CLINICAL LECTURE ON SYPHILITIC AND CANCEROUS ULCERATION OF THE TONGUE.

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ULCERATION of the tongue may be simple, syphilitic, or cancerous. The *simple ulcer* is often caused by the irritation of a sharp tooth, or may be due to dyspepsia. It is small and superficial, and, unless due to local irritation, is generally multiple, and often found beneath the tongue. It is painful, and interferes with the movements of the tongue, but yields readily to treatment. The removal of the sharp corner of a decayed tooth with a file, and the subsequent application of a stick of nitrate of silver to the ulcer, are generally sufficient to effect a cure when the cause is local. When it is constitutional, a brisk purge, with the local use of the glycerine of tannin or any astringent gargle, will be sufficient treatment.

Syphilitic ulceration may appear during the secondary stage of the disorder along the edges of the tongue, and will almost always be found to have a corresponding white patch on the mucous membrane of the cheek. These ulcers have no induration at their bases, but, when healed, leave an irregular fissured border, which is very characteristic. A later form of ulceration is found in fissures of the dorsum, which leave irregular furrows in healing.

The deep syphilitic ulcer is due to the breaking down of a gumma, and it is this kind which is apt to be confounded with cancerous ulcerations. The ulcer is irregular, with everted edges, and presents a yellowish slough at its base, in which a varying amount of induration can be detected. It is often in the central portion of the tongue, whereas epithelioma is more commonly at the sides; and careful investigation will show that a lump has been noticed in the organ before the ulceration commenced, and that the induration diminishes as the ulcer grows; whereas in cancer the induration follows the ulcer, and steadily increases in extent. Still, it must be admitted that cases occur, in which it is impossible to give an accurate diagnosis without having recourse to the tentative administration of iodide of potassium, and that, even then, it is not always possible to be sure that epithelioma has not begun in an old tertiary sore.

In the treatment of syphilitic ulceration of the tongue, regard must be had to the stage of syphilis in which it occurs, and the previous treatment undergone. In the superficial ulceration, mercury in the form of bichloride or iodide is much more effectual than the iodides alone, and should be had recourse to, unless the patient's health has been shaken by previous courses of the drug. In the tertiary form of ulcerated gumma, iodide of potassium will certainly effect a rapid cure if the ulceration be recent, provided it be given in sufficient doses, beginning with not less than ten grains thrice daily, and being increased to thirty-grain doses, if smaller ones be not effectual. In all forms of syphilitic ulceration, the local application of mercury is useful; but it must be applied, not in the form of gargles, which are used and spat out at once, but as a lotion, to be held in the mouth for five minutes, so as to "pickle" the tongue. A lotion containing a quarter of a grain of bichloride of mercury to an ounce of water, with a little glycerine or honey, is a very good form, and the strength may be increased after a time with advantage. Care must, of course, be taken that none of the fluid is swallowed.

Cancerous ulceration is of the epitheliomatous type, unless it should supervene in the later stage of scirrhus, which is of rare occurrence in the tongue. Attacking the side of the tongue, in patients over forty years of age, the onset of the disease is so insidious as to attract little attention, the ulcer being often attributed (and perhaps correctly as to origin) to the irritation of a tooth. When well developed, the ulcer is usually oval in shape, with sharply cut edges, and a marked induration beneath it when the parts are grasped by the finger and thumb. The pain of cancerous ulceration is a well-marked and early symptom being lancinating and acute, and shooting up into the ear. The irritation causes a great flow of saliva, and the tongue is moved with difficulty, at first because of the pain produced, and later on because it is bound down by the infiltration of all the structures. The submaxillary

lymphatic glands become involved early in the disease, being at first swollen and tender, and later on being apt to suppurate and break down, causing large openings beneath the jaw.

Should the disease spread towards the base of the tongue, death is occasionally due to hæmorrhage from one of the lingual arteries; but, in cases where the anterior part of the tongue is involved, it not unfrequently becomes adherent to the incisor portion of the lower jaw, and ultimately infiltrates that bone. In these cases, the patient has generally a longer life of great misery, and dies at length, exhausted by pain and discharges from numerous open sores about the chin and angles of the jaw.

