REGIONAL ANESTHESIA FOR OPERATIONS ABOUT THE HEAD AND NECK * †

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In this paper the technic used in producing anesthesia for operations about the head and neck is described. Although any or all of these operations can be done under general anesthesia, particular stress will be given to the types of local anesthesia which can be employed successfully for the majority of patients.

Some anesthetists do not use local anesthesia successfully. There usually are two main reasons for the failure. First, the anesthetist may be the type of individual who is entirely unsuited to inducing this type of anesthesia. If the anesthetist is irritable, blunt and lacking in consideration for his patient, the patient is likely to lose confidence in his ability to undergo an operation under local anesthesia (1). Second, the anesthetist can fail to deposit the anesthetic solution at the proper points to produce complete and satisfactory anesthesia for the field of operation. It is extremely important for the anesthetist to have confidence in his own ability and to be able to gain the confidence of every patient who is to undergo an operation under local anesthesia. If this confidence is gained, the patient usually will be in a satisfactory frame of mind to allow the surgeon to proceed with the operation without difficulty. Both the anesthetist and the surgeon must always be calmly at ease; they must be pleasant, cheerful, kind and resourceful, for manifestations of uneasiness, fretfulness and excitability are almost certain to upset the patient to the extent that the anesthesia will be unsatisfactory.

Most operations about the neck can be carried out satisfactorily under local anesthesia. Before describing the methods of producing local anesthesia in this particular region, I shall review briefly the distribution of the sensory nerves to the superficial structures of the neck.

SENSORY INNERVATION OF SUPERFICIAL STRUCTURES OF THE NECK

The cervical plexus is formed from the anterior divisions of the upper four cervical nerves. Each nerve, except the first, divides into an upper and lower branch and the branches unite to form three loops. The plexus is situated opposite the upper four cervical vertebrae in front of the levator scapulae and scalenus medius muscles, and covered

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by the sternocleidomastoid muscle. Branches from the plexus are divided into two groups, the superficial and deep. The superficial branches go to make up the smaller occipital, the great auricular, the cutaneous cervical, and the supraclavicular nerves. The skin of the neck receives its sensory nerve supply from the anterior branches of the second, third and fourth cervical nerves. These branches pass lateralward to emerge posteriorly to the lateral border of the sternocleidomastoid muscle. They then pass anteriorly on top of the muscle and beneath the deep cervical fascia to branch beneath the platysma and supply the skin of the lateral and anterior portions of the neck, the skin behind the auricle and the parotid gland. The lower branches pass down over the clavicle to supply the pectoral region of the chest.

The deep cervical plexus forms internal and external branches. The deep branches consist of several filaments which pass from the loops between the first and second cervical nerves to the vagus, hypoglossal, and sympathetic nerves. The ansa hypoglossi is formed by filaments derived from the second and third cervical nerves, forming a loop with the descending ramus of the hypoglossal nerve. The phrenic nerve contains motor and sensory fibers. It arises chiefly from the fourth cervical nerve but receives a branch from the third and another from the fifth.

ANESTHESIA FOR OPERATIONS ABOUT THE NECK

Operation on the Thyroid Gland.—For operations on the thyroid gland, the skin of the neck and over the mastoid process and the ear are prepared with an antiseptic solution. A skin wheal is raised approximately 1 cm. below the tip of the mastoid process. An 80 mm. needle is passed through the skin wheal and is advanced along the posterior lateral border of the sternocleidomastoid muscle between the muscle and the deep cervical fascia. Fifteen cubic centimeters of 1 per cent. solution of procaine or metycaine (benzoyl-γ-[2 methylpiperidino]-propanol hydrochloride) is deposited along the route taken by the needle. This procedure is then carried out on the opposite side. If the solution has been deposited properly, complete anesthesia should result in all the region innervated by the anterior branches of the superficial cervical nerves. However, the operation will be facilitated if a small amount of weak anesthetic solution, containing a vasoconstrictor, is deposited directly into the operative field. This procedure can be carried out easily by making a skin wheal just above the sternal notch. An 80 mm. needle is then passed through the skin wheal and 40 or 50 cc. of a 0.5 per cent. solution of procaine or metycaine, containing a vasoconstrictor such as epinephrine or cobefrin, is infiltrated throughout the operative region.

