

## CHAPTER XXXIV.

### WOUNDS OF THE MOUTH AND ASSOCIATE PARTS.

WOUNDS of the mouth and associate parts have, of course, the signification of wounds in general. Thus, some are of an incised character, being slits or incisions made, accidentally or purposely, by sharp-edged instruments. Some are lacerated, contused, or torn, being made by dull and blunted instruments; some are punctured, a result of injury by pointed but not sharp instruments; some are penetrating, as when the offending agent passes through the lip or cheek into the vestibule. A wound may be of a compound, or complicated, nature, as, for example, in the case of blows or falls, where, while the lip or cheek is cut or contused, lesions relate at the same time with the teeth or jaw; gunshot injuries, lacerating or simply puncturing the soft parts, comminuting the hard; bites of rabid animals, introducing a virus; syphilitic inoculations, etc., illustrate complicated wounds. Complications may also be considered as embracing hemorrhage and shock as primary associations; inflammation, with its varied phenomena, erysipelas, pyæmia, tetanus, etc., as secondary associations.

Every wound presents a first indication. If an individual receive a hurt which covers the injured part with earth or other foreign substance, such substance is to be washed or taken away as a primary step. If hemorrhage be the feature, arteries are to be ligated, or other necessary means taken to control the bleeding. If shock be present, this is the most immediate feature, and is first to be combated. If a rabid, or poisonous, animal has inflicted the wound, the destruction of the virus is a first indication.

**Foreign Particles.**—To remove foreign matter, no better means is to be employed than simple sponge and water. Holding a basin beneath the injured part, squeeze water upon it from the sponge; if the particles be not washed away with the agent closely applied, let it be lifted, and the water allowed to fall from a distance. It is not, as a rule, at all necessary to rub a sponge directly over the surface of a wound. Bodies which are not to be washed away, no matter what their character,—splinters, shot, balls, particles of powder, spiculæ of bone, etc.,—are to be removed with forceps, scoop, or other convenient means, the rule being to allow nothing to remain that may interfere with the process of repair.

**Hemorrhage.**—A first matter to consider in hemorrhage is its character. Is it arterial, venous, or capillary? An arterial hemorrhage is known by its scarlet color, and by issuing from the wound in jets. Hemorrhage from a

vein is dark, and has a gradual and regular flow. Capillary hemorrhage is an oozing. Arterial hemorrhage may require that the bleeding vessel be ligated. To do this, it is only necessary to sponge away the blood until the part is to be plainly seen; it is then to be taken hold of by the forceps, or caught by the tenaculum, and a strand of waxed silk thrown around it. In tying this silk, one must be careful that he does not break his strand at either side of the knot; also that the tightening shall be sufficient to cut the middle and inner coats of the vessel. To prevent tearing the artery from its bed by the breaking of the ligature, the rule of holding the thumbs upon the strands close to either side is to be observed. After ligating a vessel, one end of the thread is to be cut off and the other brought from between the edges of the wound; this allows of easy future removal of the knot.

Torsion of a bleeding artery is a favorite mode of treatment with many surgeons. The end of the vessel is to be caught by the forceps and twisted. The author of the mode suggests that torsion be continued until the end is twisted off.

Acupressure is another and a very common method of treatment. A steel or gold needle is passed beneath the vessel in such manner as to tightly compress it against neighboring parts.

Pressure by pad and bandage, when a hemorrhage about the face will not yield to simpler means, is a very satisfactory way of treatment, and one very reliable. All the vessels of the face region rest upon a bony floor, and all of them, at certain points, are sufficiently superficial for the purpose of compression,—the facial, at the notch in the inferior maxilla, in front of its angle; the temporal, just in front of the ear above the zygomatic process; the supraorbital, at the notch in the orbit; the infraorbital, at the foramen below the border. (See *Surgical Anatomy*.)

A bandage of common application for any of these vessels is the crossed, or knotted, circular. A glance at the drawing (Fig. 377) will afford understanding of the manner of its employment.

