The special point of interest in this case seems to centre upon the membranous expansion of the great omentum, which was attached to the descending colon. The history of an early injury was almost too indefinite to count as a cause. The extremely regular line of attachment seemed almost to suggest a congenital condition.

Considering the symptoms of these two cases together, it seems as if the pain from which each suffered owed its origin more particularly to the dragging effects produced by the adhesions, which interfered with normal peristaltic action. In both the calibre of the canal was undiminished, so that there was no real cause for obstruction; but, supposing the solid contents of the colon were to some extent inhibited in their progress, the increased peristaltic action thereby evoked, with the consequent additional dragging of the adhesions, would still be sufficient to explain the pain.

SOME OPERATIONS FOR REMOVAL OF MALIGNANT GROWTHS FROM THE NASO-PHARYNX.*

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THE surgeon who opens an exhaustive work on operative surgery, and refers to the section on the naso-pharynx and pharynx, becomes lost in a maze of complicated operations, and finds it difficult to select a procedure for any particular case. Many of the operations described are never performed, but are copied from book to book. Other operations for the removal of malignant growths of the naso-pharynx are attended with the great disadvantage that the whole, or the important alveolar portion of the superior maxilla is necessarily sacrificed, although in many cases the operation should really in the first stage be an exploratory one. For it must often happen that a malignant disease of the naso-pharynx when fully exposed proves to be irremovable. It would be tedious, and of little profit, to mention and enter into a detailed criticism of the various procedures indicated. I will therefore at once describe certain operations which were worked out by myself, and which I believe present features of novelty.

On two occasions I have carried out a method of osteoplastic resection of the upper jaw which completely preserves the integrity of the jaw, and at the same time admits of the fullest exposure of the naso-pharynx and upper and back part of the nose. A ligature is placed on the external carotid artery and laryngotomy is performed. An incision resembling Velpeau's is made (Fig. 1, *a*), and

Fig. 1.—*a*, Writer's operation; *b*, Langenbeck's operation.

Fig. 2.—*a*, Writer's operation; *b*, Langenbeck's operation.

extends from the angle of the mouth to the lower margin of the malar bone at a point corresponding to the anterior edge of the masseter. The parotid duct is then sought for, traced forward, and separated at its entrance into the mouth by a circular incision through the mucous membrane around its orifice, and is then turned back. The malar bone is divided by introducing a Gigli saw through the spheno-maxillary fissure. (See Fig. 2, *a*.) This is done by passing an aneurysm needle loaded with silk through the upper angle of the incision, above the orbital margin, and then

downwards through the fissure so that it protrudes below the malar bone. The silk is caught, and by its means the saw is drawn through the fissure. The muco-periosteum of the hard palate having been divided in the median line the hard palate and alveolus are also severed by a Gigli saw, which has been drawn through from the mouth by an aneurysm needle passed along the inferior meatus and through a puncture at the junction of the hard and soft palates. The soft palate is severed from the hard, from the middle line as far as the posterior margin of the alveolus. A broad and blunt chisel is then driven horizontally between the tuberosity of the upper jaw and the pterygoid processes. By pressing the handle backwards the upper jaw is levered out of its bed and turned upwards and forwards. As the skin incision is only carried as high as the lower level of the malar bone, the fibres of the facial nerve going to the orbicularis oculi are not divided. After removal of the growth the maxilla is replaced and the severed edges of the malar bone united by a wire suture. A piece of thin silver wire may also be passed round the incisor teeth on each side of the incision through the alveolar process anteriorly. The incision between the hard and soft palates and the two halves of muco-periosteum of the hard palate are sutured. The end of the parotid duct is thrust into the mouth and secured in position by a point of catgut suture. Finally the skin incision is closed.

I performed this operation first in October, 1904, on a gentleman aged 48, who was sent to me by Mr. Mark Hovell. During the four previous years he had had polypi removed from the left nostril. There was a growth springing from the roof of the naso-pharynx and involving the posterior end of the vomer; the left nostril was blocked with growth, inspissated pus and one small polypus. A portion of the growth from the naso-pharynx, removed for microscopic examination, proved to be a small round-celled or lympho-sarcoma. After preliminary ligature of the external carotid artery and laryngotomy, the muco-periosteum of the upper jaw was incised along the inner sides of the teeth on the left side and reflected towards the middle line, as it seemed not improbable that the upper jaw would have to be sacrificed. The steps of the operation were then carried out as above detailed. The growth was found to involve the roof of the naso-pharynx, the base of the vomer and the posterior part of the floor of the left inferior meatus. At the end of the operation the patient was suffering profoundly from shock, and in spite of intravenous injection of saline and other remedies usually employed, died about three hours after. The next opportunity for performing this operation did not occur until October of last year and was completely successful.