In the treatment of epithelioma of the tongue, all surgeons of experience are agreed as to the inutility of medication, whether topical or general, and the advisability of early and complete removal of the disease. A recent discussion at the Société de Chirurgie de Paris (*Medical Times and Gazette*, January 8th, 1881), has shown that all the leading surgeons of that city are agreed with those of other countries, that the administration of iodide of potassium in true epithelioma is useless, and that the constant application of nitrate of silver is harmful. The difficulty in practice is to induce a patient to take a sufficiently grave view of his case at an early stage, when an operation may be undertaken with advantage and with a fair prospect of relief, prolonged if not permanent. In the later stages, when the lymphatic glands are involved, it becomes a question whether any interference is advisable, and many surgeons would refuse an operation; but it appears to me that, in many even of the worst cases, temporary relief may often be given by operating, provided the patient is prepared to run the immediate risk of the proceeding, which is undoubtedly great; and Mr. Stokes of Dublin has recently brought before the Clinical Society of London cases in which he removed enlarged and infiltrated lymphatic glands with good results. Still, life prolonged in misery is worse than death following close upon the operation, and I have been thanked more than once by dying patients for having given relief during the few days for which they survived the operation. Anæsthetics have robbed operations of so much of their horror, that patients may now-a-days be induced to submit to extensive mutilations, which would have been impossible, or at least unadvisable, without chloroform. Chloroform is necessarily the anæsthetic to be employed in operations upon the tongue, for ether is inadmissible; first, because of the difficulty of keeping the patient under its influence when atmospheric air necessarily gains free admission; and secondly, because if, as often happens, a cautery is required in the course of the operation, a dangerous explosion and conflagration in the patient's mouth may be caused by the inflammable vapour of the ether.

Ligature of the lingual artery has been advocated both by Demarquay and Moore (*Medico-Chirurgical Transactions*, vol. 45), in order to check the growth of cancer of the tongue, as well as for the arrest of hæmorrhage, but has not yielded the results anticipated. I have on two occasions tied the lingual artery, once for hæmorrhage occurring in the course of a case of cancer, and once with the view of checking the growth, which was rapidly extending; but in neither case did the ligature appear to have any influence in staying the course of the disease.

Division of the lingual nerve is another palliative operation recommended by Hilton and Moore; and this certainly is efficacious, for a time at least, in relieving the pain of a cancer involving the side and tip of the tongue. The operation is not a difficult one, and has the negative advantage of doing no harm, if it effects little good. The operator feels for the mylo-hyoid ridge of the lower jaw, immediately below the last molar tooth; and a sharp-pointed curved bistoury, pushed through the mucous membrane at this point, will readily divide the nerve against the lower edge of the ridge, with little or no bleeding. The side of the tongue will be thoroughly numbed for some days, and then sensation slowly returns from union of the divided nerve, when the operation may be repeated.

Removal of portions of the tongue with the knife is an operation which has fallen into disuse, owing to the hæmorrhage ordinarily accompanying it. Sir William Fergusson, who advocated the practice, and who thus removed more than one-half of the tongue in the case of the late Dr. John Reid, maintained that the fear of hæmorrhage in these cases was exaggerated; and, in his account of that particular operation (*Practical Surgery*, p. 517), says: "The bleeding for a minute or two looked formidable; several vessels were speedily secured, and there was no further trouble in this respect." It must be noted, however, that the operation was performed without an anæsthetic, the patient being a man of great moral courage and physical endurance, and that only one lingual artery was divided. With an unconscious patient, in whom both arteries have been divided far back, I have seen the very greatest difficulty arise in securing the vessels, which play

across one another, and obscure the operator's view in the dark cavity of the throat.

