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## COEOR50 PR Reves: <br> IPfustrating features of Anatomy, Surgery, Deformities, Displacements, Strictures, FISTULAS, CAncer, Syphilis, Glanders etc. etc.



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## GENERAL REMARKS UPON INCISIONS.

Incisions in the skin are made with the object of laying bare, or of removing some deeper part.

They should be made sufficiently large, or the operation is rendered tedious and difficult.

Incisions are made from without, inwards, as for the extirpation of a tumor, or from within, outwards, as laying open a fistula.

In making incisions from without, inwards, the skin should be stretched upon the deeper parts by the left hand of the surgeon, or an assistant.

Incisions from within, outwards, may be made with or without a grooved director. In one process, the knife being introduced in the second position beneath the skin, aponeurosis, or into a sinus, is raised to a perpendicular, and made to cut through the tissues from heel to point.

In a second process, the knife being introduced in the first position, its point is made to perforate the tissues to the surface, and the cutting is effected from point to heel. By this second process a fold of skin may be cut through, as in the operation for
strangulated hernia : a fold of integument is raised and held at one extremity by the operator, and at the other extremity by an assistant ; the knife, held in the first position, is now made to pierce the fold and cut its way to the surface.-Norton's Text Book of Surgery.

## METHODS OF HOLDING THE BISTOURY.

The three principal methods of holding the bistoury are seen in Plates I and II.

The first position; for firmness and strength (Figs. I and 2, Plate I), the handle of the bistoury is held like a table knife with the edge turned downwards (Fig. I), or with the edge turned upwards (Fig 2).

The second position (Figs. 3 and 4), for lightness and precision, the bistoury is held like a pen, with the edge turned downwards (Fig. 3), or upwards, as in Fig. 4.


## Plate II.

The third position (Plate II, Figs. I and 2) is for nicety and precaution. The bistoury is held like the bow of a violin, with the handle of the instrument held forwards, the blade backwards, and the cutting edge upwards (Fig. r), or else with the handle backwards, the blade forwards, and the edge downwards (Fig. 2).

The various positions for holding the bistoury, as illustrated in Plates I and II, are merely suggestive; the experienced surgeon will choose for himself.

## TYING AN ARTERY IN A STUMP.

Figure 3.- $a$, Artery in a stump, seized on the point $b$, of a tenaculum ; $c, c$, are ligatures for tying the artery.


## ORDINARY PROCEDURES IN LIGATING AN ARTERY.

In order to find an artery which it is intended to tie -
Firstly.- Determine the course of the vessel, both by anatomical knowledge and by the pulsation of the vessel.

Secondly. - The skin being conveniently stretched, make an incision with a convex bistoury, held in the third position, along the course of the vessel, increasing the length of the incision according to the depth of the vessel.

This incision should comprise the skin and the cellular tissue.
Thirdly.- Divide by means of the grooved director the enveloping aponeurosis, and turn aside the muscles to seek the vessel, which is usually contained, together with its companion veins and nerves, in a common sheath.

Fourthly.- Raise the sheath with dissecting forceps, and divide it with precaution, sufficient only to introduce an aneurism needle.

Fifthly. - Next lay aside the bistoury, and with the director and forceps free the vessel from the tissue around, taking care not to denude the vessel to too great an extent, and also to introduce the director between the vessel and the most important companion structure, in order not to wound that structure by the point of the director.

Sixthly. - When the artery is denuded and raised upon the director, determine the pulsation, and then pass the ligature beneath it by means of an aneurism needle furnished with the thread, introducing the needle between the artery and the most important companion structure.

Seventhly, and lastly.-Tie the artery tightly in the first knot, drawing the thread over the two index fingers like pulleys, in order to prevent too great an elevation, and a too great traction upon the artery; then tie the second knot, and cut one end of the ligature, bringing the other out at the lower end of the wound, unless the catgut ligature is employed, in which case both ends are cut off short.-Norton.