It is, however very seldom that any of these operations are necessary for the arrestation of hemorrhage about the face or mouth. Cold water thrown over the bleeding part from a sponge causes generally such contraction, both of vessels and tissues, as to control it quickly enough. If water alone do not answer the purpose, let alum be added, as much as the water will dissolve. If even this should not suffice, a syringe may be used, throwing a jet from a distance directly upon the bleeding part; this last will seldom disappoint. Monsel's salts, so warmly lauded for their styptic qualities, have exhibited to the writer more ill results than he has ever met with from any dozen other

FIG. 377.—CROSSED, OR  
KNOTTED, BANDAGE.





articles. If employed at all, the bleeding points alone are to be touched; but of one thing any one using them may be assured: if the application do not control the hemorrhage instantly and permanently, he will have increased his trouble manifold.

A hemorrhage that is venous or capillary seldom requires more than the application of cold water. If this or an alum conjunction, or preferably phénol sodique, fail, astringent medicines are to be administered internally. Of the anti-hemorrhagic medicaments, a tincture of the erigeron canadense, one drop in a teaspoonful of water each minute, may be tried. This dose seems like a very small one, but a larger always appears to do harm rather than good. Opium and lead are to be used with much satisfaction, one grain of the former to two of the latter; three or four of such pills may be administered at intervals of from one to six hours for each—if found necessary.

#### SHOCK.

Depression generally attends, to a greater or less extent, the reception of wounds. Surgery divides shock into primary and secondary, or that which is immediate upon the reception of an injury, and that which exhibits itself at some later period. Shock is prostration: this may be simply of a nervous nature, implying functional disturbance; or it may be organic, testifying to injury of a vital part; it may, again, have the twofold relation.

In the author's experience he has found few things more important to observe than the differences between real and apparent shock. One person, heavy and lymphatic of temperament, receives an injury mortal in its character, and yet, as immediate or primary shock is concerned, shows less evidence of such injury than may some other of a different nature who is suddenly called to look on his wound. Mistakes in judgment of these limited expressions may readily influence a practice most adverse to the good of a person prescribed for.

Shock means interference with function. Interference with function arising out of the direct destruction of a part is not to be recovered from, that is, if the part destroyed be necessary to the functions constituting life. Interference with function extended over a lengthened period is dangerous in proportion to the continuance of the period. Functional disturbance, individual or general, arising out of simple shock, may reasonably be expected quickly to correct itself.

Shock is characterized by expressions varying all the way from tremor to collapse. Expressions of primary shock are paleness, trembling, faintness, sickness of stomach, giddiness, palpitation of heart, cold sweating, loss of office in sphincter and other muscles, disordered respiration, glassiness of eyes.

Primary, or immediate shock, has seldom the dangerous meaning of that which comes on in the later course of an accident. An intermediate condition, consecutive shock, not infrequently met with, is without dangerous import, as it implies simply a mental recognition, just arrived at by the patient,

of a situation in which he finds himself. Insidious, or secondary shock, is never to be absent from a surgeon's mind when injury is about the head region. Here the import refers likely to injury done the vascular system; the ill consequences arising out of hemorrhages or effusions. Many a blow ending fatally, received upon the head, has had as the primary expression nothing more than a slight bewilderment almost instantly recovered from.

A patient, being the receptive of a grave injury, yet showing little concern, either bodily or mentally, as to the harm received, is to be watched with anxiety. Here, as is frequently enough found the case, the system is in a state of stun. It has received a hurt which has destroyed or greatly interfered with sensibility. Gradual change shows in an icterode skin, in an albuminoid expression of the immediate subcutaneous tissues, cold extremities, a weak, but laboring pulse, occasional long-drawn sighs, progressive prostration.

To appreciate the subject of shock is to recognize its relations with the nervous, the vascular, and the common visceral systems. The first finds a familiar illustration in the effects of self-given blows over the locality of the solar plexus. The second is to be appreciated in watching the changes common to one undergoing the operation of venesection. Collapse belonging to the third is but an intensified expression of a history associated with splanchnic inflammations.

