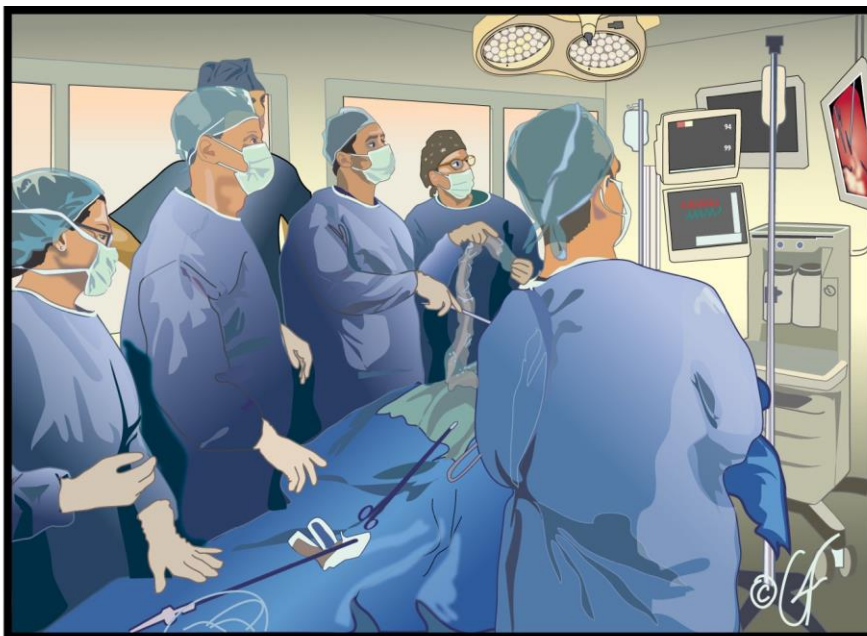


The Surgeon's Atlas: A Lifetime of Practice, Illustrations, and Reflection

George Ferzli MD



Biography

Clinical Professor, Department of Surgery, NYU Grossman School of Medicine
Director, Advanced GI, MIS and Bariatrics Fellowship Program, NYU Langone
Medical Director, MBSAQIP, NYU Langone Health - Brooklyn
Board-certified in General Surgery and Surgical Critical Care

Overview

Dr. George S. Ferzli is an internationally recognized pioneer in minimally invasive surgery whose work in operative innovation, education, and international collaboration has influenced surgical practice for more than three decades. Board-certified by the American Board of Surgery in general surgery and surgical critical care, he has helped shape modern laparoscopy through technical innovation, scholarly publication, fellowship training, and international teaching.

Born and educated in Beirut, Dr. Ferzli was profoundly influenced by his father, Salem, and his brother, Ghassan, whose examples of integrity, compassion, and perseverance helped shape his early commitment to medicine. He earned his medical degree from Saint Joseph University, one of Lebanon's premier medical institutions, before relocating to the United States for surgical training. Early in his career, he worked under the mentorship of Dr. M. H. Worth Jr., an experience that helped sharpen the technical precision, discipline, and academic rigor that later defined his surgical career.

Pioneering Surgical Contributions

Dr. Ferzli was among the earliest surgeons in the United States to perform and publish a number of laparoscopic procedures that later became widely adopted. These milestones included total extraperitoneal (TEP) inguinal hernia repair; extraperitoneal endoscopic pelvic lymph node dissection for prostate and bladder cancer staging; laparoscopic common bile duct exploration; and thoracoscopic treatment of iatrogenic esophageal perforation. He later extended minimally invasive approaches to hepatic tumor resection, the posterior gastric approach to laparoscopic splenectomy, extraperitoneal laparoscopic radical prostatectomy, and laparoscopic staging of Hodgkin's disease.

In 1999, Dr. Ferzli and colleagues described the laparoscopic transabdominal lumboperitoneal shunt, extending minimally invasive collaboration into neurosurgery. In 2001, he reported several additional innovations, including minimally invasive nonendoscopic thyroid surgery, the routine use of diagnostic laparoscopy in the intensive care unit, laparoscopic autopsy, and the lateral approach to laparoscopic sigmoid colon resection. His later work continued to refine operative safety and technique, including publications on trocar placement for laparoscopic abdominal procedures, laparoscopic gastric fundus tamponade, posterior

infundibular dissection, critical reassessment of the "critical view of safety," and lateral-to-medial dissection for the safe management of adhesions during laparoscopic cholecystectomy.