General anesthesia is usually satisfactory for operations on the thyroid gland. However, many surgeons prefer not to use general anesthesia for this operation because they are anxious to have the pa-

tient able to answer questions during the surgical procedure to determine any change in the patient's voice, which could indicate damage to the recurrent laryngeal nerve. Inhalation anesthesia for operations on the thyroid gland can be accomplished by using the ordinary face mask. Many anesthetists and surgeons, however, prefer to use an intratracheal tube for this procedure in order to assure the patient a completely unobstructed airway. A combination of basal anesthesia produced by tribromethyl alcohol (avertin) and local anesthesia is satisfactory in many instances.

Other Operations About the Neck.—Anesthesia induced by deep cervical block and field block is satisfactory for laryngectomy, thyrotomy and dissection of the glands of the neck. Deep cervical block can be accomplished easily by placing the patient flat on his back on the operating table and turning the face sharply to the side. The first skin wheal is raised approximately 1 cm. below and 1 cm. posterior to the tip of the mastoid process. A second wheal is raised approximately 1 cm. posterior to the junction of the superficial jugular vein with the posterior border of the sternocleidomastoid muscle. The third wheal is raised halfway between the first and second. Then the anesthetist should palpate the transverse process of the sixth cervical vertebra in order to determine the directions of his needles. An 80 mm. needle is passed through the first skin wheal and is advanced posteriorly and slightly downward until it comes in contact with the transverse process of the second cervical vertebra. Similar procedures are carried out with the second and third needles until the transverse processes of the second, third and fourth cervical vertebrae have been located. Ten cubic centimeters of a 1 per cent. solution of procaine or metycaine, containing a vasoconstrictor, is deposited through each of the needles. The field of operation should then be infiltrated with a 0.5 per cent. solution of the anesthetic. If the patient has much discomfort during the operation, a small amount of sodium ethyl (1-methyl butyl) thiobarbituric acid (pentothal sodium), given intravenously by the intermittent method (Lundy and Tovell (2)), will quiet him satisfactorily. Intratracheal anesthesia is also satisfactory for dissection of the glands of the neck.

Tumors of the parotid gland can be removed under local anesthesia, intravenous anesthesia, or general anesthesia. It is my opinion that this operation can be carried out with greater safety if the patient is asleep and an intratracheal tube is in place to assure an unobstructed airway.

Tonsillectomy.—For tonsillectomy under local anesthesia it is preferable that the pharyngeal reflex be maintained in order to lessen the opportunity for blood or other secretions to enter the trachea. I feel that the base of the tongue and the pharynx should not be painted with a topical anesthetic. For anesthetization of the tonsil, the tongue should be depressed backward and downward. The anesthetic solu-

tion is injected through a needle of small caliber. The first injection is made into the posterior pillar between the capsule of the tonsil and the aponeurosis of the superior constrictor muscles of the pharynx. The injection is made slowly so that infiltration, rather than formation

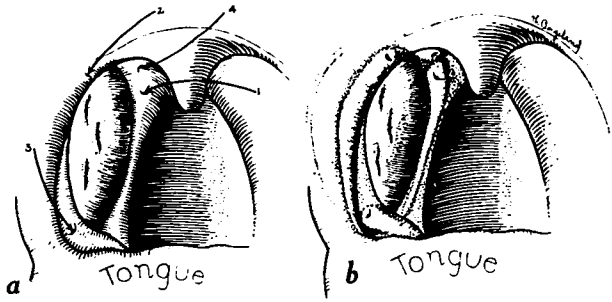

FIG. 1. *a*, Points of injection indicated by numerals 1 to 4; *b*, position and appearance of infiltrate.

of a bleb, will result. The second injection is made in the uppermost part of the anterior pillar; the third in the plica triangularis (Fig. 1). Then the tonsil is grasped with a suitable forceps and is pulled toward the midline. The upper pole comes into view. The needle is inserted

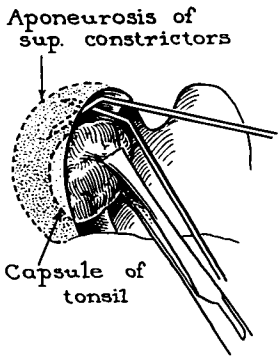

FIG. 2. Injection into the supratonsillar fossa.

into the supratonsillar fossa at the margin of the tonsil and the mucous membrane (fourth injection, Fig. 1). Sufficient solution is deposited at this point to surround the tonsil so that it is somewhat elevated from its fossa by the anesthetic solution (Fig. 2).

