2025

Emergency Abdominal surgery.

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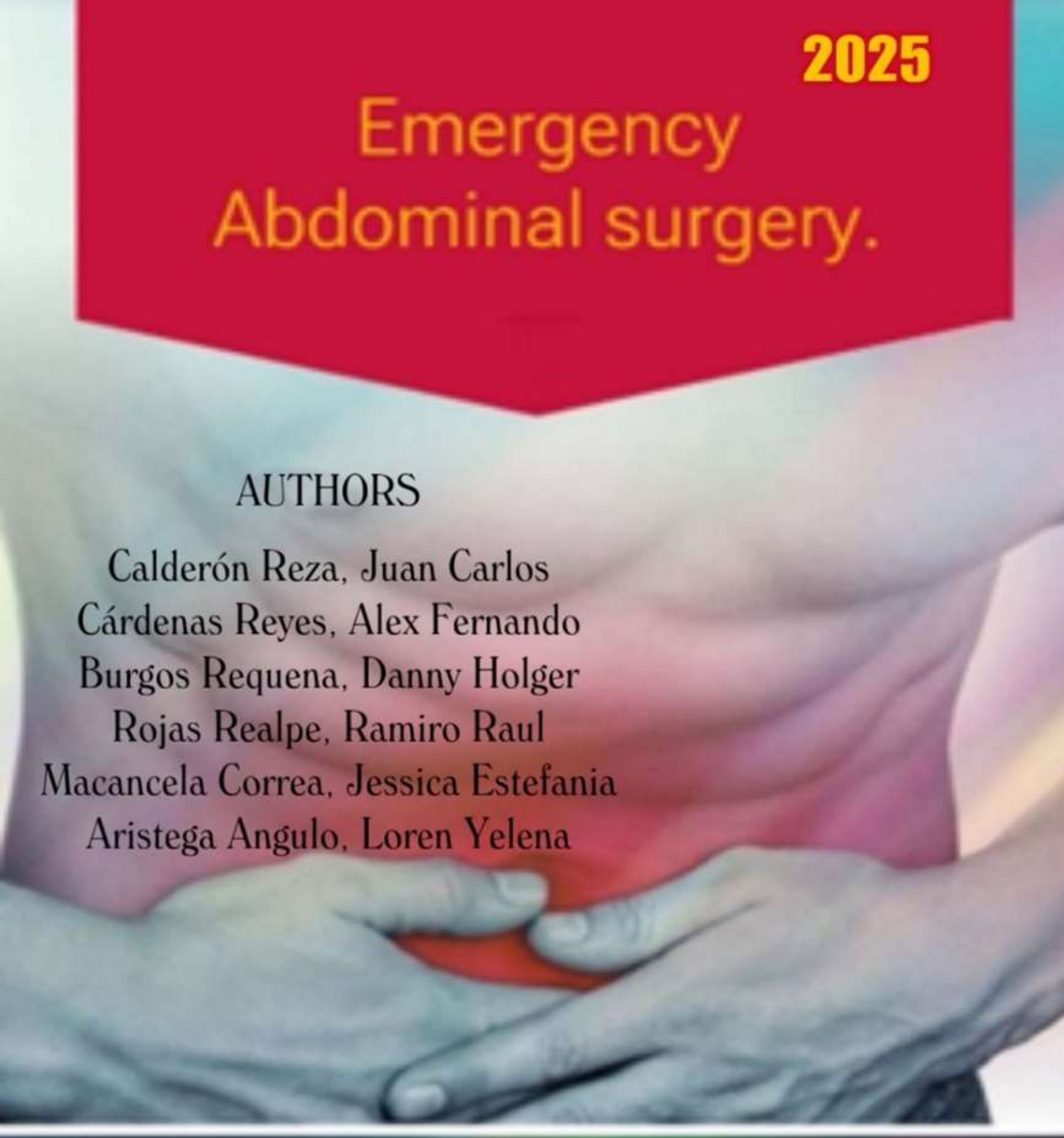

ISBN: 978-9942-7371-6-8

9 789942 737168

From Spanish ISBN 978-9942-40-233-2
Year 2021

2025

GRUPO EDITORIAL
NACIONES

EMERGENCY ABDOMINAL SURGERY.

Descriptors: Book of Medicine, Public Health, Anesthesiology.

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Validated by blind pairs.

Edited by Grupo Editorial Naciones

Design: Grupo Editorial Naciones

https://doi.org/10.16921/Naciones.87

ISBN: 9789942737168

Guayaquil- Ecuador 2025

Thanks

Thanks to all the people who are part of this medical literary copy for the delight of those who love surgery.

Dedication

This work is dedicated to God and all those who made this possible primarily to my parents and friends.

Foreword

Once finished this medical literary work we can say that for a success in the surgical field it is absolutely fundamental to know the anatomy by regions in a rigorous way as it manifests in chapter 1

We had the courage to include a chapter in which is of great interest worldwide because it is an asymptomatic and silent pandemic since the rate of infarctions worldwide is very high and that is why it manifests in chapter 2

To conclude, it is very welcome that you read the following chapters and delight in the surgical field and know that they must be legally covered in each proceeding.

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EMERGENCY ABDOMINAL SURGERY

Summary:

Now that this medical literature has been completed, we can say that rigorous knowledge of regional anatomy, as outlined in the first chapter, is absolutely essential for success in the field of surgery.
We took the liberty of including a chapter of great global interest, which discusses asymptomatic and silent pandemics such as heart attacks, which are very common worldwide.

Keywords: Surgery, abdomen, emergency, laparotomy

Table of contents

Chapter 1
Abdominal Anatomy

The description of the region topography of the abdomen this between the following structures:

- Top view: Diaphragm
- Lower view: Upper pelvic orifice
- Posterior View: Thoracolumbar vertebrae, musculo-tendinous - aponeurotic structures and iliac edge
- Previous View: Antero-lateral wall of the abdomen

Abdominal referential planes

These location determinants include:

- Abdominal Regions
- Abdominal quadrants

Abdominal regions

The location of structures shall be as follows:

- Epigastrium
- Hypochondrium Right
- Left hypochondrium
- Right inguinal region
- Left inguinal region

- Pubic region
- Umbilical Region

Abdominal quadrants

Their names are as follows:

- Upper right quadrant
- Upper left quadrant
- Lower right quadrant
- Lower left quadrant

Upper right quadrant

This term includes the following structures:

- Right lobe of the liver
- Gallbladder
- Pyloric antrum
- 1st, 2nd and 3rd portion of duodenum
- Head of the pancreas
- Right adrenal gland
- Right kidney
- Hepatic angle of the colon
- Upper portion of the ascending colon
- Right half of transverse colon

Upper left quadrant

This term includes the following structures:

- Left lobe of the liver
- Spleen
- Portion of major curvature of stomach
- Yeyuno and ileum proximal
- Body and tail of pancreas
- Left adrenal gland
- Left kidney
- Splenic angle of the colon
- Left half of transverse colon
- Upper portion of the descending colon

Lower right quadrant

This term includes the following structures:

- Blind
- Vermiform Appendix
- Ileon in greater proportion
- Lower portion of the ascending colon
- Right ovary
- Fallopian tube right
- Right ureter
- Right spermatic cord
- Uterus
- Urinary bladder with its reservoir at the limit

Lower left quadrant

This term includes the following structures:

- Colon sigmoides
- Lower portion of the descending colon
- Left ovary
- Fallopian tube left
- Left ureter
- Uterus
- Urinary bladder with its reservoir at the limit

Muscles of the anterolateral wall of the abdomen

- External abdominal oblique: This has its origin muscle-aponeurotic in the ribs 5th and 12th as well as having an insertion in the line alba, tuber of the pubis and half anterior of the iliac crest, as soon as its innervation is carried out by the 7th thoracic nerve up to the 11th and subcostal nerves, its function is determined by the compression and support of the abdominal viscera added to the rotation and flexion of the trunk
- Oblique inner abdomen: This has an origin in the iliac crest in the anterior 2 thirds attached to the thoracolumbar fascia and the inguinal ligament by means of muscle fibers - aponeurotic, has extensions towards the ribs 10th - 11th and 12th in addition to reaching the alba line together with the tendon together properly said they reach the pecten of the pubic. It is innervated by the thoracoabdominal nerves in its anterior branches from T6 to T12 and the first anterior nerves of the lumbar roots. It has the function of compressing and supporting the abdominal viscera.
- Transverse of the abdomen: This has an origin in the iliac ridges thoracolumbar fascia, deep roots of the inguinal ligament and the

internal veneers of the costal cartilage from 7th to 12th.
It has extensions to the line alba, internal oblique, pecten and crest of the pubic bone. This is innervated by the previous branches of the thoracoabdominal nerves from T6 to T12 accompanied by the anterior branches of the first lumbar nerves. This also has the function of compressing and supporting the organs in the abdominal region.

- Rectum of the abdomen: this has its origin crest and symphysis of the pubis with muscular - aponeurotic extensions towards the xiphoid process and costal cartilage from the 5th to the 7th, its innervation is given by the anterior thoracoabdominal branches of the spinal nerves T6 to T12. In terms of its functions it controls antilordosis, compresses the abdominal viscera and flexes the trunk.

Arterial vessels of the muscle region - aponeurotic of the abdomen this has its origin from the internal thoracic artery branch of the subclavian artery where it passes through the costal arch distributed by the abdominal wall in its surface and depth in the area of the hypochondria and the diaphragm in its front and side portion

Superior epigastric artery: This has its origin in the internal thoracic artery through which emerges a path along the straight muscle of the abdomen, its vascular territory are the epigastric and upper umbilical portions.

Posterior intercostal arteries: these are born of the aorta going down through the regions of the internal oblique and transverse abdominal, their area of distribution is the lumbar region and the area of the flanks.

Subcostal artery: like the posterior intercostals is born of the aorta surging to the transverse abdomen and the internal oblique

of the right and left flanks as well as the lumbar mass.

Inferior epigastric artery: this has its origin in the external iliac artery that is the bifurcation of the abdominal aorta being its projection the muscular and aponeurotic mass the straight muscle of the abdomen passing through the pubic and lower umbilical regions.

Deep iliac circumflea artery: this has its origin in the external iliac produced by the emission of the 2 branches of the abdominal aorta so that its route will be the inguinal ligament and the deep part of the rectus abdominis muscle, its location shall be determined in the regions of the iliac muscle, inguinal region and iliac fossa.

Superficial iliac circumflex artery: this has its origin from the femoral artery which is nothing more than the continuation of the external iliac artery that goes along the inguinal ligament marking its distribution in the superficial inguinal region as well as the anterior region of the thigh.

Superficial epigastric artery: this is one of the collateral of the femoral artery that runs through the subcutaneous cellular tissue of the mesogastrium vascularizing the lower umbilical and pubic regions.