Scholarship, Patents, and Educational Media

Dr. Ferzli's scholarly output has remained substantial across general surgery, bariatric surgery, critical care, and minimally invasive technique. His NYU Langone faculty profile currently lists 196 publications. Public patent records currently identify 12 U.S. patents bearing his name as inventor or co-inventor. These include early laparoscopic instruments (U.S. Patents 5,147,373; 5,171,257; 5,201,759; 6,050,960), a distance-measuring laparoscopic device (7,955,275), support coupling for surgical instruments (9,532,771), an endoswab for minimally invasive surgery (10,912,539), a specialized knot pusher for surgical port closure (11,771,415), and the surgical cautery and cutting device issued as U.S. Patent 12,508,068 in 2025, among other device innovations spanning surgical and medical instrumentation.

For nearly three decades, Dr. Ferzli has collaborated with Johns Hopkins School of Medicine, Art As Applied to Medicine educated medical illustrator, Anne Erickson, CMI, producing hundreds of scientific illustrations for publications, presentations, and teaching materials. Together, they have also created a companion body of humorous and satirical surgical cartoons, reflecting a shared belief that education, craftsmanship, and humanity in surgery belong together.

Leadership, Fellowship, and Program Development

A founding member of the Fellowship Council, Dr. Ferzli has directed one of the nation's longest-running Minimally Invasive and Bariatric Surgery fellowship programs since 1995. His mentorship has influenced generations of surgeons who now hold leadership positions around the world. He has also held major academic and hospital leadership roles, including Chairman of Surgery at Lutheran Medical Center, Professor of Surgery at SUNY Downstate Health Science Center, and Chief of the minimally invasive surgery fellowship at SUNY Downstate and Staten Island University Hospital.

Under his leadership, Lutheran Medical Center was awarded Bariatric Surgery Center of Excellence designation by the American Society for Bariatric Surgery for the period August 22, 2005, through August 22, 2006. The designation recognized both Dr. Ferzli and Lutheran Medical Center and placed the program among the early centers formally acknowledged for excellence in bariatric surgical care.

International Teaching and Surgical Leadership

Dr. Ferzli has introduced laparoscopic procedures and led minimally invasive surgery training programs in more than 30 countries and over 60 cities worldwide. His international teaching and proctoring efforts have spanned every major region, including the Middle East (Lebanon, Egypt, Kuwait, Bahrain, Saudi Arabia, Turkey, Pakistan); Africa (South Africa - Cape Town, Durban, Bloemfontein, Johannesburg); Europe (France, Greece, Belgium, Norway, Italy, Scotland, Portugal, Switzerland, Sweden, Spain, England); Asia (China - Beijing, Suzhou, Lanzhou, Xi'an, Shanghai, Nanjing; India, Thailand, Uzbekistan, Kazakhstan, Japan, Singapore, Russia - Siberia); and the Americas (United States, Canada, Colombia, Dominican Republic, Mexico). Through this work, he has helped establish minimally invasive surgery as a global standard of care, mentoring surgeons and advancing modern laparoscopic technique across disciplines and borders.

Voice in Surgical Education

In recent years, Dr. Ferzli has emerged as a leading voice for balanced surgical training in the robotic era, arguing that innovation must strengthen rather than weaken tactile judgment, operative discipline, and manual skill. His recent publications include *Is the Robotic Revolution Stunting Surgical Skills?*; *One Step Forward, Two Steps Back: Preserving Surgical Skill in the Age of Robotics*; *Safeguarding Laparoscopic Training in the Robotic Era*; and *Unentrustable Professional Activities: Innovating Backwards with Robotics in Surgical Training*. Together, these works underscore his conviction that new technologies should expand the surgeon's capabilities without displacing the foundational skills on which safe surgery depends.