Edward W., aged 15, was admitted to hospital in January, 1906, complaining of blockage of the left nostril and purulent discharge from it of four months' duration. The naso-pharynx was filled with a firm adherent mass, which projected into the back of the left inferior meatus, so that it could be seen from the anterior meatus. The soft palate was depressed, the nose broadened, and the cheek swollen. I proposed to excise the left maxilla and remove the growth. On February 9th I proceeded to tie the left external carotid, but found so many enlarged glands that I thought the case not sufficiently hopeful to warrant me in persevering. I, however, put a ligature on the external carotid with a view of checking the growth of the tumour, and removed the glands.

The patient was readmitted to hospital on September 26th for severe haemorrhage from the nose, which threatened his life. The growth had so much diminished in size that I thought it would be justifiable to attempt its removal. A preliminary laryngotomy was performed. Then the upper jaw was turned forward in the manner above described. The tumour was found to spring from the back part of the naso-pharynx opposite the atlas and axis, and from the basi-sphenoid. Its base was firmly adherent, and it projected forward as a tongue-shaped mass into the left inferior meatus. A rounded mass an inch in diameter occupied the sphenoidal sinus. The tuberosity of the superior maxilla was also invaded. The growth was removed freely without haemorrhage, and the thermo-cautery was applied to the seat of origin. The tuberosity of the superior maxilla was cut away with bone forceps. The upper jaw was then replaced. The later stages of the operation had to be hurried, as the patient was suffering extremely from shock. He made a good recovery, and the jaw is now in good position and quite firmly fixed. (Patient shown.) The power of closing the eye is not impaired, there is no diplopia, and no parotid fistula. I examined his naso-pharynx at the end of January, and found no recurrence. Microscopically the growth was a fibro-sarcoma.

* Read at the Medical Society, February 25th, 1907.

Those who saw this operation expressed surprise at the very free access given to the naso-pharynx and back part and roof of the nose. The extreme shock attending these operations was probably largely contributed to by removal of structures from the base of the skull.

Its obvious disadvantages are, in the first place, that the scar is on the cheek, although it is not a long one; secondly, that some fibres of the facial nerve going to the lower part of the face and angle of the mouth are divided; but these must be put against the alternative of excision of the upper jaw. Lastly, there is some difficulty in dealing with the parotid duct.

Since writing the above, I have carried out on the cadaver an operation of osteoplastic resection of the maxilla which has none of these disadvantages. The operation is much the same as for removal of the maxilla in the ordinary way. The vertical or Fergusson's incision is employed, the horizontal limb being carried as far outwards as the spheno-maxillary fissure. The level of this incision at its outer extremity should not be higher than $\frac{1}{4}$ in. above the lower margin of the malar bone, or the fibres of the facial nerve to the orbicularis may be divided. The malar bone and the hard palate are divided with a Gigli saw as in the first operation described, and the nasal process with bone forceps. The soft palate is severed from the hard; finally the mouth is opened, and a chisel is driven vertically upwards between the tuberosity of the jaw and the pterygoid processes. With an elevator passed between the cut surfaces of the hard palate, the maxilla is forced outwards and turned outwards on the hinge formed by the soft parts of the cheek. After removal of the growth the maxilla is replaced, and a style passed down the lacrymal duct to preserve its continuity. No important structure has been damaged.

It may be noted that in both the above operations the orbital plate is not severed from the body of the bone, but the periosteum is carefully raised from the floor of the orbit. I have found that the maxilla can be turned more cleanly from its bed if the continuity of the orbital plate is undisturbed. The external carotid artery having been tied in both my cases, there was very little haemorrhage. The first method of osteoplastic resection of the maxilla gives, if anything, the freest exposure of the naso-pharynx.