## PLATE III.

## LIGATION OF THE AXILLARY ARTERY IN ITS LOWER THIRD.

References.- $a$, Incision of the skin; $b$, division of the aponeurosis; $c$, median nerve; $d$, axillary vein pressed downwards by the retractor; $e$, internal cutaneous nerve; $f$, sheath of the axillary vessels ; $g$, axillary artery upon the director.


## Plate IV.

## FIG. I.---OPERATION FOR TRACHEOTOMY.

$a$, $a$, Incision in the middle line front of the trachea ; $b, b$, tape to keep canula in the trachea.

FIGS. 2, 3 AND 4.---DISARTICULATION OF FINGER AT SECOND JOINT BY DORSAL INCISION.

First stage. - The Joint entered by the blade of the knife (Fig. 2).
Second stage.-After having traversed the articulation, the knife is turned down beneath the bone, and brought out on the palmar surface, in order to cut the flap (Fig. 3).

Third stage, and operation completed.- Flap applied to the stump by adhesive plaster. Instead of employing plaster, the edges of the flap may be adjusted by sutures.


## Plate V. <br> DISARTICULATION OF THE METACARPAL BONE OF THE THUMB.

Figure 1.- $a, b, c$, Form of incision.
Figure 2.- The thumb being drawn across the palm of the hand, the disarticulation of the base, $a$, of its metacarpal bone is accomplished.

Figure 3.-Lips of the wound adapted.


## Plate VI.

HARE-LIP.

Figure 1.-Simple Hare-lip.
Figure 2. - The same after operation.
Three points of twisted suture unite the edges of the wound.


Plate ViI.

Figure 1.-Double Hare-lip.
Figure 2.- The same after operation.


## Plate Vili.

## OPERATIONS UPON THE EYE.

Figure i.-Ectropion-Desmarres' Operation.- $a, b$, First incision beginning at the external angle of the eye; $b, c$, second incision beginning at the free border of the lower lid and joining the first at $b ; c, d$ and $a, d$, two incisions beginning at the internal extremities of the two first and meeting at $d$, at the point of reflection of the ocular and palpebral mucous membranes.

Figure 2.-Same operation finished.- Three sutures, $a, a, a$, uniting the edges of the wound.

Figures 3 and 4.-Adhesion of the Lid to the Globe of the Eye (Symblepharon).

Figure 3.-Ammons' Operation.- The portion of the eyelid which adheres to the globe of the eye is enclosed between two incisions, $a, b$ and $c, b$, which isolate it from the rest of the eyelid.

Figure 4.-Same operation finished.- The two free edges of the incision are united by three sutures; $a$, the little adherent flap.

Figures 5 and 6.-Operation for Strabismus - M. Sedillot's plan. Fig. 5.- The lids are kept away by a blepharectome, $a ; b$, a tenaculum entrusted to an assistant; c, forceps raising a fold of conjunctiva; $d$, scissors cutting the fold in order to expose the muscle. Fig. 6.- $a$, The blunt hook passed beneath the muscle; $b$, the scissors cutting through the internal rectus muscle.


## Plate IX.

## RHINOPLASTY.

Rhinoplasty originated in India, where the Brahmins sometimes employed it to remedy the deformities which had been caused by punishment for crime. About the fifteenth century it was introduced into Italy, and established as a regular operation by Branca and Tagliacozzi.

The object is to repair a partial or total loss of the nose.
The Indian method consists in taking from the patient's forehead sufficient skin to repair the loss of tissue (see Plate IX).-Norton.


## Plate $X$.

## RHINOPLASTY.

The Italian method is but a modified form of the operation performed in Italy by Tagliacozzi. The new nose is borrowed from the skin of the arm.

The figure (Plate X ) shows the kind of bandage which the patient will have to make up his mind to endure while the arm is kept up to the face.

