OBSERVATIONS ON SUBMAXILLARY CANCER AND ITS TREATMENT.

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DURING the past eight years I have chanced to meet with an unusual number of cases of cancerous disease in the submaxillary region, and have found a plan of treating them so successful that I think it worthy of the attention of operating surgeons.

THE SUBMAXILLARY LYMPHATIC GLANDS.

Cancer of the tongue or lips, if laterally situated, usually spreads to the absorbent gland that lies in the submaxillary region, imbedded in the submaxillary salivary gland, about an inch and a quarter in front of the angle of the jaw, and of an inch below the base. (See Fig. 2A.) In this situation recurrence of cancer is also usual after it has been removed by operation from the lips or tongue. (Central cancer of the lip generally extends to, or recurs in, the sublingual glands, just behind the symphysis of the jaw, but this condition does not belong to the class of cases here dealt with.) The appearance of the disease in the submaxillary region shows itself by a fulness, due to an egg-shaped tumour, increasing in size from that of a small hazel nut to that of a plum. It is at first movable, and its mobility and shape can best be made out by the surgeon putting the thumb of his hand which belongs to the opposite side from the disease down into the floor of the patient's mouth between tongue and jaw, and the fingers of that hand externally over the submaxillary region, when by this double palpation the condition can be accurately made out.

As the disease progresses the gland enlarges in all directions, but chiefly upwards towards the base of the jaw, which it approaches so closely that by the time it has reached the size of a large cherry it is so intimately connected with the jaw that, though it may be movable upon it, it cannot be completely removed by operation unless a piece of the jaw be taken too. The gland speedily becomes adherent, and the disease then invades the jaw, eroding and extending into it, and this may occur even where independent mobility of the two structures seems present to a certain degree. The progress of the disease in the gland is not a very rapid one, and the mischief remains for many months isolated there, presenting, if properly dealt with, a condition favourable to a complete removal and permanent cure. Eventually, however, it extends backwards, and appears next in the glands over the carotids, just in front of the sterno-mastoid, and vertically below the angle of the jaw. When it reaches this situation operation is very seldom successful in curing the disease.

In the face and neck, as in other situations, cancerous disease almost always spares the lymphatic vessels by which it is conducted from its superficial site of origin into the nearest absorbent glands; and it is so rarely that the absorbents passing between the lip margin and the submaxillary gland are involved that they may practically be neglected in treating submaxillary cancer by operation.

The removal of such disease in the submaxillary glands by dissection is an operation of great difficulty, and almost always imperfect, so that recurrence is speedily seen. Scraping out is still more certain to end in failure. The results I have witnessed in my own practice and that of other surgeons from these proceedings have been highly unsatisfactory, and usually the disease has seemed rather to be accelerated than retarded by them.

METHOD OF OPERATING.

The following method of operative removal has yielded me results that are greatly superior. It may either be used, as I shall describe it, where the removal of the local focus on lip

or tongue has already yielded a local cure, or it may be conjoined with the removal of the local disease where it still exists.

After shaving the chin and cheek, administering an anæsthetic, and completing the ordinary preliminaries, an assistant, standing behind the patient and fixing his head, compresses the facial artery in the usual manner against the base of the jaw. The operator carries a scalpel incision downwards from the angle of the mouth to the base of the jaw (Fig. 1B), dividing all the soft parts down to the bone. This incision lies anterior to the disease in the gland. From its lower extremity a second incision is carried backwards to the angle of the jaw (Fig. 1C) parallel to and just above its base, dividing again all the soft parts, including the facial artery, down to the bone, above the compressing finger of the assistant. This incision lies above the disease. The thumb or forefinger of the operator's left hand is now placed in the mouth, and lifts the soft parts of the cheeks outwards, while the scalpel, carried close to the jaw, severs them from the bone as far back as its angle, so as to leave the outer surface of its body bare.

In the somewhat rare event of the disease having originated on the inner surface of the cheek, it can at this stage be freely dissected off the inner surface of this cheek flap. The arteries are then tied or secured by forceps.

At this stage the patient usually requires a fresh administration of the anæsthetic, which has been suspended since the first incision was commenced.