ANESTHESIA FOR OPERATIONS ON THE CRANIUM AND BRAIN

Craniotomy can be done under several types of anesthesia. Satisfactory local anesthesia can be produced for this type of operation by a hat-band block and by depositing anesthetic solution deep in the temporal fossa (Fig. 3). The majority of craniotomies at the Mayo Clinic

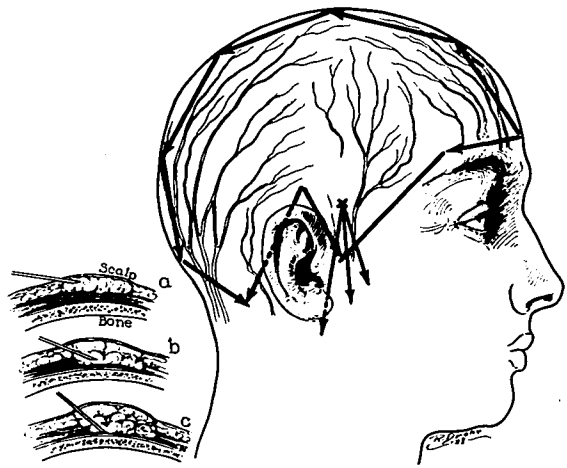

FIG. 3. Hat-band block for craniotomy; *a*, *b*, and *c*, layers of infiltration.

are done under general anesthesia; the agent is administered through an intratracheal tube. It has been found that the intracranial pressure is markedly diminished if an intratracheal tube has been inserted so that the airway is completely unobstructed. It is perhaps well to induce anesthesia with pentothal sodium prior to administration of the general inhalation anesthetic in cases in which the intracranial pressure is increased greatly, and particularly in cases of cerebellar lesions. Occasionally, the increased intracranial pressure caused by the excitement stage of induction by gas and ether will so affect the respiratory center that respiratory paralysis will develop. It is my belief that this condition usually can be avoided by induction of anesthesia with pentothal sodium. It is known that pentothal sodium anesthesia lowers the intracranial pressure in contrast to the elevated pressure which is found during induction (3) of anesthesia with ether.

Rectal anesthesia with tribromethyl alcohol (avertin) is used by some surgeons for operations within the cranium; however, it seems to me that this may be an unwise procedure, for most patients recover very slowly from the effects of this drug. If coma persists for several hours following the operation, it may be impossible for the surgeon to

determine whether this coma is due to the continued and lasting effect of the drug or to a sudden intracranial hemorrhage.

PREMEDICATION FOR OPERATIONS UNDER LOCAL ANESTHESIA

Patients who are to undergo operations on the ears, nose, throat or paranasal sinuses under local anesthesia should receive ample doses of sedatives preoperatively. These patients should be hospitalized the evening before operation. A small dose of sedative should be given each patient the evening before operation; 1½ grains (0.1 Gm.) of pentobarbital sodium will assure most patients a good night's sleep. The following morning additional sedatives should be given so that the patient can be brought to the operating room free from nervousness and excitement. Most patients who are to have tonsillectomy should receive pentobarbital sodium, 1½ grains (0.1 Gm.), one and a half hours before operation, followed by morphine sulfate, ⅙ grain (0.01 Gm.) with atropine sulfate, $\frac{1}{150}$ grain (0.00043 Gm.), a half hour before operation (4, 5).

Most patients who are to have operations on the nose or paranasal sinuses under local anesthesia should receive 3 grains (0.2 Gm.) of pentobarbital sodium one and a half hours before operation and then the usual dose of morphine and atropine.

SENSORY INNERVATION OF NOSE, PARANASAL SINUSES AND ALVEOLI

If satisfactory local anesthesia is to be produced in every case for operations on the nose, paranasal sinuses and alveoli, it is necessary that a thorough knowledge of the anatomic relationships and distribution of nerves in the region be firmly fixed in mind, for the trial and error method of producing anesthesia in this region will cause the anesthetist grief and embarrassment. If anatomic relationships are firmly fixed in the mind of the anesthetist, satisfactory anesthesia can be produced easily for any of these operations.