Throughout his career, Dr. Ferzli has combined innovation with mentorship, scholarship, and a strong sense of surgical stewardship. His professional legacy lies not only in procedures pioneered and papers published, but also in the generations of surgeons he has trained and the worldwide diffusion of safer, more reproducible minimally invasive technique.



"Technology should enhance our hands, not replace them. The surgeon's mind, touch, and judgment remain the true instruments of healing."

George S. Ferzli, MD

Places I've lectured, places I've operated...



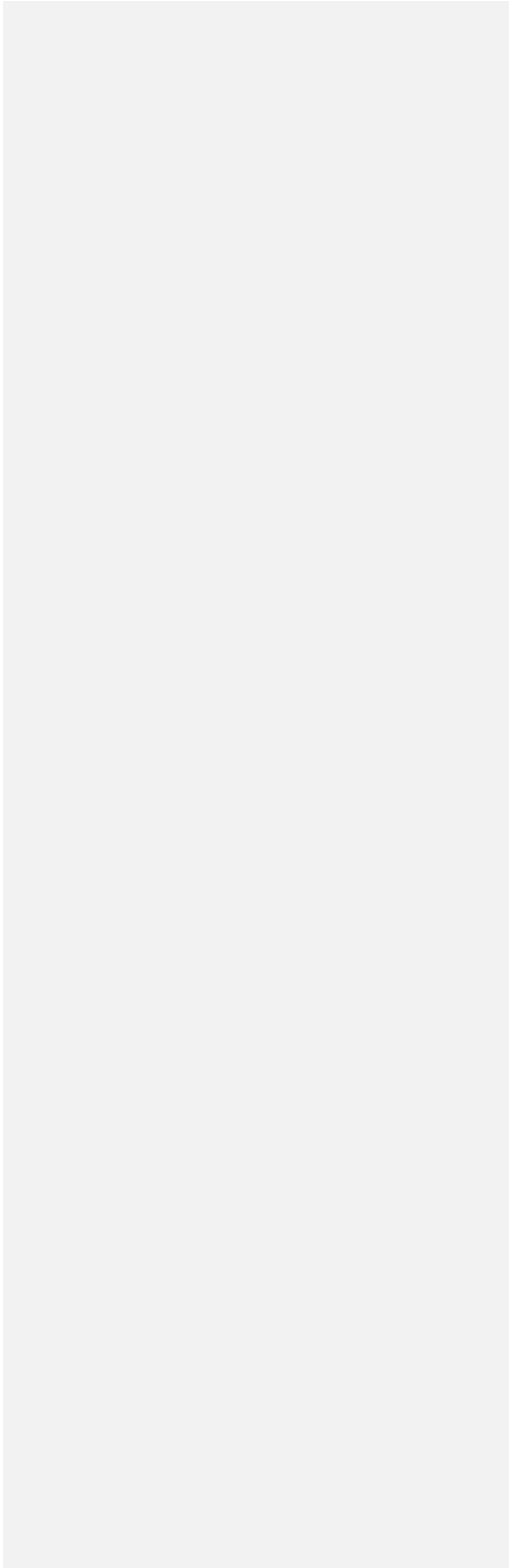
...and I think to myself, what a wonderful world.