Innervation of the abdominal musculo-aponeurotic region

The following set of nerves will be detailed as follows:

- Ilioinguinal nerve: it is a terminal branch of the anterior root of L1 e

the adductors and lower portions of the internal oblique and transverse abdominal.

- Iliohypogastric nerve: This is a terminal branch of the anterior extension of the L1 spinal nerve, its innervation being the skin of the internal oblique, transverse abdomen inguinal region, hypogastric and iliac crest.
- Subcostal Nerve: this is the nerve produced by the anterior extension of the spinal nerve T12 which is responsible for bringing synapses to the muscles of the anterolateral wall of the abdomen skin above the iliac crest.
- Lateral Cutaneous Nerves: product of the nerve extension of the previous branches T7 to T9 this is responsible for the innervation of the region of the right and left hypochondria.
- Thoracoabdominal nerves: It is the lower extension of the intercostal nerves 7mo to 11mo takes care of the synapse of the anterolateral wall of the abdomen and suprayacent skin.

It should be noted that these nerves follow an embryological distribution which shows the location of the affected nerve when there is a underlying pathology.

Inguinal duct

This region of the lower part of the anterolateral wall of the abdomen in number 2 being as follows:

- Left inguinal canal
- Right inguinal canal

Of which these owe its structure to the descent of the testicles in the fetal life so it is a virtual structure that becomes real at the moment it is violated in one of its structures by some anatomical structural pathology.

The study is divided into four parts:

- Posterior wall: transverse fascia that is part of the deep inguinal ring that forms projections with the joint tendon and reflex inguinal ligament being these formers of the superficial inguinal ring.
- Anterior wall: it is formed by the lateral pillar of aponeurotic fascia of the external oblique plus the muscular portion of the internal oblique that are part of the deep inguinal ring in addition to forming the superficial inguinal ring the intercrural fibers that come from the external aponeurosis, so that the fascia of the external oblique muscle is transformed into external sperm fascia.
- Upper wall: also formed by the transverse fascia in its deep inguinal ring and superficial inguinal ring that is formed by the external oblique in its medial portion
- Floor: it is formed by the iliopubic tract in its portion of the deep inguinal ring and the lacunar ligament forming the superficial inguinal ring.

Spermatic cord

It is nothing more than the extension of the structures of the deep inguinal ring next to important structures like:

- Vas deferens: this duct is responsible for the transport of sperm at the time of ejaculation reflex with a length of 45 cm and its nature is muscular.
- Testicular artery: is a terminal branch of the abdominal aorta that will be responsible for the irrigation of the testicles and epididymis.
- Cremasteric artery: that originates from the inferior epigastric artery
- Pampiniform venous plexus: is a set of veins that find themselves and end in right and left testicular vein
- Sympathetic nerve fibers: these run through the arteries and over the vas deferens follow the path of the sympathetic and parasympathetic fibers on itself.
- Genital nerve: branch of the genitofemoral nerve that is responsible for the innervation of the cremaster muscle
- Lymphatic vessels: those that drain the testicles into the lumbar lymph nodes.
- Vaginal process is nothing more than a fibrous vestige that can be detectable as not too.

On your continent we have the following structures:

- Internal sperm fascia: from the transverse fascia
- Cremasteric fascia: this is the product of the internal oblique muscle
- External sperm fascia: derived from the external oblique

Scrotum

This structure is a reservoir of the testicles being formed by skin and a covering called Dartos composed by smooth muscle, the which is divided by a scrotal septum

In addition to forming a structural continuation with the Colles fascia and the Scarpa fascia, its consistency gives it the smooth muscle that are called as labioescrotal prominences that for physiological reasons this contracts or relaxes in climate changes.

The irrigation of the scrotum is given by the internal pudenda artery, femoral and inferior epigastric artery that through its terminal branches are responsible for the vascularization of this structure.

The innervation of the scrotum is given by the following nerves:

- Genitofemoral
- Pudendo
- Posterior femoral skin

Testicles

They are structures that take care of spermatogenesis producing multi potential cells that are suspended over gravity due to the sperm cord.

The structures that comprise this noble body are as follows:

- Tunica albuginea
- Túnica vaginal

- Sinus of epididymis
- Testicular mediastinum
- Testicular arteries
- Plexo venoso pampiniforme
- Right testicular vein
- Left testicular vein
- Testicular nervous plexus

Epididymis

This is formed by ducts from which come draining the spermatozoa of the efferent ducts which is divided into 3 parts:

- Head
- Body
- Tail

Peritoneum and its structures

It is understood by peritoneal cavity to the space in which this organ called peritoneum envelops the abdominal viscera mostly by which it contains the following structures:

- Mesentery: is a double layer of peritoneum that has extensions called transverse and sigmoid mesocolon in this has a sheath of connective tissue in which it houses blood vessels, lymph, nerves, fat and lymph nodes
- Epiplon major: this hangs as a cover over most

the intestines making fixations on the curvature greater than the
stomach and transverse colon.

of the liver, the minor curvature of the stomach and the proximal portion of the duodenum.

There are a number of replicas referred to below:

- Ligamento falciforme
- Hepatogastric ligament
- Ligamento hepatoduodenal
- Ligamento gastrofrenico
- Gastrosplenic ligament
- Ligamento gastrocolic

These fulfill their function of connecting organs in the abdominal cavity, among other peritoneum qualities is to move and encapsulate the structure affects when there is some infectious inflammatory process.

Esophagus

It is a muscle membranoso tube of approximately 25cm in length where its cavity is virtual as they pass the food becomes real.

This organ has 3 constrictions that are at the following anatomical levels:

- Upper esophageal sphincter
- Bronchoaortic narrowing
- Lower esophageal sphincter

Irrigation of the esophagus is given by the following vessels:
Left gastric artery

- Left inferior phrenic artery
- Internal thoracic artery
- Thoracic aortic artery

The veins are formed by the esophageal veins proper that drain in the acigous vein, as lymphatic vessels these drain in the left gastric lymph nodes and celiac lymph nodes.

The innervation is formed by the esophageal plexus made up of:

- The vagus nerve
- Sympathetic thoracic nerves
- Periarterial nerve plexus
- Splenic nerves

Stomach

It is an organ made up of layers of mucosa, muscular and serous which is in charge of converting the food bolus into quimo this has a capacity of 2 to 3 liters of food.

Its dimensional structure has the following names:

- Cardias; consists of smooth muscle is at the level of 6th costal cartilage at T11 level ahead.
- Bottom: is the region of the stomach that is dilated in relation to the diaphragm in its left portion, in supination it has the reference of the 6th left rib
- Body: this is nothing more than the transition between the bottom and the pyloric antrum
- Pyloric portion: has a funnel shape that ends in the pyloric duct.
- Pylorus: made up of smooth muscle and is the continuation of the pyloric duct from which it is responsible for the evacuation of the chyme towards the 1st portion of the duodenum.
- Major curvature: convex passes at the level of the 5th intercostal space then passes through the 9th and 10th left costal cartilage.
- Curvaturamenor: it has one formacóncava that presents an angular cleavage which is the union between the body and the piloric portion.

The anatomical relationships of the stomach are as follows:

- Bottom view: epiplone major, transverse colon
- Left side view: diagram and part of the major epiplon
- Right side view: lower liver, gastrohepatic and gastroduodenal ligaments
- Top view: diaphragmatic hiatus, left diaphragmatic dome
- Rear view: aorta with its celiac trunk, pancreas and left kidney.

The irrigation of this organ is given by the following vessels:

- Right gastric artery
- Left gastric artery
- Right gastroomental artery
- Left gastroomental artery
- Short gastric arteries
- Posterior gastric artery

Lymph drains in the following reservoirs:

- Gastric lymph nodes
- Pancreatospheric lymph nodes
- Pyloric lymph nodes
- Pancreatoduodenal lymph nodes

The synapse of the stomach is given by:

- Anterior vagal trunk: this is extension of the left vagus nerve has a route through the minor curvature of the stomach giving branches to the liver and duodenum as an attachment.
- Posterior vagal trunk: is the extension of the right vagus nerve that has a direction determined by the minor curvature where it gives branches to the back and anterior part of the stomach emitting a synaptic connection towards the celiac plexus
- Splenic nerve: it is responsible for sympathetic innervation being the parasympathetic vagus nerve.

Small intestine

This one has 3

- Duodenum
- Yeyuno
- Ileum

Duodenum

This has a C-shape transforming the chyme into kilo with a length of approximately 25 cm where its beginning is at the level of the ending in the Treitz fascia at the union dudodenoyeyunal being its topographical reference the vertebra L2.

In terms of their structure, we have the following divisions:

- 1st Portion: this has the feature that is preperitoneal and referentially located at L1 level
- 2nd Serving: this is the longest serving and its abdominal feature is that it is retroperitoneal in addition to being at the height of the vertebrae L1 to L3 having a downward direction.
- 3rd portion: is located at the level of the 3rd lumbar vertebra having a horizontal direction
- 4th portion: this has an ascending direction being in relation to the vertebrae L2 and L3

As for the structures of its route we have the following:

- Blister of Toilet or major duodenal papilla: having a location at the height of the 2nd portion of the duodenum is the outlet base of the main pancreatic duct.
- Hepatoduodenal ligament: peritoneal reference component that has under its covers the gallbladder and the underside of the liver.
- Bulboduodenal: this is the continuation of pylorus is a mobile component being the initial 2cm of the 1st portion of the duodenum
- Oddi's sphincter: portion of smooth muscle surrounding the major duodenal papilla regulating the outflow of bile and its hormonal as well as enzymatic components thus having the base of the main pancreatic duct or Wirsung and the accessory pancreatic called Santorini.

Duodenal irrigation is represented by the following vessels:

- Gastroduodenal artery
- Superior pancreaticoduodenal artery
- Inferior pancreaticoduodenal artery

As for venous drainage is given by the duodenal veins that flow into the hepatic portal vein on the other hand the lymph gathers in:

- Upper lymph nodes
- Coeliac lymph nodes

Nerves are represented by the vagus nerve and esplácnicostantomayorymenorteniendoendounextensionesperiarteriales in the form of plexuses in relation to pancreatoduodenal arteries.

Yeyuno íleon

The jejunum has its beginning at the level of the angle of Treid or duodenum flexure yeyunal ending in the ileum and this in turn draining in the ileocecal union.

In vivo anatomical differentiation of the jejunum is determined by the following characteristics:

- The yeyuno has a dark red appearance unlike the ilion which is pink with low tone
- The diameter of the jejunum is 2- 4 cm being similar to the ileum of 2 -3 cm of transverse length.
- The consistency of the jejunum is strong and thick while that of the ileum is thin and light.
- Irrigation is more pronounced in the yeyuno than in the ileum
- Arterial anastomoses that are emitted from the superior mesenteric artery in the jejunum are longer than in the ileum and are called straight vessels.
- The adipose tissue of the mesentery is lower in the jejunum than in the ileum

The irrigation of the jejunum and ileum is given by the superior mesenteric artery that rises from the abdominal aorta below the celiac trunk emitting about 15 to 16 terminal branches performing anastomosis

arterial at the whole extent of the jejunum and ileum with arteries called straight vessels.

