cial cases more space is gained by splitting the lower flap in the center down to the upper border of the sternum. The sterno-hyoid and thyroid muscles can at times be retracted sufficiently to deliver the tumor or portion of the gland to be removed; but if they add any difficulties to the operation we have no hesitation in cutting a part or all of them and reuniting them by suture during the later steps of the operation. There is often some difficulty in determining which is the true capsule, and the incision can be deepened into the tumor until gland tissue or tumor tissue is exposed; the hemorrhage is inconsiderable if the larger vessels are avoided. Inspection of the tumor after its free exposure will indicate the best method of procedure in the operative technic of its removal. If the capsule is thick and nearly the whole gland has disappeared into one rounded mass, we prefer the enucleation method of Socin, as in case of cysts they can be evacuated and the cyst wall removed, and if adenomas or large colloid cysts it is possible that enough gland material will be left to functionate should it be necessary to remove the whole mass. If, as is more often the case, the tumor on exposure retains the general normal contour of the gland, we extirpate one lobe, usually the right, after the method of Kocher. In case of retrosternal enlargements it is delivered with this lobe if possible. The veins leaving the true capsule laterally are divided and the upper horn dislocated sufficiently to double ligate the superior thyroid artery and vein. The tumor is further dislocated and freed from below with dry gauze dissection until the inferior thyroid artery and veins can be ligated. The isthmus is now crushed with large forceps and ligated or closed by sutures after severing the tumor. If there is any difficulty in raising the lobe from the trachea and region of the recurrent laryngeal nerve, the capsule is incised under the lateral border and allowed to remain, the gland being cleansed from its surface. The wound is now closed by a subcuticular suture, and usually free drainage is employed by separate incision or by the vertical median incision above the sternum.

Exophthalmic goiters are extirpated in the same manner, using greater care in avoiding undue force or compression of the gland in its removal. Our usual rule is to give a hypodermic injection of one-sixth to one-fourth grain of morphia about twenty minutes before operation, as it quiets the general nervousness and aids anesthesia. Unless there is extreme dyspnea or extremely marked exophthalmic symptoms we prefer the drop method of ether anesthesia. In such cases we employ the cutaneous injection of cocain. This method is also used if we lack confidence in the anesthetist. The after-results have been perfect in colloid and adenomatous goiters, with the exception of one case of permanent hoarseness, and a few with this feature lasting but a short time. In operating for malignant disease we found the usual rule to hold good, that the operations were delayed, difficult, palliation short and mortality high.

The exophthalmic cases which recovered from the operation were all benefited within a period of three months; about 50 per cent. became free from exophthalmic symptoms within from three to six months following the operation. In 25 per cent. the improvement was continuous during a year. In 25 per cent. the improvement was partial, the exophthalmus being slow to disappear. None were made worse who lived, and those in whom death occurred were the most severe types of Graves' disease, especially presenting tachycardia of

from 130 to 150. Following the operations on the thyroid gland, a condition of acute thyroidism is probable during the first twenty-four to forty-eight hours. To a great extent it depends on the amount of traumatism in the operation. This condition is more noticeable in the exophthalmic cases. It is usually accompanied with from one to four degrees of temperature.

MORE LOCAL AND LESS GENERAL ANESTHESIA IN GYNECOLOGIC OPERATIONS.

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General anesthesia is of great value in diagnosing many intrapelvic and intra-abdominal conditions, especially in girls, nervous women and in those with tense or thick abdominal walls. Ether and chloroform are the drugs most frequently employed for this purpose. During recent years I have to a great extent discarded these, using nitrous oxid gas in preference, except in cases in which it is contraindicated. The great advantages of this anesthetic are its rapidity of action, safety and absence of after-sickness. The gas is administered through a Packard inhaler, air being inhaled with it.

In carrying out operative procedures I use nitrous oxid and ether, except where there is some contraindication, in the majority of cases. I have found the Packard inhaler very suitable for the administration. A mixture of nitrous oxid gas and air is first given, and as unconsciousness is developed, ether vapor is gradually forced into the inhaler by means of a rubber bulb attached to the bottle of ether. The nitrous oxid reservoir is then disconnected and a mixture of air and ether continued.

When chloroform is indicated the same inhaler is employed, air being allowed to enter more freely. When the mask of the inhaler does not fit a patient's face closely, anesthesia may not readily be induced, because an excessive amount of air is inhaled. Under these circumstances it is advisable to administer ether by means of an open-top pasteboard cone containing cotton; chloroform may be given by means of an Esmarch inhaler, the drug being carefully dropped on it from a small bottle.

Every operator should carefully supervise the administration of these anesthetics, allowing no more than is necessary to be used. Unless this be done patients will often be subjected to unnecessarily prolonged or reckless anesthesia. In cases in which surgical procedures are to be carried out in the lithotomy posture previous to abdominal section, it is frequently possible to carry out the former, either without a general anesthetic or by local anesthesia.

This is particularly necessary when the plastic operations may be extensive or there is expected to be prolonged abdominal work. Frequently the latter is more complicated than was suspected, and the patient may require to be subjected to the added risk of prolonged narcosis.

In recent years I have considerably extended the sphere of employment of local anesthesia, even in major operative procedures, in cases in which prolonged general anesthesia is not considered advisable, e. g., old age, kidney, pulmonary and cardiac diseases, marked anemia, chronic wasting diseases and sepsis. I recommend the Schleich infiltration method, solution No. 2 being employed.