In such cases, and in cases of secondary hæmorrhage after removal of large portions of the tongue, I have found that it is practicable to arrest all hæmorrhage in the following way. The forefinger, passed well down to the epiglottis, is made to hook forward the hyoid bone, and drag it up as far as practicable towards the symphysis menti. The effect of this is to stretch the lingual arteries so as to completely control for the time the flow of blood through them; and in this way portions of the anterior part of the tongue may be cut off almost bloodlessly.

The ligature formerly used for strangulating portions of the tongue has fallen into disuse, because of the practical difficulty of keeping it sufficiently tight to ensure continuous strangulation of the part to be removed, and also because of the suffering caused by a sloughing mass of tissue in the mouth. It is, unnecessary, therefore, to consider the various modes devised for applying the ligature in former years.

The écraseur has been extensively employed for removal of portions or the whole of the tongue with very satisfactory results. The wire écraseur answers the purpose better than the chain instrument at first employed, in which portions of the tongue were apt to be twisted up. In order to effectually remove a diseased portion of tongue with the écraseur, it is necessary to isolate the growth by pushing well beyond it curved needles set in handles, around which the wire of the écraseur may be passed, and thus be kept in its proper position. Without this precaution, the wire as it is tightened is certain to encroach upon the disease, and lead to an incomplete operation, and no forceps is sufficient alone to obviate the occurrence.

The galvanic écraseur, used in the same way, has the advantage of cutting more readily through the tissues, which it sears at the same time, thus preventing all hæmorrhage at the moment. It has, however, the drawback, that the separation of the slough necessarily formed by the cautery is very apt to lead to secondary hæmorrhage some days after the operation, and hence its use has been abandoned by many surgeons who formerly employed the galvanic écraseur.

Paquelin's thermo-cautery is a very convenient instrument for removing small portions of the tongue, since it is not necessary in using it to pass pins beyond the growth. It is liable, however, to the same drawback as the galvanic cautery, of secondary hæmorrhage.

Removal of one-half of the tongue is an operation yielding satisfactory results, and comparatively easy of performance. It was recommended by Dr. Buchanan of Glasgow, who, however, divided the symphysis menti, a complication which is unnecessary in the majority of cases, as shown by Mr. Marrant Baker (*Lancet*, 1880, vol. 1). A thread being passed through each side of the tip of the tongue, and the mouth gagged, the operator divides the frænum lingue and subjacent muscles with curved scissors, which he runs along the floor of the mouth on the diseased side so as to divide the mucous membrane near the jaw, as far back as the disease reaches. Taking one thread in his left hand, and the other being held by an assistant, the operator then, with a blunt-pointed straight bistoury, divides the tongue strictly in the median plane, being particularly careful to divide the tough corium of the dorsal aspect well beyond the disease. Any bleeding vessel on the surface of the section is easily seen and secured, and with the forefinger the operator then tears through any remaining muscular tissue of the tongue or sublingual tissues, so as to isolate the half of the tongue to be removed. The wire loop of the écraseur can then be easily slipped over the apex of the tongue to the base, through which, if necessary, needles may be inserted, and the diseased half of the organ can be removed as far back as may be necessary.

Should the disease be so extensive as to require removal down to the hyoid bone, it may be necessary to resort to the plan suggested by the late Mr. Collis of Dublin, viz., to lay open the cheek by a horizontal incision carried from the angle of the mouth. This would, of course, bring the parts more thoroughly into view, but with the drawback of increased hæmorrhage and permanent deformity. By employing an écraseur with the end slightly curved, I have, however, been able, in several cases in which I have removed half the tongue, to dispense with any external incision.

Removal of the whole breadth of the tongue may be readily performed with the écraseur, when the disease involves only the anterior portion of the organ; but, when it extends further back, free division of the sublingual tissues, as recommended by Sir James Paget, will be necessary, in order to allow the satisfactory application of the wire loop to the base of the organ. Mr. Baker has recommended that, in cases of entire removal, the tongue should be split, and the two halves be removed by écraseurs simultaneously; and the two methods are, for all practical purposes, identical.