Remarks.-Rhinoplasty is always a serious undertaking. It rarely affords encouraging results, and noses formed in this way
often shrivel up and form tubercles, which sometimes result in a deformity more hideous than that which it has been intended to cure. Nowadays, such successful noses have been made of wax and other materials, and attached by means of spectacles, etc., that it is only in extreme cases that rhinoplasty is employed, and the surgeon should not yield to his patient's request until he has warned him of the dangers to which the operation will expose him. Few people will endure the Italian operation. In most cases the Indian plan is preferable.-Norton.

## Plate XI.

## SECTION OF TENDO-ACHILLES TALIPES EQUINUS.

The foot is in the same line as the leg, and only the toes rest on the ground (see Fig. 1). The heel is raised by the contraction of the tendo-achilles; $a$, point of puncture of the skin where the tendon is to be cut.

Fig. 2 shows position of surgeon and his assistant. The tenotome, $b$, introduced by the wound, $a$, dividing the tendon from behind, forwards.

Fig. 3 shows a dissection of the parts, so that the divided tendon may be seen at $a, a ; b$, sheath of the tendon ; $c$, the crural aponeurosis which forms the posterior layer of the sheath of the tendo-achilles; $d$, division of the skin.

## Plate XII.

## ANAL FISTULA.

Figure 1.-Blind Internal Fistula.- $a, b$, Fistula; $a$, internal orifice communicating with the interior of the bowel, $d ; b$, blind end of the fistula ; $c$, anus; $f$, section of tissues between the fistula and the bowel

Figure 2.- Complete Simple Fistula.- $a$, $b$, Fistula tract, opening at $a$, in the intestine, and at $b$, near the anus, $c ; f$, section of intervening tissues.

Figures 3 and 4.-Desault's Method of Operating.- A grooved director, $a, b, c$, passed through the fistula, is caught by an instrument, $d$, introduced into the intestine. A bistoury, $e$, is started in the groove of the director to divide the bridge of tissues, $f$.

Figure 4.-The same operation.-The bistoury, $\ell$, meets the instrument, $d$, at the end of the director, $c$, and both bistoury and instrument are drawn out together to divide the soft parts in the angle made by the instruments.

In the ordinary operation, a grooved director is passed through the fistula, and caught by the index finger of the operator, and brought to the outside of the anus, as seen in Fig. $5 ; g$, the director ; $a, b$, the fistula; $e$, blade of the bistoury lodged in the groove of the director $g, d$; this blade traveling along the director will divide the bridge of tissues, $f$.

Figure 6.-Ligature.-A thread introduced into the fistula, $b, a$, reaches the intestine, $d$, and passing out by the anus, includes the tissues, $f$, in a loop.


## Plate XiII.

## HERNIA.

Division of the Stricture.-Figure 1.-A fold of skin is raised over the tumor, transversely to the axis of the groin. This fold of skin is held on the inside by an assistant, and on the outside by the left hand of the operator, who, with his right hand, cautiously makes an incision into the fold. The incision may be made from within, outwards, by plunging the instrument, with its sharp edge upwards, into the base of the fold. The above incision (Fig. 1) has merely involved the skin and subcutaneous cellular tissue. When the edges of the wound are separated, the swelling, $a$ (Fig 2), is exposed enveloped in its several coverings, which are
next divided, layer by layer, with the bistoury, $b$, guided over a director, $c$.

The hernia is now exposed.
A director, or the finger, is inserted between the hernia and the seat of stricture.

Figure 3.-The Division of the Stricture.-The surgeon passes over a finger of the left hand either a hernia knife, or a blunt pointed bistoury, the blade of which has been partially covered with lint, and then proceeds to divide the stricture.


## Plate XIV.

## WOUNDS OF THE INTESTINE

Figure i.-M. Gély's Quilted Suture.- The surgeon takes a silk thread that is well waxed and armed with a needle at each end. One of the needles is passed through point $b$, above, and one-sixth inch external to the upper angle of the wound, and is brought out from within, outwards, at point $c$, one-quarter inch below. The second needle enters at point $b^{\prime}$, and comes out at point $c^{\prime}$. The figure illustrates this first step of the operation.