Accepting the above expressions of relationship, diagnosis and prognosis are divested of confusion. A person may die, persons have died, from nervous shock arising out of extraction of a tooth. Quite a number of instances are on record where similar fright in anticipation of taking an anæsthetic has resulted fatally. The trepidation associated in many persons with injury connected with surgical performances is infinitely of more evil import than the hurt itself. Some persons faint at the first spurt of blood from an opened vein, others require to be kept in an upright position and the vessel largely incised that they be depressed at all.

Idiosyncrasy is to be taken into account; a warrior shows paleness at sight of a coffin, a strong woman grows hysterical at approach of a mouse. Some particular child goes into spasms on putting a forkful of cabbage into its stomach.

To treat shock is to deal with varying conditions. Medicines required vary all the way from an assuring word to a dose of ammonia. A danger is from over-doing. In ordinary depression the abeyance in action tends naturally to over-excitation in the reaction. A patient doing well is to be let alone. Stimulation is not the indication; rather, indeed, would it be the better practice to exhibit depressants as reaction shows itself, wholesome fear being entertained of over-excitation. A best plan is to do nothing until indications make themselves clearly felt.

Shock of simple, but prolonged character, demands the treatment given a fainting fit: namely, recumbency as to position, fanned air, the dress loosened, cold water gently sprinkled or otherwise dashed vigorously over the face,



smelling-salts to the nostril. If continuing, in defiance of the employment of these means, recourse is to be had to swift blowing into the ear, the dropping of a few minims of raw liquor into the throat, or, in the absence of this, the use of ice-cold water. An excellent adjunct lies in the application of sinapisms; in this direction immediate result is to be derived from the use of pure chloroform poured over a handkerchief which has been folded into a small square, the application to be to the præcordial region, or otherwise to the calves of the legs; the agent is to be so covered that its vapor shall not reach the nostrils of the patient.

Prolonged shock having associated with the symptoms a continued retching is commonly to find its best treatment in the administration of an emetic; particularly is such a treatment indicated if it be known that a hearty meal has immediately preceded the accident; retching is almost invariably found associated with an ability to swallow.

Anodynes are not infrequently indicated after shock. An excellent and reliable combination consists of tinctures of valerian and gentian in equal parts; the dose varies from a drachm to a half-ounce. Another excellent means is found in a combination of bromide of potassium and veratrum viride; as a dose for an adult from twenty to forty grains of the first, four to eight drops of the second, may be administered in a wine-glass of water. In injuries having associated with them fear of secondary hemorrhage or effusion opium conjoined with lead is to be employed; the dose is one grain of the former to two of the latter, repeated as occasion requires.

Tendency to visceral determination is to be combated by cups, wet or dry; by hot foot-baths; by medicines directing the circulation to organs the most remote from the particular one threatened.

**Virus.**—If a rabid dog, or other animal, bite the part being considered, or any part,—if a poisonous snake strike its fang, or if the loose kiss of chancreous lips inoculate,—a first indication is to get clear of the poison. How? It is now very generally accepted that, as the first is concerned, the immediate application of the stick nitrate of silver to the part wounded will neutralize the poison, or that, at any rate, it will alter the status of the hurt to an extent which results in a slough and the prevention of absorption. If an escharotic be not at hand (and this, at the moment, would be not unlikely), such a wound may be cut away. Suction is also an admirable prophylactic. The danger to the person sucking such a wound would be trifling; danger, at all, depending on a casual abrasion that might at the time be present about the mouth or lips. Excision of bitten parts is frequently practised. The writer recalls an occasion on which, several years back, an enraged rattlesnake escaped from an experimenter, striking its fangs into a colored assistant standing by. Without a moment's hesitation, the gentleman excised the part: no harm came of the matter. Tiding a patient over the depression of rattlesnake-poison by the stimulus and specific effects of whiskey has received so many confirmations as to reliability as to have become a matter of common knowledge. As

the removal of hurts received from dogs, supposed rabid, is concerned, the author has, on several occasions, practised excision with entirely satisfactory result. Without exception, however, the wounds had been received through intervening substances, and such substances may have prevented the introduction of any poison. Syphilitic virus is best destroyed by use of London paste.