The evacuation of lymph is determined by the chiliferous vessels at the level of the intestinal villi which then flow into lymphatic plexuses and finally drain into the following structures:

- Juxtaintestinal lymph nodes
- Upper central nodes
- Mesenteric lymph nodes

The innervation is identified by the following extensions nervous:

- Vagal trunk
- Major and minor splenic nerves
- Celiac ganglion
- Superior mesenteric ganglion

Large intestine

This digestive tract structure is designed to perform the following functions:

- Convert chyme into faecal stools
- Regulate the excretion produced by the digestive tract
- Storage and drainage of feces according to principle of Pavlov's reflection

The large intestine consists of:

- The vermiform appendix
- Colon ascending; transverse, descending and sigmoid
- Anal duct

The differential characteristics of the large intestine are as follows:

- Appendices omentales
- You had colic thus having the meso, omental and free
- Haustras

Blind and vermiform appendage

The cecum is a transitional sacular structure between the ileum and the ascending colon with a transverse diameter of approximately 7.5 cm in length

The blind in relation to anatomical structures as the inguinal region is approximately 2,5cm and is usually palpable when it is distended through the anterolateral wall of the abdomen and as an abdominal organ is intraperitoneal have peritoneal connections called cecal folds that are responsible for keeping it fixed and mobile at once.

The ileocecal valve consists of the following parts:

- Ileal hole
- Ileocolic lips
- Braces for the ileal hole
- Papila ileal

The vermiform appendage is a longitudinal extension of the caecum in the caudal direction being firm by the peritoneum called meso appendix with a length of approximately 6 to 10 cm with lymphatic content inside, the most frequent variety as for its position is retroecal

The irrigation of these organs is centralized by the collateral iliocolic artery of the superior mesenteric artery just as the venous drainage is given by the iliocolic vein

The lymph is in centripetal direction towards the mesoapendicular nodules and ileocolic lymph nodes which are to be evacuated towards the inferior mesenteric lymph nodes.

Innervation is determined by the superior mesenteric sympathetic and parasympathetic nerve plexus

Colon

This part of the digestive tract is formed as follows:

- Ascending
- Transverso
- Descendente
- Sigmoides

The ascending colon is topographically at level of:

- Right iliac fossa
- Right flank
- Right hypochondrium

Forming at the level of the lower side of the liver the right colic flexure or also called hepatic flexure the most transcendental anatomical relations of the colon is that in front is the major omentum and behind the iliac crest and iliolumbar mass having the anatomical object in supine cube.

The irrigation of the ascending colon is given by:

- The iliocolic artery
- The right colic
- The right branch of the middle colic

The venous drainage is given by the right colic vein and the lymphatic by the following reservoirs:

- Epicolic lymph nodes
- Paracolic lymph nodes
- Right colic lymph nodes

The transverse colon is at the limit of the right colic flexure and the left colic flexure or also called splenic therefore has important structures that can be highlighted:

- Frenocolic ligament: takes care of the anatomical union with the diaphragm
- Transverse mesocolon: peritoneal extension of the mesentery
- Root of transverse mesocolon: this hangs topographically up to the navel

The vascularization of this colonic segment is given by anastomosis of the following vessels:

- Middle colic artery
- Left colic artery

Venous drainage occurs through the superior mesenteric vein and the lymph nodes through the middle colic lymph nodes.

Transverse colonic innervation begins through the superior mesenteric nerve plexus

The descending colon has a beginning in the splenic flexure and ends in the sigmoid colon topographically located at the level of these structures:

- Left iliac fossa
- Left flank
- Left hypochondrium

The anatomical relationships of the descending colon in a supine patient are:

- Rear view: spleen
- Front view: ilion
- Top view: anterolateral wall of the abdomen
- Lower view: left kidney and left ureter

Vascularization is determined by the following vessels:

- Sigmoid arteries
- Left colic artery

Chapter 2
Metabolic syndrome and its surgical resolution

To start this surgical section we must call and describe the main acapites of the metabolic syndrome of which are:

- Type II diabetes mellitus
- Lowering of glucose threshold
- Fatty acid disorders
- Essential hypertension

According to physiopathology the most accepted hypotheses about the occurrence of this syndrome are as follows:

- Impaired insulin uptake by the liver
- Systemic hyperinsulinemia
- Tissue resistance to insulin
- Increased production of ghrelin

The National Institutes of Health Consensus Conference determined that only 3% of morbidly obese people with a body mass index equal to or greater than 35 kg/m2 can lose their extra pounds so surgical intervention as such is the gold standard for treatment of this pathology

Once the possible origin of this disease has been established, it is a global pandemic makes clear its surgical indications:

- Body mass index greater than 40kg/m2 and greater than 35kg/m2 with co-morbidities.
- Failed dietary treatment
- Type II diabetes mellitus
- Psychological stability
- Clear information about the surgery and all its components for the patient
- Diseases that do not compromise the failure of surgery

The personnel qualified for this surgical procedure are
The following:

- Surgeon with optimal skills in metabolic surgery
- Surgical assistant with attitudes in metabolic surgery
- Nutritionist
- Anestesióloga
- Surgical nurse
- Surgical nursing assistant
- Psychiatrist/ psychologist
- Cardiologist
- Endocrinóloga

Preoperative evaluation

The following patterns should be initiated:

- Consultation with a nutritionist
- Provide surgical information to the patient so that they are aware of what is going to be done
- Medical consultation with bariatric surgeon
- Issue of laboratory tests
- Mental assessment by psychiatry or psychology
- Have the documents in order to proceed with the surgery
- Upper abdominal and pelvic ultrasound
- Setting the date of metabolic surgery
- Preoperative evaluation with the anesthesiologist

Mechanism of action of types of bariatric surgery

The most established techniques for metabolic surgery are:

- Adjustable gastric band
- Gastric bypass with Y of Roux
- Biliopancreatic bypass
- Duodenal crossing

Surgery with adjustable gastric band

- The only one approved by the Food and drug administration is the LAP-BAND
- The technique Pars flácida is the favorite to enhance the gastric band adjustable
- The surgeon should be well guided by the anatomical relationships of the lower esophagus

- The adjustable band is placed by touching 15 mm positioned on the
  right upper quadrant by which the band is anchored and
- It is always reliable to place the adjustable band at union level gastro-esophageal being within 1 cm of it.
- The silastic tube is sent through the 15mm trocar thus rendering the laparoscopic part
- A dilation of the trocar hole is made to show the
  anterior rectal fascia
- We make 4 sutures by means of the holes of the trocares knotting the port of the fascia

Gastric bypass surgery in Y de Roux

- The 1st trocar is placed at the left subcostal region level
- An optical trocar is used for duct dilation under primary visualization
- The laparoscopy visualization of the other trocars is direct since the 1st trocar was introduced optically.
- Identification of the doudenoyeyunal angle is essential
- Coming soon the mesentery is divided with a harmonic scalpel denoting the proximal end of the Roux branch
- In addition to this is performed a suture for minimum drainage of Penrose about 5cm
- The length of Roux's handle varies according to body mass index so it has lengths from 80, 120 and 150cm
- Roux's loop is wound in the cephalic direction of the transverse colon mesentery

- This surgical technique allows the proximal jejunum to align with the portion of Roux's Y realized.
- The use of the stapler is essential to perform anastomosis distal vascular
- In addition to the use of vascular staples, it is used for enterotomies created in each intestinal segment
- Once the staples are finished, a simple flat suture is performed.
- Then the closure of the mesenteric defect is performed with continuous non-absorbable suture.
- The most common route is retrogastric retrocolic due to the smaller length between the small intestine and gastric sac which decreases tension in enteric anastomoses
- Roux's Y is a decreased proximal gastric sac
- The Y of Roux is built with the cardias because it must be reduced the production of hydrochloric acid and avoid dilatations of the same
- Roux's Y should have a length of separation from the stomach approximately plus or minus 75cm
- There must be an enterostomy to prevent stenosis and intestinal obstruction
- All spaces of the mesenteric peritoneum must be taken into account to avoid peritoneal hernias and thus prevent the patient from risking his life
- The laparoscopic opening of the transverse mesocolon facilitates the view of the greater curvature of the stomach
- Penrose's drain should always go to the one that raises the stomach that is attached to Roux's handle

- The patient's collation in inverted Tredelemburg position is essential for manoeuvring the left hepatic lobe
- The use of ultrasound scalpel serves to separate the peritoneum is between the gastroesophageal junction and the top of the spleen.
- At the height of the minor epiplone, the blue light of the linear stapler is used to create a gastric reservoir of approximately 15 ml to 10 ml with a lower face in the minor curvature of the stomach.
- The use of drainage once the gastric sac is inserted into the Y of Roux adjacent to the proximal gastric reservoir
- Then the linear stapler is used to create a proximal anastomosis, once created its defect is closed and rubbed with saline solution at 0.9% the recent anastomosis
- Then the Y of Roux is inspected with an atraumatic intestinal clamp of 10mm which visualizes some air leak and therefore be able to close it in time
- To finish the surgical intervention it is essential to realize of the peritoneal defects and close them all completely
- One of the hernial defects that is usually corrected is the one between the Y of Roux and the proximal jejunum

Biliopancreatic bypass bariatric surgery

This technique has the characteristic of enhancing the quality of bad absorption being the following substances linked to the loss of which are:

- Fatty acids
- Proteins

The mechanisms of this surgical intervention are detailed following:

- A small common duct is made in the distal 50 cm of the ileum for the absorption of fatty acids and amino acids
- So that the transformation of the modified digestive tract makes only the approximate 200 cm distal to the ileum remains
- The proximal ileum anastomosis is attached to the stomach at a length of approximately 50 to 100cm from the papillae of the ileocecal valve
- The terminal ileum and the blind are located to start the surgery
- A suture is placed approximately 50cm from the terminal ileum
- Once the previous step is done, the ileum is cut off 200cm from the first reference point
- The intestinal handle that will perform the digestive function may have a total length of 200cm or more
- The next step is to perform a distal gastrectomy
- It is then sectioned and stapled to the end of the duodenum at pilgrim
- Gastric volume adjustment ranges from 150ml to 250ml depending on body mass index
- Anastomosis of the terminal ileum 200cm long to the posterior surface of the stomach, this allows to avoid twisting of the intestine in gastro-ileostomy.