The sensory innervation of the nose, nasopharynx, paranasal sinuses and palate comes from the fifth cranial nerve. The trigeminal nerve is the largest of the cranial nerves. It is the sensory nerve of the head and face and the motor nerve of the muscles of mastication. The semilunar ganglion lies near the apex of the petrous part of the temporal bone. Three large nerves, namely, the ophthalmic, the maxillary and the mandibular nerves, are given off from the semilunar ganglion. The ophthalmic and maxillary nerves are made up of sensory fibers. The mandibular carries both sensory and motor fibers.

Four small ganglia are associated with the trigeminal nerve. The ciliary ganglion is connected with the ophthalmic nerve, the sphenopalatine ganglion with the maxillary nerve and the otic and submaxillary ganglia are connected with the mandibular nerve. The ophthalmic branch of the trigeminal nerve supplies branches to the iris, the ciliary

body, the cornea, the conjunctiva and the lacrimal gland; it also supplies part of the mucous membrane of the nasal cavity, the skin of the eyelids, eyebrow, forehead and nose. The ophthalmic nerve, before entering the orbit, divides into the nasociliary, lacrimal and frontal branches. The nasociliary nerve enters the orbit through the superior orbital fissure and runs obliquely to the medial wall of the orbital cavity where it passes through the anterior ethmoid foramen. It supplies the anterior portion of the septum and the anterior portion of the lateral walls of the nasal cavity. It then emerges as the external nasal branch between the lower border of the nasal bone and lateral nasal cartilage. It supplies the skin of the ala and the apex of the nose. The nasociliary nerve gives off several branches; namely, the long root of the ciliary ganglion, the long ciliary nerve, the infratrochlear and the ethmoid nerves. The infratrochlear nerve comes off the nasociliary nerve just before it enters the anterior ethmoid foramen; it passes along the medial angle of the eye and supplies the skin of the eyelids and side of the nose, the conjunctiva, the caruncular lacrimalis and lacrimal sac. The ethmoid branches supply the ethmoid cells. The posterior branch of the ethmoid nerve passes through the posterior ethmoid foramen and gives some filaments to the sphenoid sinus.

The frontal nerve enters the orbit through the superior orbital fissure and divides into two branches, the supra-orbital and supratrochlear. The supra-orbital nerve passes through the supra-orbital foramen where it gives off filaments to the upper eyelid. It then ascends to the forehead where it ends in two branches, a medial and a lateral, which supply the integument of the scalp.

The supratrochlear nerve gives off a filament to join the infratrochlear branch of the nasociliary nerve and then passes from the orbit between the obliquus superior muscle and the edge of the supra-orbital foramen. It divides into two branches and supplies the skin of the lower part of the forehead close to the midline. It supplies sensory branches to the conjunctiva and skin of the upper eyelid.

The maxillary nerve leaves the skull through the foramen rotundum. It crosses the pterygopalatine fossa and enters the orbit through the inferior orbital fissure. It traverses the infra-orbital groove beneath the floor of the orbit and appears on the face through the infra-orbital foramen where it divides into branches which extend to the side of the nose, the lower eyelid and the upper lip. Its middle meningeal branch is given off inside the cranium; the zygomatic, sphenopalatine and posterior superior alveolar branches are given off in the pterygopalatine fossa. The anterior superior alveolar and the middle superior alveolar branches are given off in the infra-orbital canal. The external nasal and the superior labial branches are given off on the face.

The branches of the zygomatic nerve supply the skin of the side of the forehead and the prominence of the cheek. The sphenopalatine branches of the maxillary nerve descend to the sphenopalatine ganglion.

The posterior superior alveolar branches descend on the tuberosity of the maxilla and give off branches to the gums and mucous membrane of the cheek. They then enter the posterior alveolar canals to communicate with the middle superior alveolar nerve and give off branches to the membrane lining the maxillary sinus. They also give off branches to each molar tooth. The middle superior alveolar branch runs downward and forward in the lateral wall of the maxillary sinus to supply the premolar teeth; it forms a dental plexus with the anterior and posterior superior alveolar branches. The anterior superior alveolar branch descends on the anterior wall of the maxillary sinus. It supplies the incisor and canine teeth; it communicates with the middle superior alveolar branch to give off a nasal branch which supplies the mucous membrane of the anterior part of the inferior meatus and the floor of the nasal cavity. These branches communicate with the nasal branches from the sphenopalatine ganglion.

The inferior palpebral branches of the maxillary nerve supply the skin and conjunctiva of the lower eyelid. The external nasal branches supply the skin of the side of the nose. The superior labial branches supply the skin of the upper lip, mucous membrane of the mouth and the labial glands.

