no report, 1.

Advanced Cases.—Free from recurrence, 8; has recurrence, 1; died from the disease, 5; no report, 1.

Bone Cases.—Known to be free from recurrence, 0; have recurrence, 4; died from operation, 1; died from the disease, 2; no report, 2.

Totals.—Free, 17; recurred, 5; died of disease, 7; died of operation, 2; no subsequent report, 4; = 35.

Duration Free (in years and months).—3.4, 3.0, 2.11, 2.11, 2.10, 2.5, 2.2, 1.10, 1.9, 1.7, 1.3, 1.2, 1.1, 1.0, 0.5, 0.4, 0.4 = 17.

Finally, the impression on my mind for the three years experience of Butlin's operation is entirely favourable, and I warmly advocate its general acceptance as a routine practice. In principle it is not of course new; the important point is the recognition of the fact that a definite plan of campaign must be followed if the enemy is to be successfully routed, and therefore, with very few exceptions, in cases of cancer of the skin, mouth, penis, scrotum, anus, labia, larynx, breast, and parotid, one should accept as a necessary part of any curative operation a properly-planned dissection for dealing with the probable track of secondary infection. In cases of cancer of the rectum, vagina, uterus, ovaries, testes, stomach, bowel, etc., one should always have the same end in view, though it may not be possible or desirable to attempt to attain it in the same way.

In regard to the primary operation on the tongue I am not quite satisfied that any but the most favourable cases can be so well dealt with through the mouth as by some incision which allows of more room, a better view, and more deliberate dissection. I am inclined to advocate for such cases a return to Kocher's and Syme's incisions, involving, of course, the clearance of the submental and submaxillary areas at the primary operation, but leaving the carotid area and what may be considered necessary in the posterior triangle for the second operation. With modern precautions a limited opening up of the neck is not very serious. My cases in this series which were so treated were the worst type of cancer of the mouth as met with in hospital patients. I never refuse to operate for cancer of the tongue if it be at all possible; hence several of these were as bad as they could be. Only one died, and I think had the prophylactic treatment with polyvalent serum been carried out in his case he would have recovered. In future I am prepared to adopt a more extensive primary operation in a larger number of cases.

THE Royal Sanitary Institute has instituted an examination for women health visitors and sick nurses. Full particulars can be obtained on application to the Secretary, Margaret Street, London, W. The first examination will be held in Dublin on June 12th and 13th.