**Healing Wounds.**—Primary indications met, a second relates to the healing of a wound. Every break in continuity heals by granulation. The difference between a healing by first intention, as it is termed, and a healing by second intention is only a difference in degree. An incised wound, delicately and accurately approximated, unites with so little new inter-tissue that observers quote cases where no line of difference was discernible even under the microscope. A healing by second intention, so called, may require so much material to fill a gap that the new, or cicatricial, substance is observable at a great distance; frequently witnessed in scars from burns. An indication, then, of the utmost importance to be met in wounds about the face, is the avoidance of a necessity for new tissue. To meet such indication, every wound is to have its parts as nearly and as neatly approximated as possible, and the associated vascularity controlled.

How wounds are best put together is a matter which is always eliciting discussion. Common methods are by stitches, plasters, and compresses. An incised wound, of limited extent, about the cheek, seldom needs more than a strip of adhesive plaster thrown across it. If such a wound occupy the position of the lips, and complete separation has been made, adhesive plaster will not, perhaps, be found sufficient for the purpose. To insure the best result, a stitch is to be used, and increased support given by placing lateral compresses at the sides of the wound, relating these by a turn of the circular bandage; or it may be found that, after the stitch, the adhesive strips will answer the purpose. Pins, with a figure-of-eight turn about them, make a very nice, reliable, and accurate adaptation, and, if not kept in too long, leave very little scar.

A mode of approximation, which is found very satisfactory, consists in using a suture of silver wire, and bringing the edges of the wound together, as directed in cleft palate. An objection, however, it must be admitted, to all pins and stitches, lies in the fact of new wounds being made,—an irritation being begotten by the presence of the foreign body, which is very apt to provoke more or less suppuration, thus making other scars, as is witnessed so frequently in operations performed for hare-lip; it may therefore be set forth as the best practice, that a means which breaks the flesh is to be avoided, if any other can be made to answer. Silver or lead wire is preferred to the waxed silk only from the fact that these metallic agents seem to irritate less, and are, therefore, not so likely to make points of suppuration, and consequently scars.

When pins or stitches are used, they are to be left in place only so long as



is absolutely necessary; the time will, of course, depend much on circumstances. If an incised wound do as well as it may, twenty to seventy hours will usually be found sufficient for the union, while instances enough exist where, in that time, the process of repair seems scarcely to have commenced. A very good way of obtaining information is to sponge the wound, and to be instructed by the line of approximation: if this continue to show its incised nature, the pins are not to be disturbed; if, on the contrary, it is a fleshy line of comparative solidity, the pins are to be removed,—the parts will hold.

The withdrawal of a pin or ligature is a matter demanding delicacy of manipulation. It is frequently, and indeed generally, the case, that more or less blood-rust collects, making the removal a matter of such difficulty that, unless precaution be taken to scrape away such rust before making the attempt, disturbance of the cicatrix is inevitable. In the withdrawal of a pin, an important matter is the rotation of it; such rotation facilitates the getting away wonderfully. Metallic ligatures are generally disturbing on removal; the proper plan to take them away is to cut the wire at the side of the knot opposite that on which it seems desirable to withdraw it; the end is then to be carefully straightened, so as to place it on a line with the part through which it is to be pulled from the wound; support is to be given the cicatrix by a finger applied on either side, when, with a rotatory movement, the wire is taken away. In the use of the pin and figure-of-eight, a very excellent plan is, on the removal of the pin, to allow the blood-matted silk to remain glued to the wound; it serves to hold the parts together, and is entirely void of any offence as a source of irritation.

When plasters are used, it is a necessity to have all hairs shaved away and the parts perfectly dry. The ordinary adhesive kept on sale by every druggist, composed of resin and lead plaster, is perhaps open to as little objection as any. It is to be applied in strips of convenient length and breadth, and rendered sticky by holding, for a moment, the back of the strip in contact with a vessel of hot water. There are skins, however, which this plaster irritates and inflames; when cases of the kind are encountered, it is well to employ an isinglass plaster. This latter is applied by moistening the glazed surface with water.