Bariatric surgery by duodenal crossing

This technology has a resemblance to bypass surgery

biliopancreatic so the mechanism is similar in terms of malabsorption

The surgical intervention as such will be detailed below and are the following steps:

- As the measurement of the followed terminal ileum is performed appendicectomy
- The fundamental characteristic of the difference between biliopancreatic bypass surgery and duodenal crossing is proximal anatomy and gastrectomy
- The characteristic step is vertical gastroplasty of a major curvature of a stomach
- The stapling in the vertical gastrectomy goes from the middle of the stomach parallel to the minor curvature of the stomach.
- As the respective stapling is done, the Maloney French 60 dilator is used to prevent stenosis.
- Then the duodenum section is performed with the stapler 2cm in front of the pylorus.
- The distal anastomosis is performed at a point about 100cm near the ileocecal valve.
- The procedure performed is a duodenoileostomy called duodenoenterostomy terminus antecolic.

Post-operative measures

Below, we will detail the decisions to be made on the patient's exit from the operating room so they are as follows:

- Monitor the symptomatology of the patient that has to do with leakage
  digestive

  an enterotomy is tachypnea, agitation and tachycardia.
- The optimal fluid replenishment facilitates immediate mediate and late postoperative, sometimes using 6 to 10 liters of crystalloids
- The replacement of ringer lactate at a dose of approximately 500ml/h is ideal as long as the patient has a positive urinary output
- On the 1st day after surgery, urethral catheterization is performed to perform the hydroelectrolyte balance
- The detection of an abdominal problem resulting from surgery is oliguria and tachycardia therefore it is always essential to measure the hydroelectrolyte balance always
- One measure that can never be missed is the prevention of Pulmonary thromboembolism
- Medical discharge is given when the patient can move, tolerates liquid diet and no fever as an inflammatory reaction
- The objective is to make the patient lose 1 a2kg/week
- Weight loss occurs as months pass usually 12 to 18 of them

Results in adjustable gastric band surgery

The following are the relevant guidelines of this surgical technique:

- The estimated duration of surgery since the first trocar is placed is approximately 1 hour.

- The number of such hospital admissions is approximately 24 hours after the surgery
- The use of saline solution according to weight loss is fundamental, be it maximum or minimum.
- Laparoscopy with adjustable gastric band has been shown to resolve type II diabetes mellitus
- Components of metabolic syndrome such as essential hypertension, fatty acid disorders, insomnia, gastroesophageal reflux and venous stasis along with sleep apnea improved significantly.

Results in gastric bypass surgery at Y de Roux

The following are the relevant guidelines of this surgical technique:

- Recovery is prompt due to laparoscopic incisions
- Another benefit that is greatly diminished is the complication of peritoneal hernias and intestinal obstruction
- Meta-analytical studies were conducted and it was found that glycosylated hemoglobin decreased by a very high percentage within the sample of patients
- Therefore this surgical technique is preferred to solve the life of patients with type II diabetes mellitus
- Like diabetes, the other comorbidities of metabolic syndrome were also largely resolved

Results of biliopancreatic bypass surgery and duodenal crossing

The following are the relevant
this surgical technique:

- Duodenal crossing and biliopancreatic bypass surgery is presented as an effective alternative to the facts of comorbidities and morbid obesity
- The rigour of follow-up after surgery consists in taking vitamin supplements between these calcium, fat-soluble vitamin as A,D and K

Adverse events resulting from the surgery are as follows:

- Pneumonia
- Atelectasis
- Respiratory failure
- Infection of the wound
- Hernia
- Splenic lesion
- Surgical reintervention
- Pulmonary thromboembilism
- Enteric stenosis
- Enteric leak from anastomoses

The complications of Roux's Y surgery are as follows:

- Mortality ranging from 0.9% to 0.5%
- Digestive hemorrhages near 2%

- Enteric leakage in about 3
- Major wound complications in about 3%

The complications of biliopancreatic bypass surgery and duodenal crossing are as follows.

- Mortality from 0.7% to 0.9%
- Enteric leakage from 0.1% to 1.8%
- Pulmonary embolism and deep vein thrombosis less than 0.07%
- 40% iron deficiency anemia
- Vitamin A deficiency of 69%
- Vitamin K deficiency in 68%
- Vitamin D deficiency of 63%

Conclusions

- Metabolic surgery is the gold standard treatment for morbid obesity and its comorbidities
- A multidisciplinary medical team is needed for optimal results
- Mental health as such should be assessed in pre-surgical examinations as well as in the approximate post-operative follow-up of about 12 months after surgery.

Chapter 3

Colon and rectum

The colon and rectum as such are terminal organs of the tube digestive that are responsible for the evacuation of all waste entering by mouth so their surgical study at present will remain a challenge because of the number of pathologies that are still in constant meta-analysis.

Pre-surgical assessment and preparation for elective surgery

We will detail the following acapites:

- The decrease in the bacterial load of the colon has been a beginning since this type of surgery began to be performed
- For this we must take into account which are the commensal bacteria that inhabit the colon and have achieved a symbiosis with it
- The bacteroides fragilis representing anaerobic bacteria, escherichia coli within aerobias, in addition to these we have other symbiotic germs such as proteus mirabilis, pseudomona, enterococci and another class of streptococci.
- The inadequate colonic cleaning brings with it the failure of each of the enteric anastomoses performed and with this serious septic tables in which the life of the patient may be endangered
- The fact of farm cleaning is raised in some countries

a video-endoscopy of the colon or an enema of the itself as such

- The use of antibiotic therapy as an aseptic rule 60 min before the surgery predisposes to a surgical success avoiding the infectious pictures more frequently in which it is necessary to take secondary measures in which it becomes an ordeal for the patient in order
- In addition to the pre-surgical antibiotic as a rule of this type of surgeries and as all the others has already stipulated the use of antibiotics in frequency of 6 times a day that is every four hours to avoid infection of the surgical wound in addition to potentiate the first dose of antibiotics
- Each time you are going to perform a colon and rectum surgery should have as a surgical principle that is a dirty or otherwise contaminated surgery because the colonic perforation will always be an imminent risk produced by bacteria such as clostridium difficile or a fungal invasion by candida spp.
- Antibiotic regimens will always be a medical core by the amount of nosocomial bacteria so very superficially you can say that metronidazole and ciprofloxacin parenteral would go very well, All this depends on the judgement of each surgeon and the country in which he is located.
- A fundamental pillar in this type of surgery is to know what kind of instruments and devices are being worked with since the success of a good colonic mechanical rafia depends much on these technical factors that should always be brought together before each surgery to avoid complications foreseeable

Surgical indications in ulcerative colitis

Next, we will describe the medical decisions that make a health team decide to surgically intervene a patient with ulcerative colitis:

- Clinical recurrence of signs and symptoms
- Pathological condition in which there is evidence of a state between dysplasia and carcinoma in situ
- Massive colonic bleeding
- States of toxic megacolon

Total proctocolectomy surgery with terminal ileostomy

- This type of colonic surgical technique removes the entire affected mucosa.
- This reduces the risk of this type of inflammation change the tissue as such and become an in situ carcinoma
- One of the complications in which this technique is involved is in the failure of the pelvic floor raphia, intestinal adhesions, healing of the perineal wound and ileostomy
- A plus to this technique is the application of an inter-interfinterian protectomy that prevents further failure of the perineal wound
- The preferred location of the ostomy is at the level of the right part of the rectum of the abdomen in the highest part of the infra-umbilical region

Surgery of total proctocolectomy with ileostomy continent

- This technique uses a reservoir called Koch's bag but has a high percentage of complications.
- This technique was replaced by restorative proctocolectomy

Total proctocolectomy with anastomosis ileal bag - anal

- This is the most used surgical technique being the definitive surgery for ulcerative colitis
- This is determined by a semitotal proctocolectomy with the maintenance of the sphincter complex - anal
- Always have to present anastomotic leaks raised at the level of the anal sac
- The amount of defecation is about 5 to 7 times a day
- In women a form of complication is pelvic sepsis due to fistula between the pouch and vagina.
- This technique usually has an inflammatory process called pouchitis that is nothing more than inflammation of the ileal sac.
- Pouchitis usually causes an increase in the frequency of feces, fever, dehydration, cramps and even bleeding
- Often the use of antibiotic therapy nominates metronidazole and Ciprofloxacin

Postoperative of the mentioned surgical techniques

- Removal of nasogastric probes
- The patient is given a liquid diet during the immediate postoperative period

- In the case of placement of a pelvic drainage is more or less to the 3 days
- The duration of the vesical probe is approximately 4 days
- A checkup colon enema is performed approximately 10 weeks after the surgery to show if there is any type of delayed intestinal leakage

Crohn's disease its surgical indications

- Recurrence of signs and symptoms
- Intestinal obstruction
- Intraabdominal abscess
- Anal fistulas
- Colitis fulminante
- Stunting of growth
- Cancer
- Massive Hemorrhage
- Megacolon Toxico

Ileocecal resection

- This technique is indicated in large damage of the terminal ileum being an imminent danger as it can cause perforation and intestinal obstruction
- This technique is given by the resection of the terminal ileum and the cecum between 15 to 30cm creating an enteric anastomosis between ileum and transverse colon

- These patients often develop terminal ileitis that is associated with to: fever; pain in the lower abdomen and leukocytosis
- Terminal ileitis often has bacterial causes such as the Yersinia enterocolitica and Campilobacter spp.

Total proctocolectomy with terminal ileostomy

- This technique aims to perform the resection of the ascending, transverse, descending, rectus and anus colon because the involvement of Crohn's disease has a very high percentage of colonic.
- This also has the advantage of performing the interdisciplinary protectomy to enhance results
- The result of this technique is the speed of intestinal transit and malabsorption syndrome especially when Crohn's disease is very aggressive

Total abdominal colectomy with ileorrectal anastomosis or terminal ileostomy

- This has its indication in ulcerative colitis where the rectum and anus are unaffected
- This has as main complication the recurrence of signs and symptoms
- So much the percentage of relapse that after 10 years the patient will need proctectomy.
- Although for this technique there is an alternative of closure under Hartmann together with a terminal ileostomy.

Segmental resection of colon

- This has the quality of being useful in incomplete colic lesions in which there is stenosis and colon obstruction
- The rescue of this technique is valid when you want to avoid the use of ostomies for patient comfort
- Despite these alternatives the recurrence rate remains high
- The recurrence rate ranges from 30% to 60% over a 10-year period
- Always consider the use of antibiotics such as metronidazole and Ciprofloxacin will be a good decision when operating.