For extensive malignant growths of the naso-pharynx many procedures have been adopted. Cheyne recommends removal of the upper jaw, the floor of the orbit and the muco-periosteum of the hard palate being preserved. This of course gives plenty of room, but involves the loss of the maxilla. Annandale divides the alveolar process and palatal portions of the upper jaw along the median line from before backwards, severs the bony septum, and then forces the two maxillae asunder. This operation gives so little space that it is quite useless for the removal of any extensive growth. Langenbeck introduced a method of osteoplastic resection of the upper jaw by making two horizontal cuts through the bone. The lower cut passes horizontally through the upper jaw above the alveolar process; the upper cut passes through the frontal process of the malar bone as far as the spheno-maxilla fissure, and then on through the orbital plate and nasal process. The zygoma is also divided (see Fig. 2, *b*, *b*, *b*). The skin incision, in the form of a flap with its base towards the nose, corresponds with the osseous incision (see Fig. 1, *a*). By means of an elevator inserted under the malar bone the portion of the upper jaw outlined by the saw cuts is turned forwards towards the middle line, and, after removal of the growth, replaced. This method gives access only to the upper part of the naso-pharynx by a small window, is difficult to perform, and the scar very unsightly.

I consider Nélaton's operation a good procedure for the removal of limited growths on the roof of the naso-pharynx, and performed it in the following case: A gentleman, aged 45, was seen by Mr. Mark Hovell for deafness. A large mass of tissue was found in the upper part of the naso-pharynx which on microscopic examination proved to be a lympho-sarcoma. Preliminary laryngotomy having been done, the soft palate and the posterior half of the hard palate were split along the middle line, the latter reflected from the bone, and a longitudinal opening was made through the posterior half of the bony palate with chisel and bone-cutting forceps. The growth could then be well seen with the head lamp. It was freely removed

with scissors and punch forceps. Its base and the surrounding tissues were destroyed with the thermo-cautery. The edges of the hard and soft palates were then united by sutures. The operation was performed in June, 1905, and the patient is now free from recurrence.

Such operations as Chalot's and Guérin's, also Kocher's method of temporary resection of the whole alveolar arch, may be relegated to the obscurity of the past.

[Mr. Eve then made some observations on removal of malignant disease of the tonsil. He favoured excision by an external incision in all but the earliest cases, otherwise infected tissue between the tonsil and the glands was not removed. He had excised the tonsil for epithelioma 6 times, with 1 death—4 times by Mikulicz's method and once through the mouth by splitting the cheek; on the last occasion he had carried Mikulicz's incision well forwards beneath the jaw, and found that a free exposure of the pharynx could be obtained by this means without resecting the vertical ramus. The latter procedure was sometimes followed by difficulty in opening the jaw, although it was claimed by some writers that resection of the ramus prevented this sequel. For some years he had performed preliminary laryngotomy, ligature of the external carotid, and removal of the lymphatic glands as a necessary part of all procedures for removal of malignant growths of the regions under consideration. During the last two or three years he had removed the tonsil or soft palate or both together for extensive malignant disease, after preliminary laryngotomy and ligature of the external carotid, in 6 cases with 1 death.]

TRYPSIN IN CANCER: A PRELIMINARY STATEMENT.

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HUXLEY has aptly said, "The man of science has learned to believe in justification, not by faith, but by verification." Until such time as verification is complete, the scientific attitude must ever be that of "suspended judgement." "Prove all things, hold fast that which is good," is the tentative watchword of every seeker after truth in whatsoever department of human endeavour he may be labouring. Over-enthusiasm and premature conclusions have always been a menace to scientific investigation, bringing in their wake as much harm, at times, as wilful misrepresentation; the pitiable part of it all being that it reacts upon the unfortunate ones whose sufferings it is our earnest aim to prevent or to alleviate.

The world to-day is watching, with keener interest than ever before, the warfare that is being waged against malignant disease. Thousands of cancer victims are listening with bated breath for the slightest word of hope of amelioration or cure by other means than surgery. How many times in the past, alas, have they been disappointed—the new agent apparently so full of hope has proved a mirage! Despite these many disappointments each new remedy which seems to offer reasonable hope of benefit, without doing harm, should, in suitable inoperable cases, be tried by those who are competent in this field of research. Whatever laboratory experimentation may be necessary in the development of a given method of treatment, in its last analysis the new remedy must be applied to the human being for the final test of its efficacy. In the treatment of cancer ample opportunity is afforded for such test with cases which are no longer amenable to surgical interference; but it should always be borne in mind that between the starting-point, "no evidence," and the hoped-for goal, "a cure," there may be many way-stations of usefulness.

For some months the pancreatic enzymes in the treatment of cancer have engaged the attention of the medical press, and both here and abroad systematic efforts are being made to determine whether the so-called trypsin treatment shall rest at the initial stage of the journey, be advanced to some one of the way-stations, or be carried in triumph to the final oft-promised land of cure. Dr. Beard, the originator of the method, has made it plain that it is his great desire to have his treatment thoroughly tested, along the exact lines which he himself has laid down, and that he is willing to abide by the consequences.