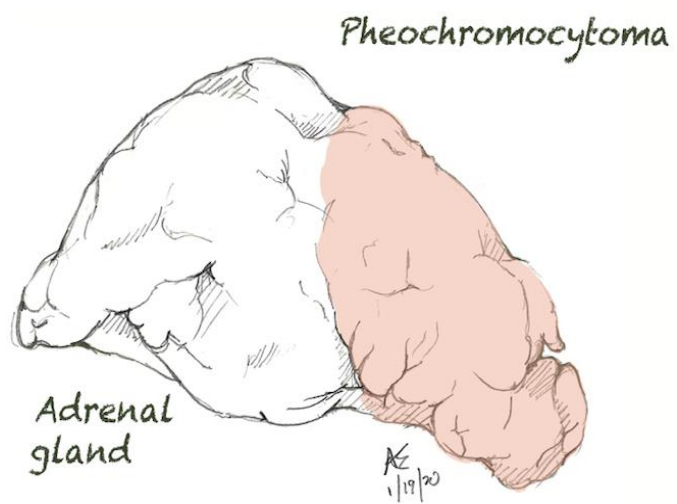
Chapters

1. Adrenal
2. Appendix
3. Bladder and Ureters
4. Breast
5. Cardio
6. Colon and Hemorrhoids
7. Esophagus
8. Female Pelvis and Gynecology
9. Gallbladder
10. Groin
11. Hernia
12. Hiatal Hernia
13. Intestines
14. Inventions
15. Kidney
16. Liver
17. Pancreas
18. Prostate
19. Spine
20. Spleen
21. Stomach and Small Intestine
22. Thyroid
23. Robotics
24. Inventions
25. Lebanon