Colonic ischemia surgical indications

The following are the most common decisions when surgery is required:

- The patient should have signs of abdominal peritonism
- Within the severe acute clinical picture we have massive hemorrhage
- The presence of toxic megacolon as fulminant colitis
- Insensitive loss of abundant protein
- Repetitive infectious pictures that trigger severe sepsis
- Presence of colonic stenosis with recurrent symptomatology
- The presence of symptomatic segmental ischemic colitis

Genetic mutations linked to colon and rectal cancer

The multiple genetic mutations of which are:

- APC
- MMR
- Oncogenes
- myo
- ras
- src
- erbB2
- TP53
- DCG
- APC
- MMR GENES
- bMSH2
- bM1h1
- bPMS1
- bPMS2
- bMSH6
- bMSH3
- APC

Hereditary adenomatous polyposis syndrome

Among the diseases associated with this genetic defect we have the following:

- Hereditary colon cancer without polyposis
- Gardner's syndrome
- Turcot's syndrome

Hereditary colon cancer without polyposis

Among the following characteristics described in the literature we can nominate the following ones:

- A small number of these are present in the colon and rectum
- The pathological characteristic of these neoplasms are sebaceous adenomas, keratoacantomas, sebaceous epitheliomas and basocellular epitheliomas
- Metastasis in this pathological entity is imminent so much so that the structures involved are the uterus, ovary, stomach, kidney and small intestine.
- The study of this disease is performed after performing the anamnesis to the patient where that manifests the family pathological antecedent of this pathology, if the patient is within the range of early adulthood it is ideal to perform a colonoscopy in a range of give every 3 years approximately and if necessary it could be every year
- Transvaginal ultrasound will always be a Gold Standard tool for screening women with suspected metastases

Gardner's syndrome

Among the following characteristics described by the literature we can nominate below those:

- Imaging pathological determination is the presence of polyps in hundreds at the level of colon and rectum
- After the image examination is carried out, the

colonoscopy with freezing biopsy as well as video high endoscopy

- The constitution of these structures after biopsy of osteomas, desmoid tumour, epidermoid cyst, congenital hypertrophy of the retinal epithelium.
- A flexible proctosigmoideoscopy must be required every 3 years as well as a high video endoscopy, although if the clinical picture requires it can be performed every year

Turcot's syndrome

Among the following characteristics described by the literature we can nominate the following ones:

- This has the presentation of polyps in the colon and rectum in smaller amount
- This has metastasis to the brain, spinal cord and cerebellum
- In addition to performing the resulting high and low video endoscopies should be made a nuclear magnetic resonance as discards of this underlying disease

Hereditary hamartomatous polyps syndromes

Among the diseases associated with this genetic defect we have the following:

- Codwen's disease
- Family juvenile polyposis
- Peud- Jeghers syndrome
- Ruvalcaba myhresmith syndrome

Cowden's disease

Among the following characteristics described by the literature we can nominate the following ones:

- The presentation of this pathological entity is polyps at the level of the colon and stomach.
- The metastasis as such has target organs of which are thyroid, skin and fanera, breast, uterus and Hosea tables of the skull.
- For its diagnosis it is important to take into account a well-done anamnesis, comprehensive physical examination, high and low video endoscopy with directed freezing biopsy in addition to breast ultrasound.
- Regular follow-up to assess how the disease is progressing

Family juvenile polyposis

Among the following characteristics described by the literature we can nominate the following ones:

- Has the definition of more than 10 polyps or equal to this number in the entire digestive tract
- It is associated with congenital malformations such as hydrocephalus, heart disease, Meckel's diverticulum, mesenteric lymphangioma and poor intestinal rotation.
- The risk of this disease causing carcinoma in situ is reduced, reaching a maximum of 25% in the case where it occurs.
- The Gold Standard diagnosis will be high and low video endoscopy with freezing biopsy.

Peud- Jeghers syndrome

Among the following characteristics described in the literature we can nominate the following ones:

- The small number of polyps is distributed in greater numbers in the small intestine than in the colonic region or elsewhere in the digestive tract
- The clinical presentation of the biotype is pigmented spots, genital tumors may develop into malignancy.
- Also the Gold Standard for diagnosis of this disease is high and low video endoscopy in addition to complementing the diagnosis with transvaginal ultrasound, biopsy and brushing of uterine cervix, breast ultrasound, upper abdomen ultrasound, testicular ultrasound and hormonal markers.

Ruvalcaba myhresmith syndrome

Among the following characteristics described by the literature we can nominate the following ones:

- The presentation of it is hamartomatous polyps being its characteristic lipomas, hemangiomas and lymphangiomas.
- The manifestation of the biotype is facial dysmorphia, macrocephaly, seizures, impaired cognition.
- This disease is still under study due to its low or no incidence, so more medical evidence is needed for future meta-analysis and proper decision-making regarding its correct diagnosis and treatment.

Chapter 4

Hepatobiliary

The current importance of surgical liver division is vital since this can determine the functionality of the same, therefore, it is clear to note that the main quality of this organ is self-regeneration.

The liver segments will be detailed below according to their surgical order, which are:

- From the 5th to 8th liver segment: a right hepatectomy, right lobulectomy or right hemihepatectomy may be performed
- From the 4th to the 8th liver segment: right lobulectomy, extended right hepatic lobulectomy or right trisectomy may be performed
- From the 2nd to 4th liver segment: left hepatectomy, left hepatic lobulectomy, left hemihepatectomy may be performed
- From the 2nd to 3rd liver segment: left lobulectomy, left lateral segmentectomy or left lateral sectionectomy may be performed
- 2nd, 3rd, 4th, 5th, 8th liver segment: extensive left hepatectomy, extensive left lobulectomy or left trisectomy may be performed

Liver biopsy

Below we will detail the usefulness of this supplementary examination:

- This is a percutaneous technique
- The main contraindication of this procedure is coagulopathy and ascites
- Percutaneous approaches are transyugular and/or laparoscopic
- For reasons practices the standard Gold technique is laparoscopic

Substances that are part of the liver bile

As known bile is a product of excretion from the liver and stored in the gallbladder of which we have the following solutes to describe:

- Sodium which has a concentration of approximately 132 to 165 mEq/L
- Potassium: which has a concentration of 4.2 to 5.6 mEq/l
- Calcium which has a concentration of 1,2-4,8 mEq/L
- Magnesium which has a concentration of 1.4 to 3 mEq/L
- Chlorine which has a concentration of 96 to 126 mEq/L
- Bicarbonate which has a concentration of 17 to 55 mEq/L
- Bile acids which has a concentration of 3 mM
- Phospholipids which has a concentration of 25 to 810 mg/dl
- Protein which has a concentration of 300 to 3000 mg/L

Child -Pugh classification

Below we have the following markers of this scale:

- Bilirubin below 2 and above 3 mg/dl
- Albumin having a value greater than 3.5 and less than 2.8
- Prothrombin time that has a value of 1 to greater than 6
- Ascites that can be classified as non-visible, mild and moderate.
- Encephalopathy that may be unprovable, minimal and advanced

Important facts about amebic liver abscess

A continued we have the following signs and symptoms accompanied by appropriate complementary examinations:

- Abdominal pain in 93% of presentation
- Fever in a 91% presentation
- Abdominal hyperesthesia in 79% of presentation
- Hepatomegaly in 63% of presentation
- Anorexia in 48% of presentation
- Weight loss at 40% presentation
- Diarrhea in 25% of presentation
- Jaundice in 22% of presentation
- The presence of cysts or trophozoites in the coproparasitic has a percentage of appearance of 12% approximately
- The presence of amoebas in cystic aspirate by percutaneous route guided by 2D ultrasound has an approximate percentage of 42% of occurrence
- Alterations in hemoglobin, alkaline phosphatase, total bilirubin, albumin and AST.

Diagnostic score for liver cancer

Below we will detail the parameters set for the diagnosis of the disease:

- As for the Child Pugh scale this is measured in 3 phases A, B and C
- As regards the uninodular and multinodular features.
- Alpha fetus protein values range from plus minus 400 ng/dl
- The presence of portal venous thrombosis as this is an important determinant when deciding on a liver transplant.

Therapeutic offered by current medicine in hepatocarcinoma

The following is a brief overview of treatment options:

- If we talk about the surgical options, resection of these tumors is indicated
- In other instances of the disease status, an orthotopic liver transplant may be performed.
- Ablation has different forms such as ethanol injection, acetic acid injection, and thermoablation techniques such as cryotherapy or radiofrequency ablation.
- The transarterial techniques used are embolization, chemoembolization and radiotherapy.
- There is also the alternative of transarterial and ablative combination
- External beam radiation therapy.

- Finally, we can name the systemic alternatives as chemotherapy, hormone therapy and immunotherapy.

Study of the patient with cirrhosis

Always in the brain of a doctor there is a number of possible diagnoses until you reach the definitive diagnosis, so we will name the schematic diagnosis below:

- Diagnosis of underlying liver disease
- Have an estimate of liver functional reserves
- Detect the hemorrhagic focus by high digestive bleeding in case there is

Hepatic vascular study

The following are the concepts involved in this section of hepatology:

- Hepatic venous interlocking pressure serves to visualize the venous regurgitation struck by the thrombi in the portal walls and thus the velocity with which the venous portal blood circulates.
- Normal portal venous pressure gradients range between 8 and 9 mmhg therefore for varicose veins to occur should be a value equal to or greater than 10mmhg and for blood to be above or equal to 12 mmhg.
- Computed tomography angiography, doppler ultrasound and magnetic resonance imaging allow the visualization of the venous anatomy of the porto-systemic network and its respective permeability.

- Within the surgical aspect, doppler ultrasound is grea t utility as it allows to see the port-systemic permeability of the short
- In addition, it can be used to check the permeability and vascular narrowing of transyugular intrahepatic port-systemic shunts.