Nunneley's method of applying the écraseur for removal of the entire

tongue is as follows. An incision is made in the median line between the chin and the hyoid bone, and is carried up between the genio-hyo-glossi muscles into the mouth; and the chain of an écraseur is carried through this. The base of the tongue being thus transfixed from above downwards by three pins, the chain is passed behind them, and the écraseur is worked from beneath the chin. The objection to this method is, that the tongue is necessarily cut obliquely, notwithstanding the use of the pins. Its advantage is, that a useful drain for discharges is maintained from the floor of the mouth.

Mr. Barwell (*Lancet*, April 19th, 1879) has modified Nunneley's method by making a small suprahyoid wound, and carrying a thread into the mouth, by means of a handled needle, much farther back than in the older method. The needle is made to enter the mouth close to the last molar tooth on each side, and the wire of the écraseur is drawn by the thread through the suprahyoid wound and round the base of the tongue. A handled needle is then passed from before backwards through the tongue at the point where the section is to be made, and the wire slipped behind it. When the tongue has been divided vertically, a second écraseur is applied horizontally in the mouth, to divide the sublingual tissues which have been left. Mr. Barwell claims for this method that it leaves a painless stump, because the lingual-gustatory nerves are divided close to the lower jaw; but this result is not peculiar to this particular operation, which does not appear to possess any special advantages over that of division of the sublingual tissues before the section of the tongue; whilst, if hæmorrhage should occur on completion of the section of the tongue, the organ itself would be very much in the way of the application of a ligature.

Mr. Barwell has introduced into practice a form of wire for the écraseur, which promises to be very serviceable. It consists of a strand of Newall's patent wire-rope, made of untempered steel, with a thread in its centre, and is more flexible than any steel wire.

Regnoli, in 1838, devised a submental operation, by dividing the floor of the mouth close to the lower jaw from one facial artery to the other, so as to allow the tongue to be drawn down and fully exposed. It may then be removed with the knife or écraseur; but, if the knife be employed, care should be taken to divide only one lingual artery at a time. I have assisted in the performance of this operation more than once; and I think that for slight cases it is an unnecessarily severe proceeding, and has no advantage over the intrabuccal method; while for the more serious cases, in which it is necessary to go close to the hyoid bone, it has the drawback that the surgeon is working in a hole, where it is very difficult to see and secure a bleeding artery.

Sédillot and Syme were the first to divide the lower jaw in order more thoroughly to extirpate the tongue. The operation is a very severe one, but affords the only satisfactory method of dealing with cases of extensive disease of the tongue, in which the floor of the mouth is involved.

An incision in the median line of the lower lip, prolonged to the hyoid bone, will allow of the dissection of the lip from the lower jaw for about a quarter of an inch on each side. With a drill, the bone can then be perforated on each side of the median line, and about midway in the depth of the jaw, so as to admit of the two halves being subsequently drawn together with wire. The jaw is then to be divided exactly in the median line with a fine saw, which may advantageously have its handle raised above the level of the blade, so as to be out of the way of the patient's chest. The advantage of dividing the bone in the median line is, that the teeth are not interfered with; whereas, in Sédillot's method of dividing the jaw by a > cut, it is necessary to sacrifice all the incisor teeth. In addition to the wire employed to bind the halves of the jaw together, the action of the muscles tends to maintain the parts in relation, and to press the halves of the jaw together, rendering the notching of the bone an unnecessary complication. If the vertical section be completed with the bone-forceps when about half the thickness of the bone has been divided with the saw, the slight irregularity thus produced assists also in maintaining the parts in apposition. The halves of the jaw being held asunder with hooks, the operator cuts the genio-hyo-glossi muscles from the jaw with a pair of scissors, leaving the attachments of the genio-hyoid muscles. With the forefinger and scissors, the tongue can then be dissected up from the floor of the mouth with the sublingual glands and mucous membrane until the hyoid bone is reached; firm traction being made with a stout string passed through the tip. The tongue being then drawn down, the palato-glossi muscles forming the anterior pillars of the fauces will be put on the stretch, and must be divided with scissors, after which a handled needle should be passed through the tongue close to the hyoid bone, around which the wire of the écraseur should be passed.

