

Based on the above report by Dr. Jaches, the speaker said he had made the statement at the last meeting that even pylorotomy was not absolutely certain to produce pyloric occlusion. In order to verify this, he had again sent for the patient and had again had him flouroscooped, and also had plates made. Dr. Jaches reported as follows: On January 27, 1913, this patient was submitted to another X-ray examination, because at the examination made ten days previously the main reliance was placed on the flouroscope, and the few plates which were taken did not show the passage of the bismuth-zoolak through the pylorus. At the second flouroscopic examination, the passage was again noticed; it did not show up as clearly as the first time, but a number of plates were taken and most of these showed the passage of the bismuth. Plate 1, which was taken about half an hour after the ingestion of the bismuth, showed the food passing through the stoma, and a considerable quantity already in the coils of the small intestine, and it also showed some bismuth in the duodenum (probably the second portion), also passing downwards. Plate 2 and plate 3, taken a few minutes later, showed practically the same conditions. Plate 4, taken one hour before, again showed the bismuth in part of the duodenum. Plate 5, taken an hour and three-quarters after the ingestion of the meal, again showed bismuth passing through the pylorus.

Dr. Moschcowitz said he had not had the time to look up the literature on the subject, but he had a distinct recollection of having read of similar occurrences in experiments on animals. At the last meeting, Dr. Charles A. Elsberg had related similar personal experiences with animals.

*Stated Meeting, held at the New York Academy of Medicine,
February 26, 1913.*

The President, DR. CHARLES L. GIBSON, in the Chair.

PERFORATING DUODENAL ULCER.

DR. NATHAN W. GREEN presented a man, thirty-seven years old, who gave a history of intermittent gastric trouble dating back for three or four months. When he was admitted to St. Luke's Hospital, on November 11, 1912, he complained of pain

in the lower right side which had come on suddenly about eight hours before. Examination showed a point of tenderness an inch above and to the right of the umbilicus.

Through a right rectus incision a perforating ulcer of the first part of the duodenum was found, together with peritonitis of the right gut. The lesion was inverted, and this interfered with the lumen of the gut to such an extent that a gastro-enterostomy was done immediately. The patient made an uninterrupted recovery. This case gave the typical history of hunger pains coming on 3 or 4 hours after eating and being relieved by food.

Dr. Green presented a second case of perforating duodenal ulcer in the person of a man who gave the history of having had pain, fairly well localized above the umbilicus, for about two months before his admission to St. Luke's Hospital, on January 27, 1913. Five hours before he was admitted he had a sudden sharp pain in the lower abdomen, and he was brought to the hospital late at night with the diagnosis of appendicitis. The appendix was explored and found to be normal. The presence of a thin, brownish fluid was noticed in the right hypogastric region, and upon exploration with the hand in the abdomen, a perforating, punched-out ulcer was found. Through a right rectus incision this proved to be located in the duodenum. It was inverted as in the previous case, and a gastro-enterostomy was at once performed and the wound closed. The abdominal wound reopened on the ninth day due to lack of general nutrition, when it required resuturing. The patient's further recovery was uneventful.

This case presented no hunger pains, but gave a history of pain one hour after eating and relieved by vomiting. This and the punched-out appearance would make one think of gastric ulcer, but as the location was to the right of the hepatic artery and portal vein (boundary of foramen of Winslow) it was considered a duodenal ulcer. The finer landmarks were obscured by old adhesions.

DR. WILLIAM A. DOWNES thought Dr. Green had acted wisely in doing an immediate gastro-enterostomy after closing the duodenal perforation. The speaker said he could recall two cases where a secondary gastro-enterostomy became necessary, one two years, the other three or four years after the primary opera-

tion. He saw no reason why a gastro-enterostomy should not be done at once, if the condition of the patient warranted the prolonged operation, and these cases are usually in good condition if they come under observation within a few hours after the perforation occurs.

DR. CHARLES L. GIBSON said that personally he had never done a gastro-enterostomy in a case of perforating gastric or duodenal ulcer, and he had never had occasion to regret it. He thought it should only be done in exceptional cases, where there was evident obstruction. In one case which he operated on recently he found two acute perforating ulcers of the duodenum, which he closed by infolding them with a purse-string suture; although this procedure caused a slight stenosis of the pylorus he did not do a gastro-enterostomy. In that case, although the patient made a good recovery, a subsequent gastro-enterostomy might become necessary, but personally he was rather inclined to resist the present-day tendency to do a gastro-enterostomy in these cases as a routine procedure.

SEPTIC SECONDARY HEMORRHAGES SUBSEQUENT TO AMPUTATION OF THE BREAST FOR CARCINOMA.