Hemorrhagic diagnosis in cirrhosis

We will detail the decisions with the patient at the foot of the bed which are:

- The introduction of a nasogastric tube will help me to verify if the bleeding is in the lower esophagus or stomach.
- Whenever a high video-endoscopy is to be performed, it must be verified that the patient's hemodynamics is adequate
- Most of the upper digestive hemorrhages are caused by rupture of esophageal varices being different for those that are in a percentage less than 10% and is represented by rupture of gastric ulcers.
- The only causes of portal hypertension other than that caused by varices are portal colonopathy and portal hypertensive gastropathy

Therapy of hemorrhagic condition in cirrhosis

Below we will detail the guidelines for treatment are as follows:

- The conventional porto-cava and esplenorrenal derivation is located within the surgical aspect

- Balloon clogging and endoscopic sclerosis are also found within the surgical descriptions
- The acute medical eventuality as such should be corrected with crystalloids, colloids, vasopressors, infusion pump with proton pump inhibitor, antibiotics, analgesia,
- The importance of the hydroelectrolyte balance especially if the patient is in Intensive Care refers to the use of a device called Swan - Ganz catheter that is located in the pulmonary artery
- Among the measures of use of colloids is the administration of fresh frozen plasma when coagulation times enter into hemolytic lysis
- The main characteristic of portal hypertension is Hypersplenism, so if the platelet range is less than 50,000/ mm3, they are replaced.
- The use of a drug such as octeotride has been shown to control varicose hemorrhage just like somatostatin.
- The degree of somatostatin administration is 250ug followed by the same dose but in continuous infusion per ml hour
- The degree of administration of octeotride is 50ug followed by a continuous infusion of 25 to 50ug per hour
- The degree of vasopresin administration is 20 IU for 20 min and then an infusion pump at a dose of 0.2 to 0.4 units/min, the interaction should be with a vasodilator such as nitroglycerin at a dose of 40ug/min that enhances blood pressure control

- Using the Sengstaken - Blakemore probe is usually useful for acute hemorrhagic events preventing the patient from dying from Hypovolemic Shock instantly
- One of the complications already established by the use of the antihemorrhagic tube in cirrhosis is esophageal perforation and pulmonary aspiration with gastroesophageal content.
- Use of this probe should be limited to trained medical personnel to avoid established complications
- In our reality in health we can state that this probe should be in hospitals of 2nd level in the emergency areas until the patient reaches a hospital of 3rd level of care and the video-high endoscopy with ligation and cauterization of his varicose veins and prevent the patient from dying from hypovolemic shock as manifested in previous lines.
- The endoscopic treatment is led by gastroenterology specialists who are responsible for performing the procedure as long as the patient is hemodynamically stable
- To cauterize these venous dilatations in the lower esophagus, sclerosant substances such as sodium morruate and tetradecil sulphate are used
- Sclerotherapy has very mild adverse reactions such as fever retrosternal pain and the most serious would be an esophageal perforation although the occurrence of this has an event of approximately 1 to 3% so the realization by expert hands is indicated.

Surgical outcomes in cirrhosis

Transjugular intrahepatic port-systemic shunt

- The minimally invasive surgical feature of this technique is the decompression of the porto-cava venous system.
- The mechanism is the introduction of a guided catheter for dilation of a balloon and the subsequent placement of a metal prosthesis with an expansion capacity of a length of 10mm which would guarantee the venous shunt and therefore the decrease in portal hypertension.
- For the performance of this procedure it should be taken into account that it should not be performed when the patient has pathologies such as Polychitosis hepatic right heart failure and those that are relative are called portal venous thrombosis, hypervascularized intrahepatic tumors and hepatic encephalopathy.

Emergency surgery

- It is indicated only when the other already written techniques and pharmacotherapy as fundamental measure have failed
- This consists of cutting the lower esophagus and then giving it a shape with devices containing staples to deal with the acute hemorrhagic event
- It should be clear that this technique is ultimately and rescue by which success is not assured.

Definitive treatment of cirrhosis

- Abstinent and metabolic alcoholic cirrhotics are candidates for transplantation when they have a Child type C or A and B score with symptomatic pathology within the normal range of the disease.

- Also candidates are those who have a status of Score Child A and B with asymptomatic pathology within the normal range of the disease
- In addition to the transplant, hemorrhagic complications due to varicose veins should be taken into account, which means using the minimally invasive port-systemic transyugular intrahepatic shunt technique or, failing this, high endoscopy with sclerotherapy
- It should be noted that the complementary use of these can be simultaneous ensuring the life of the patient in risk - benefit

The ascites in cirrhosis

- The pathophysiological understanding of this chronic-acute event will improve the patient's quality of life and therefore the lengthening of his days of life even if it is known that this is only the terminal manifestation of this catastrophic disease
- The diagnosis of ascites can be made in 2 ways the first can be by 2D ultrasound which is evidenciable when there is an amount equal to or greater than 100ml, which cannot be identified by the respective physical examination in the patient's clinical history.
- The second form of diagnosis of the patient with ascitis is when this is already very evident in the clinical history by means of physical examination and is positive for sign of ascetic surge that clinically is the direct parameter to perform a respective paracentesis
- The paracentesis as such and was said to improve the quality of life of these patients which only has a practical medical concept as palliative measure but not curative.

- Therapeutic measures in ascites have 2 forms the pharmacological and the ambulatory
- Pharmacological measures are determined by drugs as propanolol which decrease portal venous flow speed and with them the decrease of bleeding by varicose veins and thus the filtration of ascitic fluid through Glisson's capsule.
- Other drugs that are crucial in this treatment are spironolactone which is a potassium-saving diuretic that acts on the convoluted tubules of the kidney, is therefore the first drug that should be used as a diuretic as soon as the patient with liver cirrhosis is diagnosed. The dose of spironolactone is 100 mg/day up to 400 mg/day
- Once the first diuretic is described the name of the 2nd furosemide that has a mechanism of action on the kidney henle, it is always recommended that when spironolactone is losing its effect to combine its action with furosemide, since this occurs when there is refractory ascites. The dose of it is 40 mg/ day being its maximum dose 200mg/day
- The most frequent complications of spironolactone use is secondary hyperaldosteronism and thus acute renal failure linked to furosemide.
- Once the diagnosis of ascites refractory to diuretics is determined, therapeutic paracentesis is initiated.
- The study of ascitic fluid becomes important when it is necessary to determine the nature of ascites and the only two pathologies involved in this study are liver cirrhosis and intestinal carcinomatosis.

- The reason why you avoid studying ascitic fluid each time you want to puncture is because of the high risk of peritoneal sepsis.
- It should be noted that the puncture as such is not the only infectious mechanism since the other occurs by the accumulation of ascitic fluid being this culture medium in the abdominal cavity producing a secondary peritonitis
- In addition to the use of diuretics and paracentesis, treatment should be supplemented with reduced salt intake approaching a maximum consumption of 2g per day
- It is known that when the ascitic liquid does not have a suisgeneris and yellow odor this being the product of filtration of the same by the liver, different is that it becomes red which is characteristic of intestinal metastasis product of cirrhosis in or in its first instance the characteristic of ascitic fluid of intestinal carcinomatosis.
- At the moment of performing paracentesis at that instant a saline solution and infusion of albumin are placed at doses of 8g/L of liquid extracted.

Chapter 5

Hernias and their surgical

The concept of hernia is nothing more than muscle defect aponeurotic of the abdominal region in which surrounding structures protrude through those virtual holes in which it becomes a common annoyance in patients that presents it being the daily bread of medical consultation of surgery in the outpatient clinic

Below we have 2 types of inguinal-femoral hernias which are:

- Indirect inguinal hernia: the hernial sac crosses the inner inguinal ring towards the outer one having a direction to the region of the scrotum in the worst case
- Direct inguinal hernia: the hernial sac is medial to the inner inguinal ring and thus to the epigastric vessels.

Other types of hernias below are referred to as:

- Combined hernia
- Femoral hernia
- Umbilical hernia
- Epigastric hernia
- Spigel hernia
- Hernia of the obturator

- Ischial hernia
- Perineal hernia
- Upper triangle lumbar hernia
- Lower triangle lumbar hernia

Differential diagnoses inguinal protrusions

Below we have the name of the following pathologies related to abdominal manifestations of which are the following:

- Direct and indirect inguinal hernia
- Inguinal and testicular hydrocele
- Mesenteric lymphadenitis
- Varicocele
- Testicular ectopia
- Tumor lipomatoso
- Hematoma
- Sebaceous cyst
- Hidradenitis of the apocrine glands of the inguinal region
- Suppuration of the psoas muscle
- Lymphoma with extension to the abdominal region
- Metastatic neoplasia
- Epididymitis
- Testicular torsion
- Femoral hernia
- Femoral adenitis
- Aneurysm and pseudoaneurysm of the femoral artery

It should be stressed that the first diagnostic tool of these pathologies are:

- The 2D ultrasound
- The Doppler ultrasound
- Simple and contrasted multislice tomography of the end region.

Inguino-femoral hernias have the following typologies:

- Pediatric hernias have the characteristic of having a direct relationship with the internal inguinal ring
- Inguinal hermas with defect in the internal inguinal ring which is dilated but the posterior wall of the transverse fascia is unscathed.
- As for the defects of the posterior wall of the anterolateral region of the abdomen we have the direct inguinal hernia, indirect inguinal hernia in which the indirect inguinal ring is dilated by compressing the transverse fascia of the Hesselbach triangle and the clearest examples are femoral hernia, massive scrotal hernia or sliding hernia.
- Recurrent hernias in which they may be such that repeat their injury mechanisms of which are direct, indirect, femoral and combined
- As the hernial defect has its slippage within the cavity it projects, it dissects itself and therefore the hernia becomes larger and more complicated until it reaches a point where it becomes incarcerated.

Previous surgical repairs

- This surgical mode is the most used in common surgeries by inguinal hernia
- Open hernia repair begins at the incision of the abdominal wall with transverse direction with curved ligament 2 va 3 cm above inguinal ligament.
- Once the incision is made, the external oblique muscle is identified and the external inguinal ring
- It is then presented to the inguinal canal once the incision on the external oblique is made.
- The ilioinguinal and hypogastric nerves are then identified
- Then the mobilization of the spermatic cord is carried out
- The hernial sac is opened, the internal structures are dissected to know if the content is visceral or if it is bulky
- Then at the neck the hernial sac is removed
- Then a rafia is made of the hernial defect
- Finally once corrected the hernia is preceded by closing of the structures of the anterolateral wall of the abdomen
- There is a widely used technique that does not perform tension on the stress of the defect repaired using a synthetic mesh in which the virtual gap is covered with techniques such as Lichtenstein
- One of the techniques for fixing synthetic mesh is by means of laparoscopic stapling
- The open pre-peritoneal approach serves to repair those hernias that are recurrent, those that have caudal cephalic slip, those that are incarcerated and those that are femoral.

Laparoscopic treatment of hernias

- This technique has the ability to have a radical advantage in which the patient by means of some holes of about 2cm transverse diameter are inserted trocars to perform hernia repair where it has the same principle as that which is opened being this without tension on the synthetic mesh
- This results in the patient having a much more effective improvement and post-operative short-term and optimal medical discharge
- The other laparoscopic techniques are totally extraperitoneal intervention and trans-abdominal pre-peritoneal intervention.
- There is no contraindication described so far for the realization of the laparoscopic technique, it is more has many more advantages over those that are open.
- The extraperitoneal technique is characterized by a cut below the navel where it enters the muscle of the anterior rectum of the abdomen to which a real space is made by direct dissection.
- After this, when a dilatation balloon is inserted, the posterior sheath of the anterior rectum is dissected by bringing it to the symphysis of the pubic laparoscopic way.
- The cooper suspensory ligament should be at the height of the external iliac vein.
- Another of the surgical procedures at the end is to dissect the sperm cord.
- Femoral hernias have 2 types of approaches which can be open or laparoscopic

- The medical principle of femoral hernias is the defect in of the femoral duct
- The anatomical limits above we have the iliopectinia sling below the duct is the Cooper suspensory ligament, in the lateral direction it is bounded by the femoral vein, and medially by the transition between the iliopectinia sling and the Cooper suspensory ligament.
- Topographically protrusion is evident at the level of the ligament inguinal in the cephalic direction along the femoral canal
- The surgical objective of femoral hernia is dissection and removal of the hernial defect in addition to the occlusion of the femoral canal.