The surgeon should be prepared with a handled needle and stout thread to transfix and hold the small remnant of tissue left attached

to the hyoid bone, should the breathing be embarrassed by the epiglottis and base of the tongue falling back. In my experience, this is much more likely to happen when a considerable portion of the tongue is left, than when the section is made far back; and the difficulty seems to arise from the weight of the piece left forcing back the epiglottis when the sublingual muscles have been divided.

All hæmorrhage having been checked, the two halves of the jaw are to be brought together with a piece of stout silver wire. This may be passed from before backwards readily enough through the hole in one side of the jaw; but it is not easy to pass it back again on the opposite side, unless a loop of thin wire be passed from before backwards through the hole already made, into which the end of the wire can be bent, and thus drawn forward. The two halves of the jaw should be brought into close and correct apposition, and the ends of the wire twisted and brought up beneath the lip. The lip is then to be brought together with hare-lip pins and a fine silk stitch in the mucous membrane; but care should be taken to leave the lower part of the incision open, so that there may be a free drain for the saliva and discharges from the mouth. In removing the wire from the jaw at the end of three weeks or more, it will be found convenient to cut the wire close to the jaw on each side, and then with a blunt hook to pull out the loop from behind.

When the disease involves the anterior part of the tongue, it is by no means uncommon to find the organ adherent to the incisive portion of the jaw, and the bone more or less infiltrated, as shown by the loosening of the teeth and softening of the bone. Under these circumstances, it is necessary, after clearing the bone, to apply the saw on each side of the diseased portion as far from the median line as may be necessary to reach healthy bone. After removal of the portion of bone with the diseased tongue, it is quite useless to attempt to wire the remaining portions of jaw together, since it is impracticable to draw them into apposition at the time. And yet it will be found in a few weeks that, as the wound heals, the two sides of the jaw are gradually approximated by the action of the muscles, and will eventually, in many cases, unite firmly. (For cases, see *Lancet*, 1876, vol. 1.)

In all operations for removal of the tongue, it is well to be prepared for unexpected hæmorrhage, which may be very urgent. Blood collecting in the pharynx may embarrass the breathing very much, and, by the congestion produced, may keep up venous bleeding. Under these circumstances, it is well to perform laryngotomy at once; and, if blood have entered the lungs, as is very apt to happen when the tongue is dragged forward, to suck out the blood through the tube. I have twice seen patients rescued from imminent danger of suffocation in this way, ultimately making good recoveries.

With the view of obviating all risk of suffocation during the operation, and also to facilitate the administration of the anæsthetic, recourse may be had, before commencing the operation of removal of the tongue, to laryngotomy or tracheotomy and the use of Trendelenburg's tampon. This consists of an India-rubber tube covering the tracheal cannula, which can be inflated so as to plug the trachea and prevent the admission of blood; but an equally satisfactory method is to plug the pharynx with a sponge, to which a string should be attached. A flexible tube attached to the ordinary tracheal cannula allows the ready administration of chloroform-vapour. I have employed the method on one occasion, and have seen it employed on others; but it appears in most cases to be an unnecessary complication.

The after-treatment of cases of removal of the half or entire tongue consists in maintaining the strength of the patient by judicious feeding, and in keeping the mouth sweet. Feeding is best accomplished with the ordinary earthenware feeder, having a spout to which an India-rubber tube may be fitted, if it be necessary to carry the food very far back. In this way, sufficient milk, beef-tea, and brandy may be administered until the patient prefers to take nourishment from a cup, which he does often earlier than might be expected. Should the feeding by the mouth be insufficient, recourse should be had to nutrient enemata.

With regard to cleanliness and prevention of fætor, it is very desirable that, at the time of the operation, all divided tissues should be thoroughly mopped with a forty-grain solution of chloride of zinc, which not only obviates fætor, but tends powerfully to prevent the absorption of septic matter.