DR. ALEXIS V. MOSCHCOWITZ presented a woman, thirty-eight years old, who was admitted to Mt. Sinai Hospital, in the service of Dr. Gerster, on November 11, 1912, suffering from a tumor of the left breast. She had first noticed this growth about two months before, and during that period it had increased very rapidly in size. The salient points of the physical examination of the patient were that practically the entire left breast was involved; that the tumor was very hard, and that there were massive glands in the corresponding axilla. A notable feature of the case was that though the integument covering the breast was very much thinned, the result of stretching, it was not adherent and evidently not involved.

On November 13 a typical amputation of the breast and axillary contents was done, together with extirpation of both pectoral muscles. The operation was exceedingly easy, and including the suturing and dressing, consumed less than fifty minutes. In connection with the operation it was of importance to note that in spite of the very extensive removal of the skin,

the remainder was readily approximated without the slightest tension.

The first dressing was on November 16, merely with the object of removing the axillary drainage tube. At this time there was already noticed a very suspicious cyanosis of the skin flaps, as of an impending necrosis. After this the patient complained of considerable pain and discomfort in the region of the wound. She had an evening rise of temperature to 102.5, but there was never more of a purulent discharge than could be accounted for by the rather extensive sloughing of the skin flaps, which had actually occurred. At no time was there any actual sloughing of the deeper tissues. The upper part of the incision healed by primary union.

On November 24, the eleventh post-operative day, the dressings were found to be saturated with blood, and examination showed that the wound was covered with a soft blood clot, about five inches in diameter and half an inch thick. When this was gently lifted off, there were exposed two bleeding areas, each about half an inch in diameter, one situated just below the clavicle; the other near the inferior angle of the incision. A purse-string suture encircling these points controlled the bleeding completely for the time being. The general condition of the patient was poor. The pulse was rapid and weak, but regular, and there were no signs of marked loss of blood.

On the following day a similar hemorrhage occurred from a point situated about the centre of the granulating area. The next day there was no bleeding, but as a prophylactic measure, 15 c.c. of human serum were injected subcutaneously. On November 27, the fourteenth post-operative day, there was again very active bleeding, approximately from the same areas which had been sutured three days before. This time the bleeding was checked by firm tamponade with gauze, dipped into a mixture of adrenalin and diphtheria antitoxin. The patient's hæmoglobin content dropped to 40 per cent., and the coagulation time was found to be ten minutes. The general condition of the patient was now very poor: she refused all nourishment, was very weak, and the outlook seemed well-nigh hopeless. There were, however, no further hemorrhages until December 1, the eighteenth post-operative day. Again there was a cessation of all bleeding until December 4, when on exposing the wound there was found

an actively spurting vessel in the fourth intercostal space (perforating artery), about half an inch external to the border of the sternum. This was caught with forceps and ligated.

On the following day the patient was removed to the outdoor ward, which was situated on the roof, and almost miraculously her condition began to improve, her temperature dropped to normal, and no further hemorrhage occurred. By the middle of January her wound was in a condition to permit of skin grafting, and the patient was discharged, practically well, on February 18, 1913.

TOTAL LARYNGECTOMY FOR EPITHELIOMA OF THE LARYNX.

DR. WILLIAM DOWNES presented a man, sixty years old, upon whom he had operated January 27, 1913, on account of epithelioma of the larynx, the symptoms of which dated back about two months. The larynx was freely movable and there was no general lymphatic involvement, but on the right side of the interior of the larynx, the place normally occupied by the ventricular band (or false vocal cord) was taken by a red, cylindrical swelling with a slight constriction near the arytenoid. Outside the arytenoid and the aryteno-epiglottic fold was an ulcerated area that bled easily. The vocal cord was not visible, as the swelling in the region of the false vocal cord extended so far inward as to shut off a view of the cord.

Total laryngectomy was performed by Dr. Downes on January 27, 1913. An incision was made from the hyoid to within a short distance of the suprasternal notch, with liberating cuts on either side just below the hyoid. The larynx was freed anteriorly, and the trachea exposed and divided at the first ring. The trachea was then brought forward through a transverse skin incision just above the sternal notch, this incision being separated from the lower end of the original incision by a bridge of tissue one inch wide. The ether, which had been given with open mask up to this time, was now administered through an intratracheal cannula with the Janeway insufflation apparatus, and the anæsthesia was at all times smooth.