Special presentation regarding hernias of the abdomen

- As for the sliding hernias we have that those occur when the morphological defect is compressed by an organ of the abdominal wall
- Usually in sliding hernias we have organs involved as the colon and urinary bladder being its principle an indirect hernia that was projected towards greater complexity
- The surgical objective of sliding hernias is the reduction of the hernial sac being carried into the peritoneal cavity avoiding compressive lesions of the structures involved such as the colon and urinary bladder.
- Then it binds and severs what is left of the hernial sac
- Once the above has been done, it is necessary to make the respective drawings of the location of the abdominal wall involved.

- As for relapsing hernias it is always advisable to place a synthetic prosthesis to prevent secondary injuries.
- The surgical approach of recurrent hernias should always from being by a later way with the placement of a second synthetic prosthesis for optimal recovery of the patient and healing of the respective wounds closed in 2nd surgical intention as described in the books of basic principles of general surgery
- As for strangled or incarcerated hernias the approach should always be pre-peritoneal although everything depends on the surgical skill of the general surgeon
- The surgical objective of strangulated hernias is the direct exposure of the hernia defect so the incision must be in a single cut and the pulse of the scalpel handle impeccable.
- It should be noted that the hernias strangled due to necrosis that is produced by the compressed organ become true acute abdomens when the wall of the hollow hollow organ breached in which it has been broken putting on exposure to the peritoneal cavity fecal feces or urine so that surgical action must be taken immediately.
- In the same incision made at topographic level, the peritoneum and intestine involved can be resected without having to make another cut.
- Bilateral hernias have the characteristic of being recurrent and of a more complex management, thus closing by second intention
- The major techniques established in the surgical aspect are those that are handled by laparoscopy and the use of large prosthetic mesh.

Infectious lesions of the surgical site

- The percentage of infection established by countries of the 1st world is approximately 1% with the most bloody technique which is the open one.
- In the preoperative, it is estimated that the antibiotic dose should be placed approximately 60 min before surgery and the chosen antibiotic is cefazolin 1 gram every 12 hours and 2 grams perioperatively.
- The infectious risk always has to do with the number of relapses, the type of mesh and the type of thread with which it closes in planes or the skin or the small holes of use in the laparoscopic procedure.

Postoperatory nerve damage

- These may have mechanisms such as traction, electro cauterization, nerve cross section or compressive strangulation.
- The damaged nerves are usually the ilioinguinal, the genitofemoral and the hypogastric which causes hyperesthesia or anaesthesia of the skin and surrounding tissues defined by the affected nerve.
- Presented neuralgias may be persistent and transient.
- The clinical therapeutic criteria for treating nerve injury are analgesia, nerve blocks with local anesthetics, transcutaneous electrical stimulation and adjunctive drugs.

Injuries to the genital organs

- One of the pathologies at last is ischemic orchitis in which the veins of the pampiniform plexus are collapsed and thrombosed so they usually occur 2 to 5 days later.
- The manifestation of the damage of structures somewhat distant from the hernial defects converges with the sliding situation of the same therefore the complexity of this type of hernias involves the action of experienced surgeons.

Ventral hernias and their surgical involvement

- This has a definition as the output of hernia defect by the anterior abdominal wall.
- The types of ventral hernias are epigastric, umbilical, hypogastric and acquired.
- Acquired hernias are the product of a surgical failure in which a second hernia surgery must be performed where the defect must be covered with a good brand prosthetic mesh, which will cause the rate of relapses to be zero at best and therefore the rate of infection is also nil.
- The separation of the rectus abdominis muscles has a mechanism where the abdominal wall suffers a muscle-aponeurotic strain causing the aponeurosis belonging to the line to be separated.
- This aponeurotic defect is very commonly used in surgical procedures that are performed in plastic surgery,

making with sutures to approach the diastasis rectus leaving the anterior abdominal region more firmly.

- In the case of ventral hernias that do not belong to the line alba these are resolved by the general surgery service where the surgical objective is the resolution with prosthetic mesh by laparoscopic way in which the recurrence rate is totally zero depending on the experience of the surgeon in charge.

Diagnosis of abdominal hernias

- This may be from some medical areas starting with the 1st level of health care.
- Given the circumstances in performing the anamnesis the patient usually refers to "Dr. I have a lump in my belly" "Dr. I have this moving in my tummy".
- If the colloquial language used by patients is very varied so the doctor who is doing the physical examination must have all the courage to reach the understanding of the patient.
- More than toughness you must have the ethics to be very professional when performing the physical examination of each of your patients because the creole vibrancy and malice of many relatives and patients makes this be upset.
- Once the physical examination is completed, it must be corroborated with complementary examinations; the first to the line is the 2D ultrasound of soft parts of the region in question.
- Once the diagnosis is determined, the first level of health care proceeds to make the corresponding referral to the specialist in General Surgery with a reference form to the

3rd level of health care for assessment
pre-surgical as such and the surgeon in charge performs the appropriate surgical procedure.

Epigastric hernia in surgery

- The percentage of presentation of these morphological abnormalities is greatly reduced, ranging from 4 to 5%
- Despite being of very low appearance tend to suffer incarceration of the pre-peritoneal tissue
- The surgical objective has 2 Alternatively prepare it with prosthetic mesh or stitches with threads for muscle and aponeurosis.

Spiegel's hernia in surgery

- This type of hernial presentation usually has a dimension of about 2cm and is the dissection of the posterior aponeurosis of the external oblique.
- The diagnosis of this type of hernia is not easy to diagnose because it does not have the frequent protrusion that the other hernias in question have.
- Therefore the way to diagnose them is with the anamnesis of the patient due to the pain referred at the level of the external oblique.
- Once having this premise, we proceed to the corresponding 2D ultrasound of soft parts of the region of the external oblique and its surrounding areas.
- Despite not having a protrusion as such has equally high risk of incarceration

- The surgical objective of this is the invagination of the defect a
  nd
  proceed to the simple suture of the aponeurosis
  placement of a prosthetic mesh in which relapses are null.

Hernia Obturator in surgery

- In matters of boundaries between the pubis and the ischium there is a weakening of the obturator membrane as such that the determination of its defect is given by the widening of it.
- Through this membrane flow vessels and nerves called obturators that when there is the hernia defect the vascular and nervous pack are obstructed by the passage of the hernial sac in which it tends to suffer incarceration and strangulation of the intestinal arms.
- The diagnosis of this hernial defect is presented only when there is an acute abdomen that must be diagnosed clinically and in image.
- The Gold Standard complementary imaging test is a simple multislice abdomen computed tomography.
- The surgical objective of this defect is by laparoscopy in which hernia repair can be performed
- In the event of injury to the intestinal wings, open surgery should be performed using the pre-peritoneal technique.

Lumbar hernia in surgery

- The boundaries between the 12th rib and the upper lumbar have an aponeurotic membrane which is part of the lumbar mass.
- This hernial defect is important to know when performing liposuction because at the moment of passing the cannulas the hernial defect tends to break and cause an acute abdomen.
- Therefore, whenever a liposuction is to be performed, an ultrasound of the soft parts of this lumbar region should be done to avoid surgical complications.
- The surgical objective is the repair of the hernia defect in which you must use a prosthetic mesh.

Ischial hernia in surgery

The major sciatic hole has a membrane in which usually protrudes a hernial defect

- This is almost absent but when it manifests presents a mass in the intraglutea region
- The surgical objective of this surgical intervention is with a prosthetic mesh where the entrance route is trans-gluteal.

Perineal hernia in surgery

- This type of surgery is due to the musclewall aponeurotic perineal proper and are usually congenital
- Symptomatological problems always occur at the time of sedation.

- The diagnosis is by 2D ultrasound of soft parts of
  The perineal region

Acute abdomen

The **definition** of acute abdomen will be in the following statements:

- Inflammatory and infectious manifestation
- Sighting of non-peritoneal fluid

Anatomical and physiological qualities

The types of pain may include:

- Visceral pain: this has the characteristic of being located in the affected organ so the representatives of it are the type colic, sharp and burning
- Parietal pain: this is in diffuse form due to the achievement of dermatomas and has a name called peritonism in which there is an abdominal hyperesthesia at the time of the physical examination of the abdomen.
- Referred pain: this is the union of the above in which already as the surgical and metabolic emergency is advancing acutely if the pain began in the epigastrium radiate to the right iliac fossa or if the pain is in the mesogastrium radiate to the region of the left hypochondrium and upper left lumbar region, many examples described in the sections on medical semiology and clinical medicine.

Non-surgical causes of acute abdomen

They may be caused by:

- Among the renal causes we have the uremic
- Among the pancreatic causes we have diabetes mellitus
- Among the adrenal causes we have Addison's disease
- Among the hematological causes we have the drepanocytic crises, acute leukemia, and in another order the most frequent blood dyscrasias
- Among the toxicological causes we have those that are by exposure to heavy metals, use of narcotics in a chronic way, intoxication by black widow bite

Surgical causes of acute abdomen

- The main traumatic cause is traffic accidents where organs such as spleen, liver are usually injured and in those of greater impact the pancreas where the prognosis is deplorable by the self-digestion of this gland and the consequent death.
- The presentation of abdominal aneurysms are usually in certain cases discovered incidentally but the fatality of these is that they cause immediate death by fulminant hypovolemic shock, There are few or very rare cases that reach the emergency room and a vascular surgeon can treat them.
- The course of pregnancy as such has different implantations in which the first cause of acute abdomen is ectopic pregnancy.
- The presentation of broken diverticulum in the stomach region

- Gastrointestinal ulcers as such when they pass the serosa of the digestive tract turns the bleeding into the peritoneum producing peritonism.
- Hemorrhagic pancreatitis as traumatic or metabolic disorders govern a disease within the acute abdomen picture
- Among other rare diseases we have the disease of Mallory Weiss in which the production of hydrochloric acid accelerates pierces all the layers of the stomach producing a picture of acute abdomen
- Acute appendicitis is one of the most common surgical conditions that occur in the general surgeon's professional practice
- Acute cholecystitis is the calculated manifestation that these stones can erode the vesicular wall and thus dump the biliary contents into the peritoneal cavity and the other form is that which is achulculous usually arises in large burn patients.
- In infectious diseases of the liver we have the hepatic abscess when it breaks and flips into the peritoneal cavity.
- The two types of volvulus both cecal and sigmoid produce an obstructive abdomen and then perforation of the handles by dumping the fecal contents into the peritoneal cavity
- Another type of obstructive abdomen is that of incarcerated hernias which, by strangulation of the same, erode and dump the fecal contents into the peritoneal cavity
- In autoimmune diseases such as Crohn's disease and ulcerative colitis due to their self-injury mechanisms they erode the colon or another part of the digestive tract causing it to occur

obstructive abdomen and therefore the fecal contents are peritoneal cavity

- Among the acute vascular fulminant diseases we have the Buerguer's disease, mesenteric thrombosis or embolism, ovarian torsion, ischemic colitis, testicular torsion and strangled hernias so the pathophysiology of these ischaemic diseases is the abolition of blood supply to these noble structures making the amount of oxygen is inadequate and by necrosis of the tissue such affected region is disabled and therefore erodes the structures and in addition to being an ischemic abdomen will also be an obstructive abdomen.