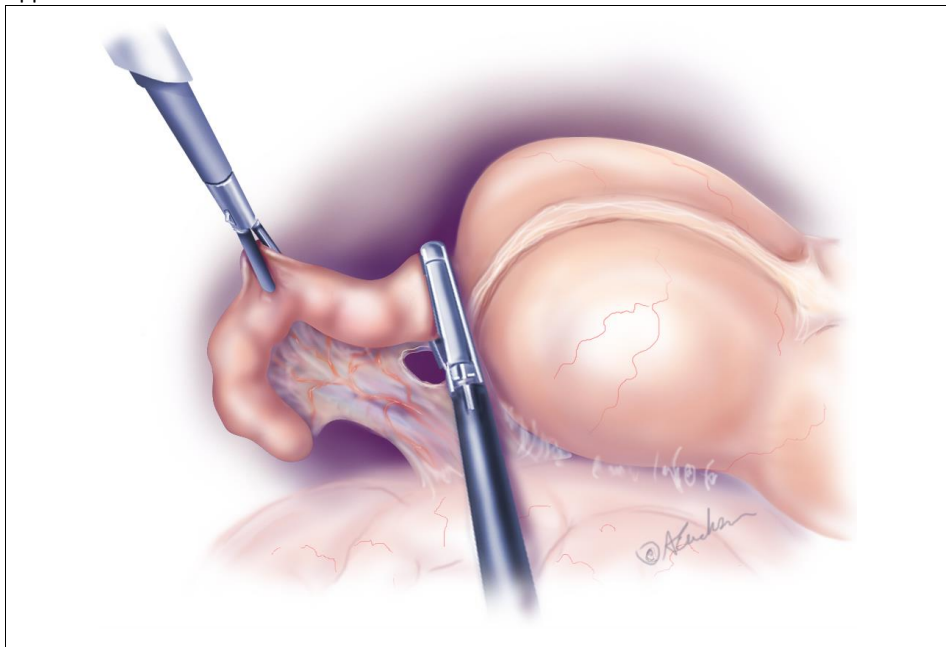


Adrenal

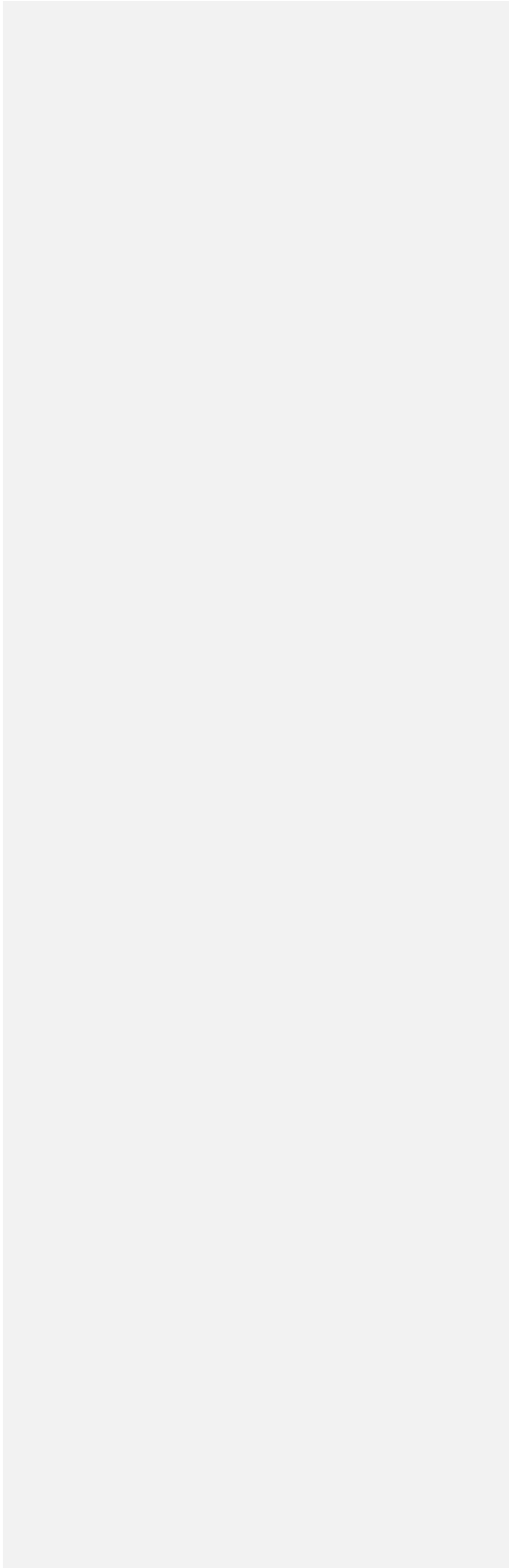


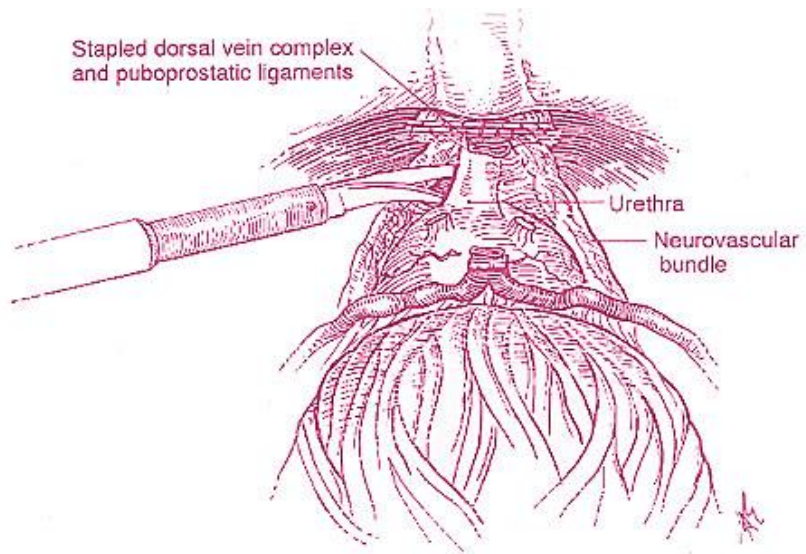
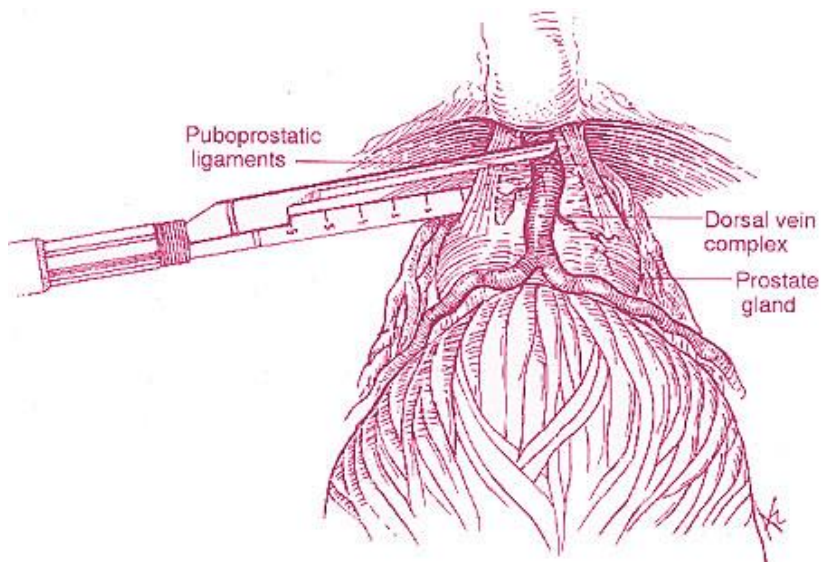