The ends, $a, a$, of the thread are then crossed in front of the wound in such a manner that the thread from point $c^{\prime}$ re-enters at $c$, and the thread from point $c$ re-enters at $c^{\prime}$. The needles then make their exit at $d$ and $d^{\prime}$. Another crossing of the threads is made, that issuing from $d^{\prime}$ re-enters the bowel at $d$, as was done above at $c^{\prime}$ and $c$. This proceeding is continued as far as one-sixth of an inch below the wound, where the threads are tied in a knot.

Figure 2.- M. Reybard's Operation.- The illustration shows a transverse section of the bowel, and of the abdominal wall on a level with the wound; $a, a$, wall of the abdomen ; $b, b, b$, bowel ; $c$, tablet introduced into the bowel ; $d, d, d$, suture of thread passing through and keeping in apposition the tablet, the bowel, and the abdominal wall.

Figure 3.-Transverse Wound of the Bowel-M. Fobert's Oper-ation-Apposition of the Serous Surfaces.- Two silk threads, $a, a$ and $b$, perforate the upper end of the bowel. At the lower end, the edge of the bowel has been turned inwards, while the thread, provided with a needle at each end, passes through this inverted edge and maintains the inversions.

When traction is made upon the threads, $a$ and $b$, the upper end of the bowel is invaginated within the 'ower portions, and by this means the serous surfaces are brought into contact.

Figures 4 and $412 .-M$. Lembert's Operation.-The number of needles and thread required in this operation must be in proportion to the number of sutures to be applied. One thread, $a$, is inserted at $a^{\prime}$, and drawn out at $b$; it then passes over the transverse wound, reenters the bowel at $b^{\prime}$, and again makes its exit at $c$.

The other threads are applied in the same manner.
Figure 4 bis represents the course of the thread, $a, b, c, d, e$, through the wall of the abdomen, $A$. It is only necessary to pull the thread and to tie it, in order to bring the serous surface of the edges of the wound into contact with each other, $B$.

Figure 5.-M. Amissat's Operation.-Longitudinal section of the bowels, showing the cork, $a$, $a$, over which the two ends of the bowel are bound by the thread, $b, b$, the mucous surface of one end being brought into contact with the serous surface of the other.

Figure 6.-Denan's Operation.-Longitudinal section of the bowel and of the collars or rings, showing the disposition of the apparatus employed: $a$, central collar; $b, b$, the two eccentric collars, less deep, but broader than the central one, $a$. One thread $d, d, d^{\prime}, d^{\prime}$, $f, f^{\prime} g$, keeps it all in position. The edge of the upper portion of bowel, $c^{\prime}$, is folded round the upper collar, $b$, and that of the lower portion, $c^{\prime}$, is folded in the same manner over the other collar, $b^{\prime}$. The central collar, $a$, keeps the edges of the wound inverted and pressee them against the internal surface of the two collars, $b, b^{\prime}$. By this means the serous surfaces of the intestinal wall are brought into contact. The thread, $d, d^{\prime}, f, f^{\prime} g$, keeps the collars in place.

Remarks.- The operations above described have not all been performed.-Norton's Text Book of Operative Surgery.


## Plate XV.

## OPERATIONS UPON THE PENIS.

Figure 1.-Division of the fraenum.
Figure 2.- Phimosis - First stage of operation
Figure 3.- Phimosis - Second stage of operation.
Figure 4.- Circumcision - First step.
(For continuation see Plate XVI.)


## Plate XVI.

## operations upon The PEnis-Continued.

Figure 1.- Circumcision - Second step.
Figure 2.- Circumcision - Third step.
Figure 3.-Circumcision - Showing sutures.
Figure 4.- Operation for Paraphimosis - Reduction.


FIG.2.


## Plate XVII.

## OPERATIONS UPON THE PENIS-CONTINUED.

> False Passages - Stricture of Urethra - Plastic Operations - Enlargement of Meatus - Fixing Instruments in Urethra.