The larynx was dissected from the œsophagus from below upward, and when it was found that the growth involved the

pyriform fossa and the false cord of the right side, a very large opening was necessarily made in the pharynx in order to get wide of the disease. The epiglottis was included with the larynx. The large opening in the pharynx was closed with fine chromic gut with much difficulty. Wide gauze packing saturated with a one per cent. iodine solution was placed well down in the lower angles of the wound on either side of the trachea with the object of setting up inflammatory adhesions and thereby preventing infection from spreading in this direction. A small drain was inserted into the upper end of the wound, and the skin partially closed. A No. 24 French catheter was introduced through the left nostril well into the œsophagus for feeding purposes. By the use of the suction apparatus with a small mouth tip, the pharynx was kept free from saliva almost from the start, the patient soon learning to use this means of clearing his throat. Dr. Downes said he felt confident that the use of this apparatus aided greatly in obtaining primary union in the large pharyngeal wound. The gauze pack was removed from the lower part of the wound on the fourth day, and the walling off was apparently complete, as there was no tendency for secretions to burrow into the mediastinum. The feeding tube was kept in the nose for two weeks: after this all feeding was by the mouth, the food for a few days consisting of liquids only, soon followed by semi-solids. At no time was there any leakage from the pharyngeal wound.

The patient's temperature was 101° the day after the operation, and never above 100° after the fifth day. The speaker said he attributed this uneventful convalescence to the fact that infection did not spread to the mediastinum, showing the value of the gauze pack. He also believed that he was assisted in obtaining complete primary union in so large a pharyngeal wound by the use of the sucker, which kept the pharynx free from saliva and mucus. At the present time the wound had healed, with the exception of a very small granulating area at the upper angle.

Examination of the specimen after removal showed an ulcerated surface of about one square inch in the pyriform fossa. The hard nodular growth had extended to the arytenoid and the false cord, but did not involve the true cord. The growth evidently began in the pyriform fossa or sinus, and was therefore extrinsic. Pathologically, it proved to be an epithelioma.

TOTAL LARYNGECTOMY FOR CANCER OF THE LARYNX.

DR. FREDERICK KAMMERER presented a man now about fifty-five years old, upon whom Dr. Kammerer did a total laryngectomy for intrinsic cancer of the larynx over four years ago. The patient was first presented to the Society on March 10, 1909, six months after the operation, and he had shown no evidence of a recurrence up to the present time.

At the operation, a tumor, as large as a walnut, involving mainly the left vocal cord, was found. There was no involvement of the lymphatics in the neck. A preliminary tracheotomy had to be done four weeks before the laryngectomy on account of respiratory obstruction.

Dr. Kammerer also briefly mentioned two other cases of laryngectomy for extrinsic cancer upon which he had operated during the past two years. In one of these cases he removed the larynx, over five inches of the pharynx and œsophagus, and the left half of the thyroid gland. This patient had a fatal recurrence one year later. In the second case, operated on almost a year ago, where a considerable portion of the pharynx was removed and a plastic operation had been successfully done to re-establish the continuity of the digestive tract, a recurrence immediately above the tracheal opening was now present. Such cases of early recurrence after very extensive laryngectomies were rather discouraging, and, in conjunction with the case presented to-night, emphasized the well known fact of the more benign nature of those cases in which the growth originated in the interior of the larynx.

Dr. GIBSON said that Dr. Downes's method of preventing the spread of infection by gauze packing saturated in a one per cent. iodine solution and placed well down in the lower angles of the wound on either side of the trachea had impressed him very favorably, even more so than that suggested by Dr. Crile, who advised a preliminary operation with this same object in view.

SARCOMA OF THE LEFT SUPERIOR MAXILLA:
EXTIRPATION.

DR. HOWARD LILIENTHAL presented a woman, twenty years old, who was admitted to the Mt. Sinai Hospital on December 5, 1912. She had been married about fifteen months, and had a

young baby. Nine months ago she first noticed a growth in the left cheek, which had been slowly increasing in size. This had never been painful.

On examination, there was a large, hard swelling over the left superior maxilla and involving the bone itself. There was bulging of the outer wall of the left nostril, and through the mouth the superior maxillary bone was found to be enlarged in the region of the first and second molars; this enlargement extended into the nose and was plainly seen by the X-ray as a dense shadow of apparently thickened bone, extending to the orbit. An examination of the blood gave 12,000 leucocytes, with 68 per cent. of polymorphonuclears. The urine was negative. The temperature ranged between 99 and 100; pulse, 84; respirations, 20.