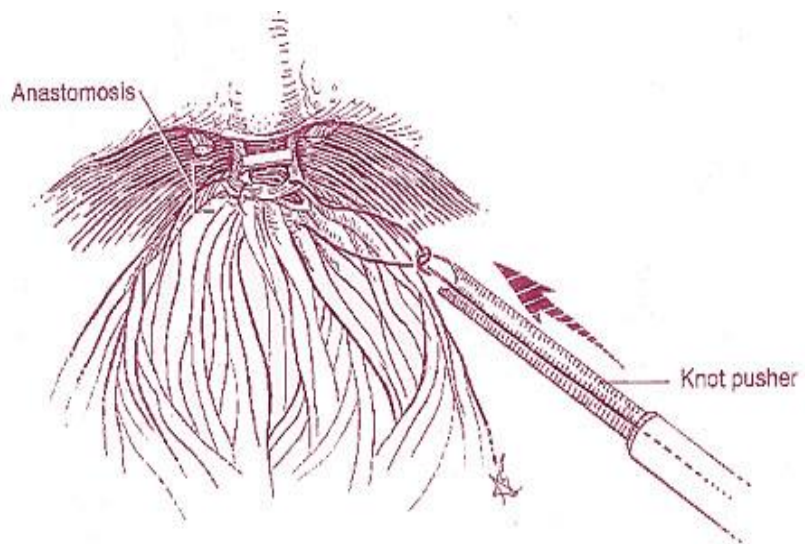
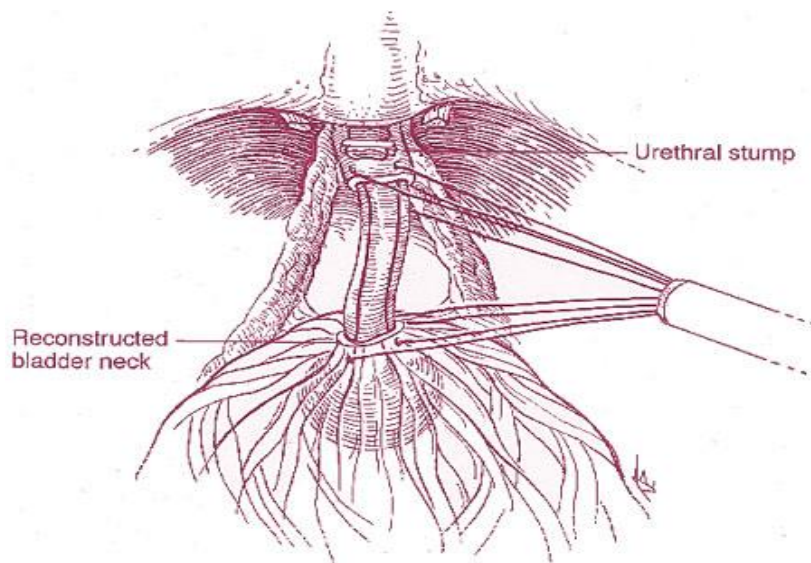
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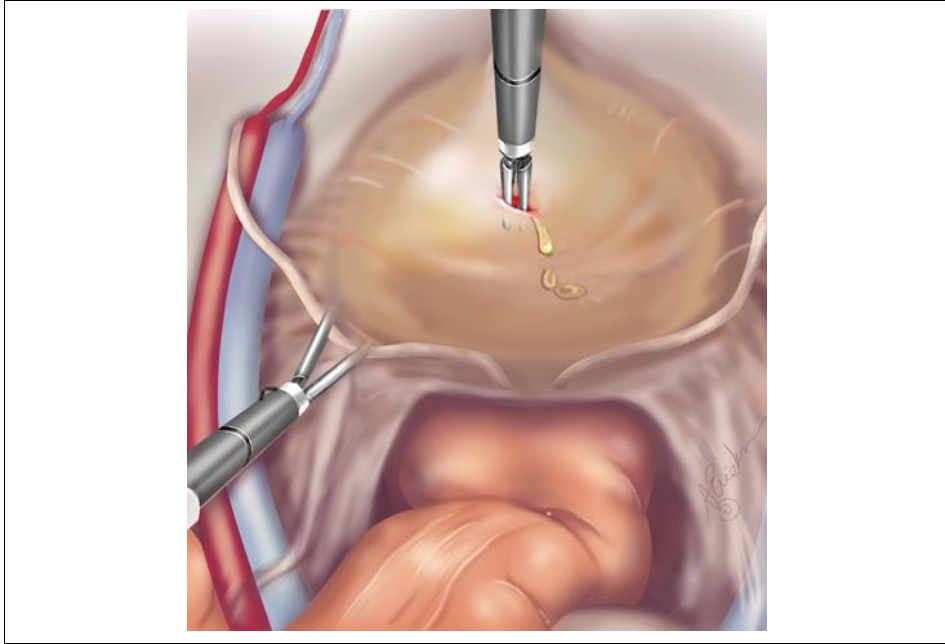