Exploration between the thumb inside and the index finger below the jaw now enables the operator to gauge the extent of the disease and the distance to which its connection with the jaw extends backwards and forwards. Corresponding with this an incision is now made completely through the jaw well in front of the disease by an amputation saw, which works better and more quickly than any other. The incision is usually vertical, as shown at D, Fig. 2, and falls about the

Fig. 1.

situation of the first or second bicuspid, which may be extracted before the saw is applied. The incision may sometimes be advantageously directed somewhat obliquely downwards and forwards, so as to save more of the alveolar edge, and the teeth, if present, may be extracted from its line. It is not, however, absolutely necessary to extract the teeth, and frequently it seems better to leave them, as what remains of them heals in and may be of service. A second incision through the jaw is next similarly sawn well behind the disease. Its general form is that shown at *B*, Fig. 2, and severs the body from the ramus by an oblique cut. But its precise situation will vary according to the extent of the disease. The inferior dental artery generally gives no trouble, but if it bleeds from the inferior dental canal it is most easily controlled by inserting into the bony canal the end of a wooden lucifer match trimmed to a point by a scalpel and dipped in oil of turpentine to disinfect it, the projecting part being cut off flush with the surface of the bone. This securing of the artery may be done either now or later.

Usually a fresh administration of chloroform is required at this period, and during its administration the skin flap may be replaced over a small sponge which is held compressed by it against the jaw so as to control bleeding.

The next stage of the operation consists in dissecting down the loose part of the jaw along with the disease and the parts lying over the digastric triangle, severing them from the side of the tongue, the digastricus, mylohyoid, and hyoglossus muscles. If the side of the tongue be involved, its disease is removed in a mass along with them.

It may be remarked that, as the disease in the submaxillary gland has usually not extended to the skin, it is not necessary to make any cutaneous incisions below the level of the base of the jaw. But if the disease should have involved the skin, a couple of converging incisions, such as those marked by the dotted lines in Fig. 1, *F F*, may now be made in it by a scalpel or sharp-pointed scissors, care being taken to keep well free of the limits of the disease; or a vertical incision may, in every case, be made downwards from *c*, if required for space or drainage.

The most advantageous way to separate the disease from the side of the tongue and the digastric triangle is the following: The loose portion of the jaw, marked *a*, is seized by the left hand and doubled downwards, exposing the floor of the mouth. The mucous membrane covering this is divided by a sharp-pointed scissors from the one point of section of the jaw to the other. The left hand, grasping the jaw and embracing the disease so as to recognise its limits by the feel, now draws these outwards and doubles them down towards the neck, while the scissors severs the soft parts between them and the tongue and hyoid bone. While cutting in this manner the facial artery is divided, but so tense are the parts that it does not usually bleed, but appears as a gaping tube, and is secured in a Péan's forceps. It is well, however, to have a stout pile or other forceps ready to seize it in case of its giving rise to troublesome hæmorrhage. There is usually

little or no hæmorrhage in this part of the operation, but if any occur, the bleeding points are temporarily seized by Péan's forceps and subsequently tied. The scissors cuts soon free the jaw and diseased parts so that they can be drawn more away from the tongue, and the remaining attachments to the skin, etc., are cut through in the same way until the disease and jaw come away together in the operator's left hand. The Péan's forceps are next taken up and the points secured by them tied with strong antiseptic silk.

If the part removed be now washed and examined it will be seen whether the whole of the disease has been removed, and if this prove not to have been the case the portion left can be easily dissected off, so free is the access obtained in this operation. More of the jaw may also be sawn off if required.

The wound is closed by passing harelip sutures through its vertical portion, *B*, and the anterior and posterior ends of its horizontal part may be secured by continuous catgut suture. The middle is best left open for drainage, and gives egress to the end of a strip of iodoform gauze, which is packed between tongue and skin to serve as a capillary drain and prevent the fætor that otherwise occurs in mouth operations. The gauze is drawn out on the second day or later.

RESULTS.

From the first the patient can swallow liquid nourishment, and soon takes it freely, though some of it escapes at the drainage aperture. The divided ends of the jaw soon fall together, and the cavity of the wound shrinks and cicatrises rapidly. The chin falls a little to the operated side, but the resulting deformity is slight and not very noticeable. The recovery is usually rapid.

In this manner I have operated upon 29 cases, the earliest having been performed on November 13th, 1884. Only one case died: the others all recovered, and were dismissed apparently cured. Owing to the difficulty of tracing hospital patients I am unable to say in how many of these the disease subsequently reappeared, but I believe a large proportion have remained permanently cured.

I have heard of recurrence in, I think, 5 only, although it is almost certain that more than this number have not been permanently cured.

The good results seem to be attributable to the free drainage and the accessibility of the wound, which lessens the immediate mortality, and to the completeness with which the disease can be removed, which diminishes the chances of its recurrence.

DR. FLETCHER BEACH, for seventeen years medical superintendent of the Clapton and Darent Schools for Imbecile Children of the Metropolitan Asylums Board, has resigned. It is understood that he proposes to enter consulting practice, and to establish a home for backward, feeble-minded, and epileptic children of the upper classes, matters in which Dr. Beach has a large experience and a well-earned reputation.

Fig. 2.