The sphenopalatine ganglion is located deeply in the pterygopalatine fossa adjacent to the sphenopalatine foramen. It is situated immediately below the maxillary nerve as it crosses the pterygopalatine fossa. It receives sensory, motor and sympathetic roots. The sensory root is made up of two sphenopalatine branches of the maxillary nerve. Most of the fibers pass directly into the palatine nerves; a few, however, enter the ganglion. The motor root is derived from the nervus intermedius through the greater superficial petrosal nerve. This root supposedly consists in part of the sympathetic efferent fibers from the medulla. In the sphenopalatine ganglion they form synapses with neurons whose postganglionic axons, vasodilator and secretory fibers are distributed with the deep branches of the trigeminal nerve to the mucous membrane of the nose, soft palate, tonsils, uvula, roof of the mouth, upper lip, gums and upper part of the pharynx. The orbital branches of the sphenopalatine ganglion are supposed to supply the periosteum of the orbit and the mucous membrane of the posterior ethmoid and sphenoid sinuses. The palatine nerves supply the roof of the mouth, the soft palate, the tonsils and the lining membrane of the nasal cavity by way of the anterior middle and superior palatine branches. The posterior superior nasal branches of the sphenopalatine ganglion supply the posterior two-thirds of the septum and the posterior two-thirds of the lateral wall of the nasal cavity. They enter the nasal cavity through the sphenopalatine foramen. Branches are given off to the lining of the posterior ethmoid cells. The nasopalatine branch passes across the roof of the nasal cavity below the opening of the sphenoid sinuses and runs obliquely downward between the perio-

steum and mucous membrane of the lower part of the septum; it passes through the incisive canal to the roof of the mouth where it communicates with the corresponding nerve of the opposite side and with the anterior palatine nerve. A few terminal branches supply the mucous membrane of the nasal septum.

The pharyngeal nerve arises from the sphenopalatine ganglion, passes through the pharyngeal canal with the pharyngeal branch of the internal maxillary artery and is distributed to the mucous membrane of the nasal portion of the pharynx behind the eustachian tube.

The mandibular nerve, one of the three branches of the trigeminal nerve, supplies the teeth and gums of the mandible, the skin of the temporal region, the auricle, the lower lip, the lower part of the face and the muscles of mastication. It also supplies the mucous membrane of the anterior two-thirds of the tongue. It is made up of both sensory and motor fibers. It leaves the skull through the foramen ovale. Immediately after leaving the foramen ovale the nerve gives off two branches and then divides into two trunks, the anterior and posterior. The posterior division of the mandibular nerve contains for the most part sensory fibers. It divides into the auriculotemporal, lingual and inferior alveolar nerves. The auriculotemporal nerve ascends over the side of the zygoma and divides into the superficial temporal branches. The lingual nerve supplies the mucous membrane of the anterior two-thirds of the tongue. The inferior alveolar nerve descends with the inferior alveolar artery and passes forward in the mandibular canal beneath the teeth as far as the mandibular foramen where it divides into two branches, the incisive and mental (6).

ANESTHESIA FOR OPERATIONS ON NOSE AND PARANASAL SINUSES

Producing anesthesia for operations on the nasal septum or turbinates can be a simple procedure. Each nasal tampon should be dipped first into a solution of 1:1000 epinephrine; excess fluid should be removed by squeezing the tampon between the fingers. The tampon is then dipped into a 10 per cent. solution of cocaine and is again freed of excess solution. The tampon is then placed between the turbinates and the septum and is allowed to remain in this position for about five minutes. Trauma to the mucous membrane should be avoided in order that normal recovery may take place. After the tampons have been removed from the nose, the mucous membrane will be shrunken and pale. A small amount of cotton is wound on the end of a metal applicator, moistened with a 1:1000 solution of epinephrine hydrochloride, pressed dry and dipped into cocaine flakes. The applicator is then passed into the nose at an angle between the middle and posterior thirds of the middle turbinate and the septum until it reaches the face of the sphenoid sinus, just below the opening into the sphenoid cells. A second applicator, carrying epinephrine and cocaine flakes, is placed in the cleft of the nose at a point between the attachment of the anterior

end of the middle turbinate and the septum (Fig. 4). This procedure is now carried out in the opposite side of the nose. The applicators are left in place for about five minutes.