The frequent washing out of the mouth with a lotion of permanganate of potash or lime (the latter by preference) is most readily accomplished with a syphon-douche fitted with a soft India-rubber nipple, which the patient can direct himself, without risk of hurting the mouth. After each washing, the mouth should be brushed out with the glycerine of carbolic acid or "terebene", either of which answers admirably in preventing fætor.

It has been suggested that the lobular pneumonia which occasion-

ally proves fatal in some cases of removal of the tongue, is due to septic influence consequent upon the state of the mouth. The cases which die occur, however, among elderly patients, who have become greatly reduced by the disease, and who would be likely, under any circumstances, to suffer from lung-complications of a low type. With the view of obviating this supposed septic influence, my colleague Mr. Arthur Barker (*Lancet*, August 1879) has in a few cases allowed the patient to wear a tracheotomy-tube for some days, and to breathe only through it; the mouth and nostrils being carefully covered with cotton-wool, and a drain for saliva established through the floor of the mouth.

In cases of recurrence, after removal of the tongue for epithelioma, the disease shows itself in the stump, or the submaxillary lymphatic glands; or more frequently, I think, in both. The infiltration of the glands occasionally spreads to those beneath the sterno-mastoid, should the patient survive sufficiently long; but death usually supervenes, after a few months, from general asthenia and exhaustion, the sufferer being worn out with pain, and by the constant discharge, should the submaxillary lymphatic glands suppurate and discharge externally, as they frequently do. In cases where recovery is permanent, and the patient remains well for years, one is almost tempted to suspect a mistaken diagnosis; and it must be acknowledged that mistakes have been made by good surgeons in removing tongues, the subject of gumma, for examples of epithelioma. I am able, however, to record survival for over twelve years, in a patient from whom I removed what was believed to be a tongue affected by medullary cancer. The patient was sixty years of age, and the disease had existed six months. On looking into the mouth, there was, between the tongue and the lower jaw, on the left side, a ragged ulcerated surface occupying the floor of the mouth. This was prolonged to the side of the tongue, and, with the finger, a large mass could be felt in the substance of the organ, extending beyond the median line and to about two inches from the tip. The patient complained of constant pain in the tongue, but was otherwise in good health. There was a slight enlargement of one of the submaxillary lymphatic glands. After section of the lower jaw in the median line, I removed, with the *écraseur*, the anterior half of the tongue in September 1868. The patient made a good but slow recovery, and called on me in 1880, nearly twelve years after the operation, perfectly well. The part removed was exhibited to the Pathological Society of London, and was submitted to the Committee on Morbid Growths. To the naked eye, the tumour presented the appearance of medullary cancer, and was reported by the Committee to consist of cells and nuclei. The conclusion drawn was as follows. "The opinion we formed is, that the tumour was essentially a cell-growth invading and displacing the normal tissues, the cell-growth forming equally the more obvious cell-structure of the tumour and its fibrous portion. We may add, that it seemed to us most probable that the larger forms of cells were developed out of the smaller forms, and that therefore the spongy portion of the tumour, in which the larger cells were most abundant, represented a later phase of development than the homologous portion" (*Pathological Society's Transactions*, vol. xx). In this case, I noticed particularly a point which is not often seen, viz., the extent to which the portion of tongue left behind grows or becomes stretched, notwithstanding the extensive removal, the man, some years afterwards, appeared to have a normally sized tongue, but rather more sessile in the mouth than usual.

When recurrence of cancer takes place, the case is generally beyond surgical aid, the disease infiltrating the tissues of the mouth and of the neck to an extent which usually forbids any interference. It seems to me, however, that occasionally an attempt should be made to rescue the sufferer from an early and miserable death, as in the following instance.