Figure 1.-Accidents of Catheterization.
Figure 2.- Passage of bougies through stricture.
Figure 3.-Cauterization of the prostatic part of the urethra with M. Lallemand's instrument.

Figure 4.- Cauterization of the membranous part of the urethra with the straight instrument.

Figure 5.-Division of stricture.
(Continued in Plate XVIII.)

FIG. 1.

FIG. 3.

FIG. 5.

FIG. 2.


## Plate XVIII.

## OPERATIONS UPON THE PENIS-Continued.

Figure i.- Antero-posterior section, showing a stricture of urethra.
Figure 2.- Plastic operation.
Figure 3.-Operation by lateral incision.
Figure 4.- Enlargement of meatus.
Figure 5.- Urethra ending in two aperatures on the glans, $a$ and $a$.
Figure 6.-A catheter fixed in urethra by a piece of darning cotton tied around the penis behind the corona.


## Plate XIX.

## GLANDERS-EQUINIA.

Glanders is a disease peculiarly appertaining to the horse, consisting of a specific poison which is highly contagious and capable of being communicated to the human species through the medium of inoculation. Dr. Elliotson was the first to accurately describe the disease in man, and he termed it equinia, as proceeding from the horse. The disease in man manifests itself much the same as in the horse, viz.: as glanders or farcy. The duration of the disease varies ; in the acutest form it is fatal within a week, and death has taken place even within three days ; in others it has lasted three or four weeks, and in some rare instances, life has been prolonged for many moriths.

In man, as well as in the horse, the disease arises from contagion, and the most common medium is the nasal discharge and the discharge from farcy swellings

It may be spontaneously developed in the horse, but never is in man; but once communicated by the horse to man, it can be communicated from man to man.

Although the virus must come in direct contact with a wound or abraded surface, yet cases are recorded in which the disease was produced by wiping the face with unclean hands or cloths.Holmes.


## Plate XX.

## SYPHILIS.

When syphilitic matter is applied to the surface of the human body no appreciable effect in general results; but when the poison comes in contact with the thin skin in those situations where it joins the mucous membrane, or when applied to the mucous membrane itself, or to the skin in places where the epithelium has been removed, then inoculation may take place. When artificially inoculated, the inoculated point becomes red within the first twenty-four hours. From the second to the third day it becomes slightly raised, and is surrounded by a red areola. Between the third and fourth day it contains a fluid more or less turbid. From the fourth to the fifth day the pustule becomes fully formed, and from this time to the termination of the disease, the secretion consists of well-formed
pus. As soon as suppuration commences, there is loss of substance in the part and an ulcer forms, which has peculiar characters. When not interfered with by any accidental causes, it increases equally in every direction, so as to form a more or less perfect circle. The edges of the ulcer are cleanly cut and present a sharp outline (see Plate XX, Fig. 1).-Holmes.

Figure i.-Inoculations from a suppurating sore as they appeared on the forty-first day.

Figure 2.-Sloughing of indurated sore.-Cullerier.
Figure 3.-Inoculated syphilis on the hand of a surgeon - Holmes.


## Plate XXI.

## SYPHILIS.

A case of chancroid phimosis, accompanied with gangrenous bubo.


## Plate XXII.

## SYPHILIS.

Case of a healthy married woman who took a strange child to nurse in addition to her own. The strange child proved to be syphilitic. The woman had an ulcer on the breast, followed by a well-marked general syphlitic eruption (see figure).

## Plate XXIII.

## SECONDARY SYPHILITIC ERUPTIONS AND ULCERATIONS.

From some peculiarity in the patient's constitution, or from some want of power in carrying out the natural processes of the disease, the syphilitic eruption may be accompanied by an effusion of serum only.

The diseases thus produced have received a variety of names, according as they have resembled other diseases of the skin. Thus we have described syphilitic turpes, syphilitic eczema, the varicelloid syphilitic eruption, the impetiginous syphilitic eczema, etc.; these are all accidental modifications, and do not require any separate or distinct mode of treatment.-Holmes.