In making the solution I am accustomed to prepare it twenty minutes before it is used, adding a little formalin to it to lessen the risk of infection.

Various plastic operations on the cervix, vagina and vulva may thus be carried out. The diseased uterus and adnexa may be extirpated. In performing this operation after infiltration of the fornix vaginae and opening the peritoneal pouches, no further application of the anesthetic may be required in most cases; occasionally, however, when the patient complains it is advisable to infiltrate the broad ligaments before ligating them, since the latter procedure usually causes distress.

In opening the abdomen, the skin may be infiltrated for a distance of four or five inches in the line of the incision to be made. Thereafter, in the majority of cases, I rarely inject any more of the anesthetic solution. Formerly it was my practice to infiltrate the successive layers divided, but I now prefer to make a rapid division of the abdominal wall.

Various operations may be carried out after the abdomen is opened, e. g., removal of diseased tubes and ovaries, shortening of the round ligaments, myomectomy, supravaginal amputation of the uterus, appendectomy, resection of the intestine, etc.

It is important that the patient should be encouraged and cheered by the operator throughout the operation. If a few drops of chloroform be sprinkled from time to time on a mask held over the patient's face a strong suggestive influence is often exerted, the patient believing that she is being deeply anesthetized. Sometimes a patient may become so nervous and excited that her struggles make it impossible to continue the operation until general anesthesia is induced. But even if such a course is pursued, the advantage has been obtained of reducing to a minimum the amount of chloroform or ether which is necessary.

In the last five years I have only once been compelled to have recourse to a general anesthetic, in the case of a very nervous Italian woman. The largest operation I have performed without general anesthesia was an abdominal hysterectomy for the removal of a cystic fibromyoma of the uterus weighing 87 pounds. It was performed in the Presbyterian Hospital, Chicago, Dec. 16, 1902. The abdomen was opened after Schleich infiltration of the skin. After working for an hour, the patient became somewhat restless, and she was allowed to inhale a few drops of chloroform. During the remaining hour and a half this procedure was repeated from time to time, six drams of the drug being used in this way. The patient was conscious throughout the whole operation, and frequently engaged in conversation; no reflexes were abolished.

Recently I have performed vaginal cesarean section in a primipara suffering from severe nephritis, without any general anesthetic. The operation was difficult on account of the undilated condition of the vagina and a hypertrophic elongation of the cervix measuring nearly four inches. The procedure lasted about an hour, and was followed by complete recovery.

In conditions of extreme anemia or sepsis, I am convinced that the abandonment of general anesthesia will greatly diminish the risk to patients. I have thus opened the abdomen in ruptured ectopic gestation where the blood examination showed less than 24 per cent. of hemoglobin. In severe sepsis the tendency to degeneration in cardiac muscle, renal epithelium and other structures should always be remembered as a warning against the use of a general anesthetic.

With regard to the sensibility of the various tissues exposed and handled the following observations have been made:

On dividing the infiltrated portion of the skin no pain is felt if the infiltration has been well carried out. Division of the other tissues of the abdominal wall always causes pain, the parietal peritoneum being usually most sensitive. Suturing or dragging of a portion of the latter is always painful. The separation of adhesions between any structure and the parietes causes pain, except when the adhesions are very slight, whereas the separation of adhesions between viscera or between new growths and viscera very rarely causes distress. The omentum may be ligated, divided or cauterized without pain; when it is pulled downward pain is caused. When the intestines are handled, whether inflamed or normal, no pain is usually produced unless the mesentery be pulled forcibly.

Removal of the vermiform appendix does not usually cause distress. When its mesentery is stretched or when adhesions between it and the parietes are separated the patient usually complains.

Compression of the broad ligaments with forceps or ligature usually causes the patient to complain, as does perforation or division of them. Cauterization, scraping or stitching of the peritoneal surface of the uterus is rarely noticed by the patient, except at the attachment of the round ligaments; she usually complains when the organ is forcibly pulled upward or laterally putting the ligaments on the stretch. Ligation, division or stretching of the round ligaments always causes distress.

The separation of the tubes and ovaries adherent to the wall of the pelvis is always painful, though slight manipulation of these structures when free is apparently painless. When the ovary is firmly squeezed, resected or sutured, some complaint is usually made. Separation of the bladder from the uterus causes little or no distress. Division of the vaginal wall around the cervix in the performance of a hysterectomy always causes some pain. Sponging of the visceral peritoneum with gauze usually causes no distress, whereas the same procedure applied to the parietes causes pain which varies in intensity according to the force applied. The pain felt on the removal of a gauze drain from the abdomen is probably either due to friction against the parietal peritoneum or to traction on a mesentery or the omentum.

Slow flushing of the peritoneal cavity with hot (105 to 108 F.) normal saline solution usually causes slight or no distress. If, however, the abdomen be unduly distended the patient may complain.

My observations made during the last few years are almost entirely in harmony with those recently published by Lennander of Upsala, in an important contribution to our knowledge of the sensibility of the entire abdominal cavity, his chief conclusion being that all pains felt within the abdomen during operations or in disease are to be referred to parts which are innervated by the intercostal lumbar and sacral nerves, i. e., to the diaphragm and abdominal walls, as well as to such organs of which we know with certainty that they are innervated by the nerves in question or are in near relation to them.

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To remove foreign bodies from the ear, dip the end of a camel's hair brush in glue and leave it in position against the body. When dry, after a few hours, pulling on the brush will remove the whole thing.—*Canadian Practitioner*.