In the use of plasters, it is a good rule to allow a space between each strip: this not only keeps the wound exposed to observation, but permits of easy drainage. The only exception to this rule is found in small cuts where it is thought desirable to use collodion. This mixture of gun-cotton and ether is applied either directly over a cut—first nicely approximating the edges, and holding the parts together until the ether has evaporated—or indirectly through the agency of saturated slips of gauze or other convenient material.

The removal of a plaster is to be effected by drawing the strip from either side toward the wound; such a removal being accomplished without any strain upon the cicatrix, the line of union being, of course, supported by the thumb and forefinger of the other hand. If a wound seems to be doing well

under plaster, there need be no special haste in the removal. It is usually the case, however, that such a dressing will not continue to do service longer than two or three days. In simple incised injuries, this is generally all that is needed, but in lacerated wounds, dressings are demanded an indefinite length of time, and require continued renewal. In reapplying a dressing of adhesive strips, a good plan is to displace and replace one at a time. In this connection attention is to be directed to a plaster prepared by Meade, of New York City; the author has never met with any that at all equals it; no heat is necessary to its application.

**Complicated Wounds.**—The history of a few cases may, perhaps, best serve to illustrate practice in the direction here considered.

**CASE I.**—Little girl, of remarkably perfect temperament,—temperamentless, it might be said,—about four years of age, brought into the office with a gash in the lower lip, and the six anterior teeth knocked directly back; considerable hemorrhage.

*Treatment.*—Checked the hemorrhage, and cleaned the parts by the free use of cold water applied through the syringe; pushed the teeth back into their unfractured alveoli, and retained them in place by laying a delicate roller over them, fixing it beneath the chin. A single stitch of waxed silk was placed in the wound of the lip. The case was dismissed for the day, with directions to keep the parts refrigerated through a continuous application of cold water.

*Second day.* Same treatment continued, the band over the teeth being replaced by a fresh one.

*Third day.* Wound in the lip healed sufficiently to remove the ligature. Teeth somewhat tightened; very little inflammation; continued the bandage, but left off the application of the water.

*Fourth day.* Removed the bandage. Teeth very sore, but doing well, and quite fast.

*Eighth day.* Patient dismissed; some soreness still in the teeth, but needing only time to bring them to full health.

This case was seen three months after the accident; there was no discoloration of the teeth, and not the slightest evidence that any harm had ever been done them.

**CASE II.**—Child six years of age. Four front inferior teeth knocked loose by a blow from a ball; some contusion of the lip, but no break in the continuity; very little bleeding.

*Treatment.*—Removed the injured teeth; absorption of the sockets having progressed to a considerable extent, applied to the lips dressing of cold water; case well enough to dismiss next day.

**CASE III.**—Little boy, five years of age, fell upon a curbstone, fracturing the superior alveolar process. Examination revealed six teeth movable in mass, the fracture extending from tuberosity of right side to canine fossa of left. The accident occurred nine hours before recourse to treatment.

*Condition.*—Child feverish and restless; pulse much excited; soft parts



about the seat of fracture considerably swollen, and so tender as to cause the patient to scream when the parts were touched.

*Treatment.*—A Seidlitz powder; hot pediluvia; the mouth syringed with cold water; iced lemonade *ad lib.*; spts. Mindereri, ʒij,  $\frac{1}{16}$  gr. acetate of morphia. This was the treatment on the afternoon and night of accident.

*Second day.* Hot pediluvia; iced lemonade, made of crushed ice; mustard poultice at back of neck.

*Third day.* Swelling of gums very much abated. Fed the child freely with spoon food, then brought the fractured part to its place by reducing to proper articulation with lower teeth, and retaining in position by means of the yard strip modification of the Barton bandage; a fairly comfortable day was passed. In the evening the bandage was loosened, the child again fed, the bandage retightened, patient put to bed. A comfortable night was enjoyed.