On December 9, 1912, under ether intratracheal anæsthesia, the left common carotid was exposed by an incision in the neck, parallel with and in front of the left sternomastoid muscle. Dr. Lilienthal said it was his intention to extirpate the left external carotid artery, but the division of the vessel must have been very high and could not easily be found, so after about fifteen minutes a temporary ligature was placed about the common carotid and the wound was left open. The right external carotid artery was then extirpated without difficulty, the bifurcation being found in its normal situation. This wound was now closed by suture, with temporary tube drainage. Attention was now directed to the attack upon the tumor itself, and during this part of the operation the left common carotid was drawn upon by a ligature in the hands of an assistant to produce temporary hæmostasis. An incision was made along the superior maxilla above the line of the alveolar process, and upon removing the mucous membrane by blunt dissection it was found that the tumor involved the bone, which was softened and gave the characteristic crackling sound. The growth evidently extended from within the nose to the orbital margin, and as far back as the first molar, while below its limits were marked by the second bicuspid. In order to gain a better access to the growth, Dr. Lilienthal said he adopted a method suggested by Dr. T. Passmore Berens: namely, he incised the upper lip vertically at its central point and continued the incision through the lip to the ala of the nose and along the floor of the nasal cavity. With

the chisel the entire tumor was now removed with ease, and on examining the specimen, every portion of it appeared to have been extirpated with the exception of the inner part, adjacent to the nasal septum. Here some of the soft tissue of the tumor was seen to have been cut cleanly through by the chisel. This was dark and apparently melanotic in appearance, and was easily shelled out with the curette. The entire wound, including the left nostril, was now packed with gauze, and the ligature embracing the common carotid was loosened. This was immediately followed by severe hemorrhage from numerous vessels, so that it was deemed advisable to ligate and divide the carotid. The wound in the left side of the neck was then closed with suture, with temporary tube drainage, and the wound in the lip was sutured.

The patient made an uneventful recovery from the operation, but upon examination, on December 23, it was found that a small, hard fragment of bony tumor was still present adjacent to the nasal bone. This had since disappeared under the regular administration of Coley's mixed toxins of the bacillus erysipelas and prodigiosus.

Pathologically, the growth in this case was pronounced a spindle-celled osteo-sarcoma, especially malignant.

Dr. Lilienthal said he had made use of Coley's fluid for many years, and he believed that as a result he had had fewer recurrences after operation. This was only the second case, however, where he had seen it apparently produce an absolute disappearance of what was undoubtedly a fragment of a malignant growth. In the other case which he had in mind the patient was a man who was operated on about twelve years ago for what was pronounced to be a pigmented giant-celled sarcoma of the rib. A very large section of the pleura was removed, but the extirpation was necessarily incomplete. There was an immediate recurrence in the scar, and it was not until then that the administration of Coley's fluid was begun. Its use was followed by a disappearance of the malignant growth, and the patient still remained well, now twelve years after the operation.

DR. F. S. MANDLEBAUM said that in dealing with sarcoma of the bones, one must make a sharp distinction between the spindle-celled and the giant-celled types. The latter was not a true sarcoma, and the sooner it was taken out of the class of sar-

comata, the better, as it was not a malignant tumor at all. That point was brought out in a discussion on the subject before this society about eight years ago. A case had been presented in which he had made the diagnosis of giant-celled sarcoma of the femur, and on account of the subsequent course of the case, the correctness of that diagnosis was questioned, and at that time he made the statement that a giant-celled sarcoma was not a malignant tumor at all. Since then, several pathologists have made similar statements.

In the second case mentioned by Dr. Lilienthal, the tumor was a giant-celled sarcoma, and the speaker said he was not surprised to learn that the patient was still alive, in spite of the fact that a complete extirpation had been found impossible.

In the case shown by Dr. Lilienthal to-night, the speaker said that to the best of his recollection, the pathological picture was that of a spindle-celled osteo-sarcoma, which was usually of a rather malignant type and offered an unfavorable prognosis.

DR. ARPAD G. GERSTER said the preliminary ligation of arteries in operations on the superior maxilla seemed to have become a fixed procedure under the belief that it added to the safety of the operation. Two or three weeks ago, Dr. Gerster said, he ligated the external carotid before the removal of a tumor in the posterior pharynx which was attached to one of the wings of the pterygoid. Previous to that, he had never resorted to a preliminary ligation of the vessels in the neck in operations of this kind, and in this single instance, forty-eight hours after the operation, the patient had a cerebral embolism and died.

Personally, Dr. Gerster said, he failed to see the benefit of such a preliminary ligation. After the surgeon had made his preparatory incision and divided the bony attachments, and removed the detached jaw, the wound could be plugged and the hemorrhage well controlled, and the internal maxillary artery could be caught and tied. After the extirpation of the growth was completed, we had a visible cavity from which the bleeding could be well controlled. He did not think that a preliminary ligation of the external carotid was necessary, and that it simply added to the dangers of an already serious operation.