A man, aged 62, was sent to me, in 1875, with very extensive cancerous disease of the tongue and sublingual tissues. In January 1874, he noticed a swelling of one of the submaxillary glands, and soon after a sore beneath the tongue. The sore healed, and the gland subsided under treatment. In September 1874, the gland began again to swell, and at last broke. At the same time, he found that he had difficulty in articulating, as the tongue was fixed to the floor of the mouth, and, eventually, the tip of the tongue became fixed to the jaw. This last was temporarily relieved by an operation at another hospital. On admission to University College Hospital, the patient was unable to protrude his tongue or move it in his mouth; the saliva constantly trickled away, and articulation was very imperfect. He complained of great pain in the occipital region, but of none in the tongue. The gums of the incisor region were swollen and ulcerated, and the teeth loose. The tongue was fixed to the back of the incisive portion of the jaw, which was softened. All the tissues beneath the tongue were indurated, but the skin was not involved.

On September 29th, I removed the tongue, the centre of the jaw, and all

the sublingual tissues, by dividing the skin in the middle line, then sawing the jaw through on each side, and, having isolated the tongue somewhat on each side, by enclosing the whole of the disease with the wire of the galvanic écreuseur. The parts removed consisted of the middle three inches of the lower jaw, nearly the whole of the tongue, and the sublingual muscles and glands *en masse*. At the posterior end, the mass measured two and a half inches in depth, and slightly more from side to side. The tongue appeared to be healthy, except at the anterior part; and on the left side, just behind the tip, was a nodule of the size of a pea. Beneath the tongue was a mass of a yellowish white firm tissue, with a granular surface, which was continued quite up to the cut margin. This tissue, on microscopical examination, proved to be epithelioma.

The patient made a good recovery, and was alive and well two years after the operation. He recovered a surprising amount of power of deglutition and speech, due principally to the growth of the stump of the tongue already noticed. The occipital pain complained of by the patient is difficult of explanation, but was entirely relieved by the operation. I have noticed it in other cases of cancer of the tongue (*Lancet*, 1876, vol. i).

My friend and former pupil, Mr. Rushton Parker, of Liverpool, has recorded (*Medical Times and Gazette*, December 1st, 1877) two cases in which he performed almost as extensive operations as in the foregoing case. In one patient, aged 58, he removed, in 1876, half the tongue, parts of the upper and lower jaws, the submaxillary glands, and a portion of the pharynx, for extensive epithelioma, the patient recovering, and being perfectly well in 1880. In the other patient, aged 54, he removed one-half of the tongue, half the soft palate, the side of the pharynx, the submaxillary glands, and part of the lower jaw for epithelioma; but, unfortunately, a recurrence of the disease took place in the neck.

CLINICAL LECTURE

ON A

CASE OF CÆSAREAN HYSTERO-OÖPHORECTOMY, OR PORRO'S OPERATION; WITH REMARKS.

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OBJECT OF THE OPERATION.—Porro was led up to his bold proposal by a consideration of the conditions under which the Cæsaean section had been so frequently fatal. In his own city, for example, no woman who had ever been subjected to the operation had survived. It seemed to him that the chief source of danger lay in the wounded uterus. This was sometimes the source of a fatal hemorrhage. In whatever way the lips of the incision might be brought together at the moment of operation, they were liable, in the changing moods of the puerperal uterus, to become separated. There might take place an escape of blood, not immediately dangerous in amount, but dangerous from its liability to escape into the peritoneal cavity, where it sometimes set up fatal peritonitis. The usual puerperal secretions from the inner surface of the uterus were liable to escape into the abdomen. The tendency to peritonitis was further increased by the chance of septic matters passing up along the genital canal and through the gap in the uterine walls. All these risks were likely to be lessened, if not entirely removed, by the removal of the injured organ. The wound-surface of the stump would not be so great as that of the necessary incision through the uterine parietes; and the stump would be amenable to the means of controlling hæmorrhage that have given good results in the removal of ovarian and uterine tumours through an opening made in the walls of the abdomen. Fortified by such considerations, and by the results of experiments on the lower animals, which showed that more recoveries took place when the wounded gravid uterus was removed than when it was left after the fœtuses had been extracted by Cæsaean section, Porro carried out his idea successfully in the woman who was thus the first in Pavia to survive a Cæsaean labour.