## Plate XXIV.

## SECONDARY SYPHILIS.

## Plate XXV.

ANATOMY.

Bloodvessels of the Female Pelvis (side view).-Bourgery and Facob.
Explanation.-ut, Uterus; $u t v$, uterine artery; $B$, bladder; $V g$, vagina.

## Plate XXVI.

## ANATOMY.

Bloodvessels of Pelvis (front view).-Bourgery and facob.- This plate represents the anterior part of the bony pelvis as having been removed, the top of the bladder cut away, as also part of the anterior vaginal wall. a o, The abdominal aorta dividing into the common iliacs, and then again into the external and internal iliacs ; $B$, bladder; $r$, rectum ; $u t$, anterior surface of uterus; $f t$, fallopian tube; $C$, cervix uteri (vaginal portion); $g$, corpus cavernosum of clitoris; $r l$, round ligament; $u t r$, uterine artery crossing the ureter, $u ; V$, vagina.

In this pelvis the uterus is drawn up, and the fallopian tubes attached to the iliac fossa in order to show themí.


## Plate XXVII. <br> OPERATIONS FOR PROLAPSE OF THE WOMB AND UTERINE POLYPI.

Figure 1.-Prolapse of the Uterus and Vagina.- $u$, Meatus; $l$, $l$, labia majora; $a$, vagina drawn outwards by the uterus between the labia majora; the mouth of the uterus, $b$, is seen externally; $p$, the anus.

Figure 2.- Obliteration of the Vagina.- A,Vagina prolapsed; $b$, mouth of the uterus ; $p$, anus ; $l, l$, labia; $u$, meatus ; $s, s$, internal surface of the labia majora pared at the level of the vaginal orifice; $c, c, c$, loops of suture which traverse the labia at the level of the pared portion, and of which the ends, $d, d, d$, are seen on the opposite side.

Figure 3.-Operation Completed.- $l$ l, $l$, Anterior portion of the labia majora; $p$, anus; $B, B$, quills engaged on the one side in the
loops of the sutures, $c, c, c$, and over which, on the other side, the ends, $d, d, d$, are tied.

Figure 4.-Ligature of a Polypus.-a, Polypus; b, gorget held by an assistant to separate the polypus from the vaginal wall, and help the action of vulsellum forceps, $d$, and at the same time to facilitate the passage of the ligature, carried round the pedicle, $c$, by the knot fastener; $u$, the meatus urinarius; $b$, fingers of an assistant ; $p$, anus.

Figure 5.-Excision of a Polypus.-a, Polypus; $p$, anus; $l, l$, labia separated by an assistant, $b, b ; u$, meatus; $t, t$, tenaculum forceps which draw upon the polypus, the pedicle of which is partly cut through by strong scissors.-Norton.


## Plate XXVIII.

Figure r.-Pediculated Polypi.-Boivin et Duges.
Figure 2.- Fissure of os uteri.
Figure 3.-Vesicular polypi.


## Plate XXIX.

## INVERSION OF THE UTERUS.

This dangerous but not very frequent form of displacement consists in the turning of the uterus inside out As the bottom of a bag may be pushed through its mouth so that the inner surface becomes the outer, so may that of the uterus, and the occurrence of such an accident constitutes the condition which is here portrayed.

The causes of this condition are -
First.- Relaxation and inertia of the uterine walls.
Second.- Downward traction or pressure. Should inversion occur suddenly, as after delivery, the patient will complain of discomfort about the vulva, with faintness and nervous disturbance. Hemorrhage and tendency to collapse will show themselves, and unless proper treatment be adopted at an early period, death may ensue. The treatment should be to first control the hemorrhage by hemostatic means, and then reduce the inversion by taxis and elastic vaginal pressure.-Thomas.


## Plate XXX.

Cancer of the uterus, posterior vaginal wall and rectum.-Boivin and Duges.





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