Operations on the sphenoid sinuses, for relief of occlusion of the choanae, for the removal of nasal polyps, and for the removal of turbinates can be performed under this type of anesthesia. The operation

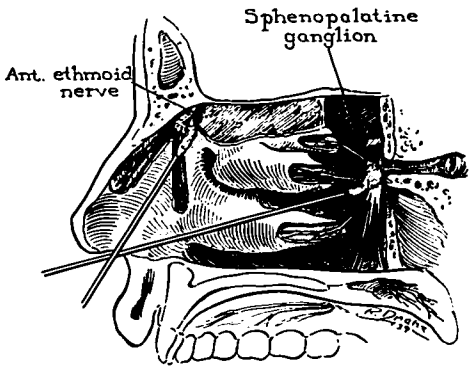

FIG. 4. Cotton-tipped applicators in position to anesthetize the anterior ethmoid nerve and nasal branches from the sphenopalatine ganglion.

will be facilitated by assuring a fairly dry field if 2 or 3 cc. of a 1 per cent. solution of procaine with epinephrine is injected into the mucobuccal fold of the upper lip. Operation on the paranasal sinuses other than the sphenoid sinuses by the intranasal route requires more complete anesthesia of the structures than that which has been described. For such procedure intranasal cocainization and then the injection of the nerve supply to the field of operation should be carried out.

For operations on the maxillary sinuses the second division of the trigeminal nerve must be blocked in order to produce anesthesia to the lining membrane of the sinus. This procedure can be carried out either by the external route or the intra-oral route. I prefer the external route, for the landmarks are more prominent, and the skin can be prepared so that the needle is passed through a relatively sterile field. For the external approach, the zygomatic bone is first palpated. The palpating finger is then moved below the lower border of the zygoma, and the patient is asked to open and close his mouth. This maneuver helps the anesthetist to form a clear mental picture of the relationship of the coronoid process to the zygomatic bone. A small wheal is raised on the skin of the cheek adjacent to the anterior border of the coronoid process and 0.5 cm. below the zygoma. A flexible, 50 mm., 23-gage needle is passed through the wheal on the skin and is directed

slightly upward and backward until the point of the needle rests on the lateral pterygoid plate. The needle is then withdrawn slightly and its tip is redirected anteriorly until it passes 0.5 cm. beyond the anterior border of the lateral pterygoid plate. The point of the needle now rests in the pterygomaxillary fissure and just in front of the foramen rotundum. This point is almost directly posterior to the tip of the nose. The syringe is attached to the needle and gentle aspiration is done to make sure that the tip of the needle is not lying within the lumen of a vessel. Two and a half to three cubic centimeters of a 2 per cent. solution of procaine containing epinephrine is deposited at this point (Fig. 5).

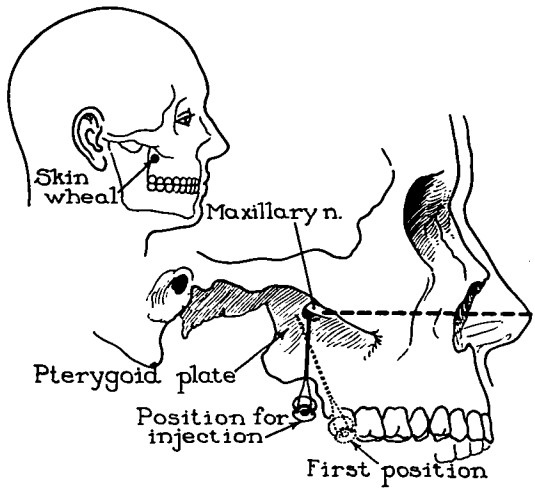

FIG. 5. Block of maxillary nerve; first position shows tip of needle on lateral pterygoid plate; position of injection shows tip of needle directly anterior to the foramen rotundum.

Paralysis of the sixth cranial nerve is noted occasionally after blocking of the second division of the trigeminal nerve. This may happen often if the intra-oral method is used. However, this paralysis of the abducens nerve is transient, and while it alarms the patient, it should be of no consequence.