*Fourth day.* Doing very well. On loosening the bandage there was very little tendency in the fractured part to move of itself; child fed with soup food; mouth well syringed with cold water; bandage reapplied. Patient played about the room most of the day, taking lemonade and rice-gruel very frequently; the fluid being placed within the lips and sucked between the teeth.

From fifth to tenth day did little more than continue the treatment of the fourth.

*Eleventh day.* Removed the bandage. Fracture fairly solid; able to hold of itself; liquid food continued; no other treatment.

*Fifteenth day.* Patient began to eat solid food; passing on, without further treatment, to a good cure.

CASE IV.—Little girl, three years of age, markedly scrofulous; lip cut through; fracture of process of central, lateral incisor, and cuspid teeth of left side inferior maxilla; cutting edges of teeth thrown backward.

*Treatment.*—The wound in the lip being quite extensive, a hare-lip pin was inserted, and the parts pushed together and held with a figure-of-eight. The fractured process was restored to position, and retained by tying the one end of a strand of waxed floss silk around the last molar tooth of the injured side, bringing it forward, passing it between the first molar and cuspid of the fractured part, back of the three teeth of the broken process, then out between the central incisors, and back to the first molar, where it was tied. This ligature supported the part in its place very well. The ferrated elixir of bark, in doses of twenty-five drops, directed to be taken three times a day.

*Second day.* Wound in the lip doing tolerably well; seat of fracture looking puffy and asthenic. Very weak solution of compound tincture of capsicum ordered to be thrown, *ter die*, over the part.

*Third day.* Looking worse; ligatures cutting into the gums; patient refusing both solid and soft food; took away the ligature; tempted the appetite with ice-cream and jellies; scarified the puffy gum.

*Fourth day.* Matter oozing from about seat of fracture; etherized the child; dissected down to the broken piece, and removed it.

*Sixth day.* Very much improved; wound healing fairly; continued to syringe with the dilute capsicum comp.

*Eighth day.* Case well enough to be dismissed. The pin in the lip had been removed on the third day. The wound gaped some little; but the removal was a necessity, on account of irritation produced by its presence; support was given by an adhesive strip. After the taking away of the pin, and the part being stimulated with capsicum, it healed very rapidly.

CASE V.—M. L., an iceman, aged perhaps thirty-five, brought into the office immediately after having been kicked on the mouth by a vicious mule. Patient very pale and faint. Examination revealed comminuted fractures of the alveolar process of both jaws, with the teeth knocked into every position.

*Treatment.*—First, stimulation with a little brandy. The patient revived. Incisions on either side of the teeth were made down to the bone, and some eight pieces removed, with the teeth associated. No hemorrhage of consequence attended the operation, and in the course of three or four days the man was going about his business,—no treatment, outside of the free use of cold water, having been indicated or employed.

CASE VI.—C. H., struck over the angle of the jaw by a minié-ball, which ploughed across the face, completely dividing the cheek, and grooving the right nasal ala. A first treatment employed on the field, where the injury was received, consisted in associating the several parts with a series of interrupted sutures, and the application of a poorly adapted bandage. In this condition the patient was sent several days' journey, to a hospital in which the writer happened at the time to be employed. A first observation of the case exhibited an immense wound, stitches all torn out; superior maxillary bone exposed, with groove cut into it; suppuration profuse; patient irritable and feverish, and much exhausted.

*Treatment.*—The weather being oppressively hot, a large basin of water was brought, in which the head and face were thoroughly, yet tenderly, washed. The matted hair was combed out and arranged. This refreshed the man very much. Examination of the wound was commenced. On the groove in the bone was found no splinter, nor other indication adverse to the direct and immediate overlying of it by the soft parts. Attention to the line of wound in the flesh exhibited that the slough, which must necessarily have ensued from the passage of the ball, had been completed, and that a process of repair was attempting to inaugurate itself. Indications being very plain, the whole of the cut and suppurating surface was slightly stimulated by an application of dilute tincture of iodine, and then carefully moulded into place and approximated. The maintenance of this apposition was accomplished by fitting a compress to the cheek, and also below the wound, and, by means of a bandage, carefully lifting and supporting it; no stitches, pins, or plasters being