DR. WALTON MARTIN said that two weeks ago he saw a case of carcinoma of the upper jaw which necessitated an extensive

resection, but in spite of the fact that no preliminary ligation was done, the hemorrhage was not very alarming. He could recall other cases where he had not tied the vessels in the neck and had never had serious bleeding. If we limited the ligation to one side of the neck, the anastomosis was often so free that it would have little effect upon the hemorrhage. He thought it was better to tie the vessels as they were cut.

DR. L. W. HOTCHKISS said he had seen many of these operations on the upper jaw, and had had considerable personal experience with them. Dr. McBurney and Dr. Hartley and most of the other men with whom he had been associated had never resorted to a preliminary ligation of the external carotid. In the case shown by Dr. Lilienthal the ligation, as he understood it, was done for the purpose of starving the growth, thus aiding in the prevention of a recurrence, rather than to check hemorrhage.

DR. MOSCHCOWITZ said he had operated on the superior maxilla, both with and without a preliminary ligation of the vessels in the neck, and he had come to the conclusion that such a procedure was a snare and a delusion. A year ago last summer he extirpated both superior maxillæ for a malignant growth. He did a preliminary ligation of the external carotid on one side, and intended to do the same on the opposite side. The artery, supposed to be the external carotid, was partially exposed and ligated. The operation was then completed without incident. The patient died three days later, and at the post-mortem it was found that on one side the common carotid had been tied, probably giving rise to a degenerative process in the brain.

Dr. Moschcowitz said he mentioned this instance, as he understood that Dr. Lilienthal had tied the common carotid in his case.

DR. F. KAMMERER did not think that preliminary ligation of the external carotid on the affected side controlled hemorrhage during resection of the superior maxilla; the procedure was, furthermore, unnecessary where so large an opening was made to expose the seat of the disease, and where the individual vessels could be so easily caught and ligated. However, he considered ligation of both external carotids a valuable preliminary procedure in extended operations on the nasal and oral cavities; as, for instance, in Kocher's temporary resection of

both superior maxillæ, where the only incision made was a vertical one through the upper lip, and the bleeding was not as easily controlled as in the more open operation of resection of the superior maxilla.

DR. CHAS. L. GIBSON said that some years ago, preliminary to attacking a tumor in the nasopharynx, he extirpated the external carotid on one side and tied it on the other. In spite of these precautions, he had a very alarming hemorrhage during the course of the operation.

DR. LILIENTHAL, in closing, said the operative procedure which he had followed in this case, which he believed to be a good one and which he had successfully carried out in other cases, was to extirpate both external carotids, as suggested by Dawbarn. The artery on the right side was extirpated without any trouble, but the left external carotid was situated so high up that it could not be reached. He thereupon ligated the left common carotid, which he had done in former cases without injurious results. In one case, a patient with a pulsating exophthalmus, supposed to be due to an aneurism of the cavernous sinus, he had ligated both common carotids within ten days of each other: that patient survived for several years, and finally died from hemorrhage after another operation upon the neck for the ligation of anastomatic arteries.

ON THE FORMATION OF BONE IN THE HUMAN PENIS.

DR. ARPAD G. GERSTER read a paper with the above title, for which see page 896.

DR. MANDLEBAUM said the formation of bone in fibrous connective tissue was not purely a pathological process, but occurred physiologically as well, on the roof and sides of the skull. Most of the bones of the face were also formed in this manner. When bone formation took place in fibrous connective tissue, the first step in the process was the change or transformation of the normal connective-tissue cells into osteoblasts; this was a process of metaplasia, in which the connective-tissue cells lost their identity and were practically transformed into new cells. The intracellular substance became transformed into osteoid tissue. The final stage was the deposit of lime salts, and we then had true bone.

This new bone formation in various tissues of the body was

not very rare. Bone had been found in various organs and tissues, including the dura and pia mater, in the scleroid and choroid, in the tonsils, in the thyroid, the lung and pleura and other serous membranes. It had also been found in the endocardium, the stomach, the liver, the kidneys, the adrenals, the ovaries, the Fallopian tubes, the urinary bladder, the testicles, the arteries, muscles, lymph nodes, and the skin. In the case reported by Dr. Gerster the formation of bone in an organ like the penis interfered with the function of that organ: in other locations its presence was merely an incident. Personally, Dr. Mandlebaum said, he had found abnormal deposits of bone in a number of cases, half a dozen or more, once in the liver and a few months ago in a small fibroma which was removed from a woman's thigh.