For the external type of operation on the maxillary sinus, the same procedure is carried out, but in addition, the line of incision is infiltrated for the purpose of hemostasis. Anesthesia for operations on the ethmoid sinuses can be carried out satisfactorily by first shrinking the mucous membrane of the nose with solutions of epinephrine and cocaine, by cocainization of the nasopalatine nerves and the terminal

branches of the nasociliary nerve and by injection of the ethmoid nerves within the orbit. This procedure is done by raising a skin wheal about 1 cm. above the inner canthus of the eye. A 50 mm. needle is passed through the wheal and is advanced posteriorly and medially until the bevel of the needle comes in contact with the periosteum (Fig. 6). It is then advanced slowly until the tip of the needle comes to rest in the area of the anterior ethmoid foramen, which lies approximately 1.5 cm. within the medial wall of the orbit. One-half cubic centimeter of a 2 per cent. solution of procaine or metycaine is deposited at this point.

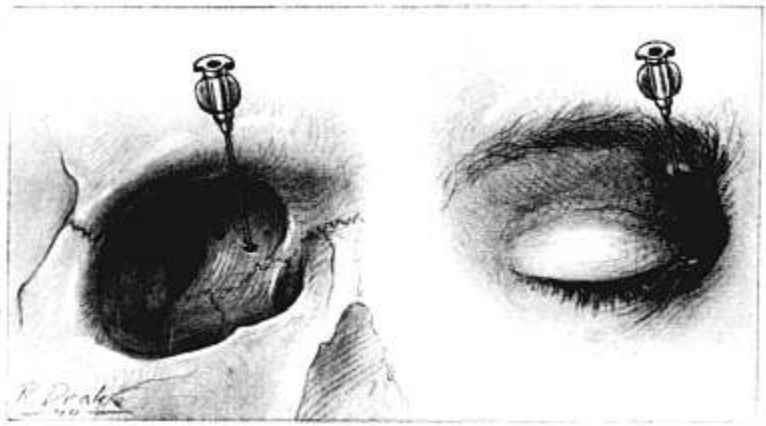

FIG. 6. Injection of ethmoid nerves at the anterior ethmoid foramen.

This type of anesthesia is also satisfactory for operations on the frontal sinuses either by the external or the nasal route. If the external type of operation is to be done, an additional amount of the anesthetic solution, containing a vasoconstrictor, should be deposited along the supraorbital ridge and along the lateral side of the nasal bone for the purpose of hemostasis.

External frontal sinusotomy can be carried out satisfactorily under a combination of local and general anesthesia. The nose is first cocainized by the method previously described; assurance that the membranes around the nasofrontal duct are well shrunk is necessary. Infiltration of the line of incision with an anesthetic solution containing a vasoconstrictor will lessen the amount of hemorrhage materially. The patient is then anesthetized with the gas-oxygen-ether technic. An intratracheal tube is passed through the mouth and the pharynx is well packed with moist gauze to prevent the passage of blood and mucus into the trachea. The intratracheal tube is then connected with the gas machine and sterile drapes are applied over the tubing. Thus the

anesthetist and the anesthetic apparatus are entirely removed from the operating field.

A great deal of hemorrhage accompanies external frontal sinusotomy despite the infiltration of the line of incision. It has become my practice to administer solutions intravenously to all such patients throughout the period of operation in order to prevent the onset of shock. These patients receive from 500 to 1000 cc. of physiologic solution of saline and most of them receive 500 cc. of citrated blood. We have found that the morbidity and mortality rates in these cases have been lessened by preventing shock and by replacement of the blood lost (7).

ANESTHESIA FOR OPERATIONS ON THE EYE

Most operations on the eye can be carried out successfully under local anesthesia. However, the occasional patient who is not a suitable subject for local anesthesia should have either intravenous anesthesia or inhalation anesthesia. Intravenous anesthesia should be reserved for those cases in which operations will last less than half an hour. Long operations on the eye, such as the operation for squint, are probably more safely done with the aid of general anesthesia administered through an intratracheal tube. A patent airway is assured and the anesthetist and the anesthetic apparatus are removed from the operating field.

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Physician-anesthetists desiring certification should obtain information from the Committee on Fellowship of the American Society of Anesthetists, Inc., E. H. Eliasberg, M.D., Secretary, 275 Central Park West, New York City.

If the practice of physician-anesthetists is limited exclusively to the specialty, they may be eligible for certification by the American Board of Anesthesiology, Inc., Paul M. Wood, M.D., Secretary, 745 Fifth Avenue, New York City. It is suggested that possible applicants read the statement of the American Board of Anesthesiology, Inc., in the Journal of the American Medical Association, which statement is appearing in alternating current issues.