The removal of the ovaries is a necessary complement to the removal of the uterus. The loop that encircles the neck of the uterus has the ovaries within its embrace; and they are cut off with the uterus, instead of being left adherent to the stump. If they were left, and retained their vitality, the return of their functional activity might easily give rise to periodical troubles in a patient to whom they were no longer of any physiological value.

It is no drawback, but rather an advantage attaching to this procedure, that it annuls the further reproductive powers of such patients as are fitting subjects for its employment. For the most part, they are delicate, deformed, diseased, without the power to rear and care for more than a single child. The cases are few, where a woman who has to be delivered by a Cæsaean operation will be anxious to multiply her children.

As experience has grown in connection with Cæsaean hysterectomy, further advantages have been found to attend it. In cases of malacosteon, for example, which furnish a notable contingent of the women operated on, the patients who survive have been seen in one or two instances to recover distinctly from their disease. After any other kind of delivery, cases of malacosteon usually become worse; and the successful result of these Porro's operations has raised the question whether double oöphorectomy should not be had recourse to as a curative measure in other cases also.

Again, we are not obliged to wait the onset of labour, or to use means to start it, as in the ordinary Cæsaean operation we are compelled to do. The chances for the child are thus greatly improved; and, as it sets us free to choose our time for operating, we put the mother also in a more favourable position for success.

Such being the nature of the Porro procedure, it is easy to see what are the

INDICATIONS FOR THE OPERATION.—It will be applicable to all the cases where Cæsaean section is called for. British obstetricians have always been very shy of this grave operation. Indeed, but for the faithful advocacy of Hull* and Radford,† it ran some risk of being ranked among the condemned operations. Little wonder, when we see, from Dr. Radford's table of 132 cases, that only 23 women, or 17.42 per cent., survived the process. Less wonder, if in Scotland the operation was rarer still; for, of the 18 women tabulated by Dr. Radford as having been subjected to the Cæsaean section, not a solitary individual survived. Sir James Simpson used to refer in his lectures to one successful case as having occurred in Scotland; which had, however, not been registered in any scientific table. It was performed under unpromising circumstances, by a rude operator, and with a rude instrument; for the operator was a cow in the Queen's Park, and the instrument her horn. But the high mortality in Britain may be read the other way; and G. A. Michaelis‡ and other continental writers have read for us the lesson, which a recent discussion in the Dublin Obstetrical Society on an interesting paper by Dr. Kinkad§ leads me to think we shall soon effectually learn for ourselves, that the high mortality is largely due to our very timidity; for often the performance of the operation was delayed until various other means of delivery had been attempted, and was only had recourse to as a *dernier ressort* when the woman's chances of recovery had already been thrown away. The table of the Porro's operations which I have given above shows a mortality to the mothers of 58.3 per cent., whilst the lives of 79 per cent. of the children were saved. If the mortality still seems high, it should be remembered that, whereas many fatal cases of the classical Cæsaean operation never saw the light, all the Porro's operations have been tabulated, whether favourable or unfavourable; and in a considerable proportion of them the child was already dead, and the mother in a hopeless condition before she was subjected to the operation. But, if the statistics improve, as they are likely to do when the conditions of success come to be more clearly understood, then I do not doubt that the supplementing of the Cæsaean operation with the utero-ovarian amputation will help markedly to widen the field of its application. We need not always be tied down only to operate where the pelvis measures less than two inches in the conjugate diameter of the brim; but in the case of women with a pelvis somewhat roomier, yet still so narrow as to call for the sacrifice of child after child, we shall be warranted in giving them the satisfaction of seeing a living infant by an operation which they have a distinct chance of surviving. The indications for the operative interference have not in all cases been recorded; but the following table shows the conditions which have called for the operation

* *Defence of the Casarean Operation*. Manchester: 1799.

† *Observations on the Casarean Section, Craniotomy, and on other Obstetric Operations*. Second Edition. London: Churchill, 1880.

‡ *Abhandlungen aus der Geburtshülfe*, p. 131. Kiel: 1833.

§ *Dublin Medical Journal*. Vol. lxi, p. 445. 1850.