Irradiation of acute abdominal pain

- Because first the pain is visceral and as the hours pass it becomes mixed by the feed back of the nervous system trying to compensate for the synapses on the acute abdomen
- Once the pain becomes mixed being visceral and parietal due to dermatomas it can radiate to regions such as the right shoulder in which the abdominal structures involved are liver, gallbladder and hemidiafragma right.
- When we talk about radiation to the left shoulder the abdominal structures involved are the heart, the tail of the pancreas, the spleen, and the left hemidiafragma.
- If we notice the history of lower abdominal pain, we can say that acute abdominal pain is due to structures such as the scrotum, ureter and testicles.

Anamnesis in the acute abdomen

At the stage of We can conduct an interrogation the following questions:

- Where is the pain?
- Is the pain localized or in other parts of abdomen?
- Do you feel the pain all over your abdomen?
- Tell me from 1 to 10 how much does it put on the pain you have?
- Do you think something that he ate made him have this pain so strong?

This is an interrogation close to the acute abdomen of intrinsic or metabolic causes being different for those peritonitis in the old nomenclature caused by traumatic events such as:

- Stab wound
- Injury by a firearm
- Collision road accident
- Fall from considerable height
- Attempt on life as femicide
- Attempt on life as homicide

And interrogation in this type of acute abdomens is recommended together with a representative of justice.

Physical examination of the acute abdomen

- In the respective anamnesis should already have the idea of the organ
  of the bodies involved.

  methodical, organized and caring due to the bad predisposition and malice of family members and patients when they want to create chaos or take advantage of leadership that any of our doctors may have.
- At present it is essential that every doctor in full exercise of his constitutional powers should first have a lawyer so that he knows what to do legally in any situation of risk presented to him
- The palpation of the abdomen in a strategic way depends on the experience and skill given by each doctor so they can be manifested as follows:

The placement of hands in unimanual or bimanual form is primarily determined by the affected organ in question

The execution of the maneuver in and out of the hand at high speed from the abdominal wall determines whether the abdomen has features of peritonism.

As for the auscultation we can say that the pathological sounds are the increase of the hydroaerial noises, decrease of them, or abolition of these which are nothing more than the expression of the peristaltic movements of the intestinal wings.

After the physical examination is completed, the cause of the acute abdomen should be corroborated by complementary examinations

Complementary examinations in the acute abdomen

We will detail the examinations that serve for corroborate an abdomen of which are the following:

- Upper abdominal ultrasound: this detects abnormalities in organs such as the liver, stomach, spleen pancreas, recesses such as the subfrenic, subhepatic and splenic
- Pelvic ultrasound: this detects abnormalities: in the peritoneal cavity below the mesogastrium and organs such as appendix, ovary, and recesses such as the bottom of Douglas sac in all those that by gravity tend to the accumulation of fluid added to the peritoneal like pus, faeces, urine and blood.
- Soft tissue ultrasound: this is very important and low-cost for the diagnosis of hernial defects that may be with incarceration
- Renal ultrasound: this also allows to evaluate the existence of fluid that may be blood or pus among others that can be in the recesses near the kidney
- X-ray of abdomen: this can determine obstruction by volvulus, masses, in addition to the abdominal gas increase expressed as a blurred image throughout an abdominal cavity typical of appendicitis or sentinel handles for pancreatitis, calculation in the common bile duct, or a fecalite in the lumen of the vermiform appendage.
- Computed tomography: this is very useful to determine acute abdomens immediately can be traumatic or metabolic with its characteristic of simple and proven multislice

- For laboratory tests the Gold standard is the

Complete blood biometrics where attention should be paid to hemoglobin, leukocyte quantification, and deviation of neutrophils

- Electrolytes such as sodium, potassium, chlorine, phosphorus, magnesium and calcium are used to assess the volaemic state of the patient in addition to their inflammatory reactions
- The renal profile plays a very important role with its markers as creatinine, uric acid, urea and ureic nitrogen.
- An elemental and physical chemical urine is very low cost but has a high utility in terms of acute abdomen corroboration.
- In obstetric emergencies the evaluation of chorionic gonadotropin is fundamental since it discards acute abdomens from other causes and decides to act with a highly trained gynecological team.
- Markers such as amylase and lipase play a fundamental role in traumatic and metabolic pancreatitis corroborating the acute abdomen picture
- Bilirubines are useful when there is a cholestasis disorder or hemolysis in blood dyscrasias.
- Alkaline phosphatase determines the degree of liver self-digestion for traumatic reasons
- Serum lactate is a key marker for sepsis in which the patient tends to have high bacteriemia
- As for the toxicological area, prolonged use of narcotics can be established
- Other tests to be established are culture and toxicology for bacteria like clostridium difficile.

- Other tests like PCR, ESR are markers for reaction inflammatory in the diagnosis of sepsis

Diagnostic laparoscopy in emergencies

- The use of this surgical technique is more frequently used in emergencies for the same diagnostic and therapeutic utility

Diagnostic peritoneal washing in emergencies

- Usually 1000 ml of 0.9% saline solution introduced by lap trocars with an irrigation gun is used
- In the wash study there should be more than 250 leukocytes per ml
- Quantification of more than 300000 erythrocytes per ml
- Bile should be above normal values in plasma evaluation
- Presence of fecal particles
- Creatinine should be above plasma blood values

Acute abdomen in intensive care unit

- Medical semiology or clinical medicine in the patient in a medically or metabolically comatous state is a challenge of dexterity for the intensivist or in its absence for the resident doctor on duty

The differential diagnosis of
Pathologies arising in intensive care which are:

- The management of drugs as inotropic these have the quality to divert the irrigation to vital organs and leave the periphery with the minimum and necessary DO2
- Therefore as the days pass the blood flow decreases passing with mesenteric ischemia, paralytic ilium, peptic ulcers due to oxidative stress of critical patient
- Cholecystitis in large burn patients who are managed by the burn area of reconstructive plastic surgery
- Acute pancreatitis as presented in the critical care unit is nothing more than self-digestion of the gland by oxidative stress
- By the time the body can no longer regulate its feed back there begins to be multiorgan failure so the prognosis of these patients is disastrous.
- In order to predict mortality in intensive care, the APACHEII scale is used, where due to quantitative and qualitative parameters the patient's survival is defined and it is when it is determined no longer to continue with the treatment or in its absence to continue despite the The risks involved.
- The importance of using scales is fundamental because it is a way to scientifically prove the prognosis of a patient and therefore legal defense against any abuse by unscrupulous people

Acute abdomen in patients with decreased immunity

This section is determined by the patients:

- oncology,
- Autoimmune
- Immunocompromised due to HIV
- Protein-caloric malnutrition
- Cirrhosis
- Diabetes
- Essential arterial hypertension
- Dermatological treatment with biological drugs

The quantification of laboratory markers such as CD4, CD8, neutrophils, leukocytes will always be essential in these patients.

The syndromes and infections associated with these diseases are as follows:

- Tumor lysis syndrome
- Fever of unknown origin
- Symptomatic neutropenia
- Aspergillosis
- Criptococosis
- Peritoneal tuberculosis
- Endemic mycosis
- Epstein Barr virus infections
- Infections by cytomegalovirus

The vermiform appendix in surgery

The vermiform appendage is an extension of the blind where the approximate diameter of the lumen is about 7mm has irrigation of the apendicular artery iliocolic branch and this in turn branch of the superior mesenteric artery all this is surrounded by the mesoappendicitis which is an extension of peritoneum towards the distal part of the cecum.

Bacteria isolated after a respective culture

- Bacteroides Fragilis
- Bacteroides spp.
- Bilophila Wadsworthia
- Eschericha Coli
- Streptococcus Viridans
- Peptostreptococcus
- Streptococcus of group D
- Entorococci Spp.
- Pseudomona Auriginosa

Diagnosis of appendicitis

Through the following acapites is performed the respective surgical intervention of which are:

- Major leukocytosis at 11000 x mm3
- Neutrophilia with left deviation
- Sharp pain in right iliac fossa

- Positive Mcburney sign
- Positive Blumberg sign
- Positive Psoas sign
- Abdomen x-ray with presence of abdominal gas as a diffuse image throughout the abdominal region plus the presence of fecalito at the level of the appendix on certain occasions
- 2D ultrasound where the lumen of the appendix is measured if it is greater than 7mm is appendicitis next to the patient's medical clinic.
- A basic and low-cost examination as the elemental and microscopic urine allows to rule out whether the cause of acute pathology is by kidney calculation or infection of the renal calyxes that can be calculosa or only bacterial reaching severe sepsis pictures

Surgical techniques used in appendectomy

- The 2 techniques are open and laparoscopic
- The surgical technique that is open begins by making an incision at the level of the Mcburney appendicular point in oblique direction
- Separated with 2 Kelly tweezers each end
- The electrocautery is taken and hemostasis begins while separating the subcutaneous cell tissue
- Then you get to the aponeurosis of the external oblique begins to separate by anatomical planes
- Once separated all the anatomical elements we arrive at the transverse fascia which is cut with a medembaun scissors
- Once in the abdominal cavity, separators of

Richardson for better visibility

- After that, a Babcock's clamp is used to locate the appendage and present it surgically
- Once this is done, the appendix is clamped in 2 locations, one at the base of the appendix and another distal to it with the clamp pliers
- After this we proceed to bind the appendix with vicryl 3- 0
- From there with a Medembaun's scissors the exceresis of the appendix
- Then with the electrocautery the apendicular stump is cauterized
- Then with 500 cc of solution came out the abdominal cavity is washed and with a suction probe is removed the fluid result of abdominal washing
- With compresses the surgical region is dried and closed in planes
- It is always preferable to use continuous suture of double reinforcement to avoid hernias acquired incisions
- Drain is left and removed 3 or 4 days after surgery.

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Once finished this medical literary work we can say that for a success in the surgical field it is absolutely fundamental to know the anatomy by regions in a rigorous way as it manifests in chapter 1

We had the courage to include a chapter in which is of great interest worldwide because it is an asymptomatic and silent pandemic since the rate of infarctions worldwide is very high and that is why it manifests in chapter 2

To conclude, it is very welcome that you read the following chapters and delight in the surgical field and know that they must be legally covered in each proceeding.

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ISBN: 978-9942-7371-6-8