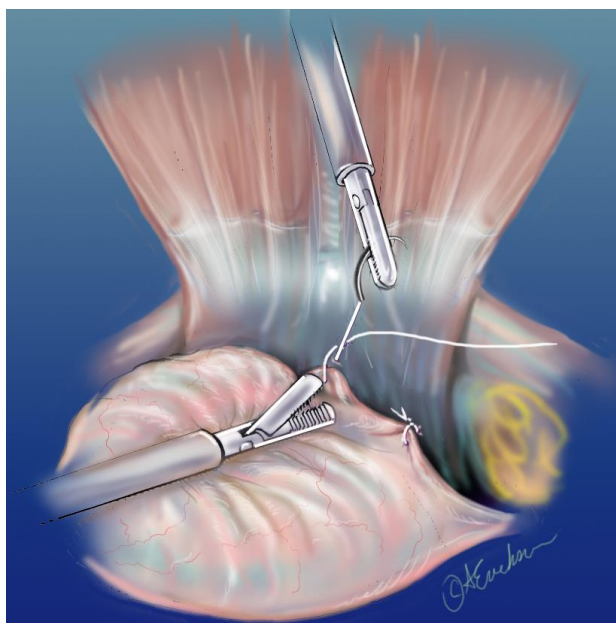
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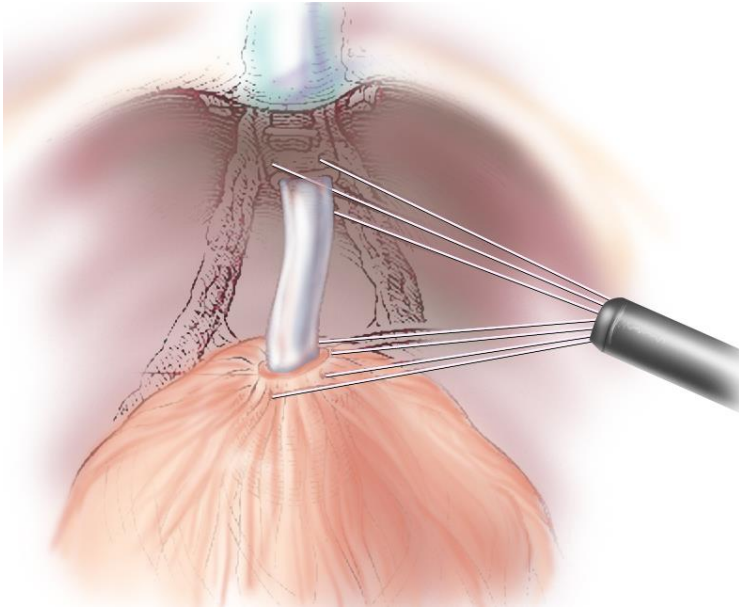


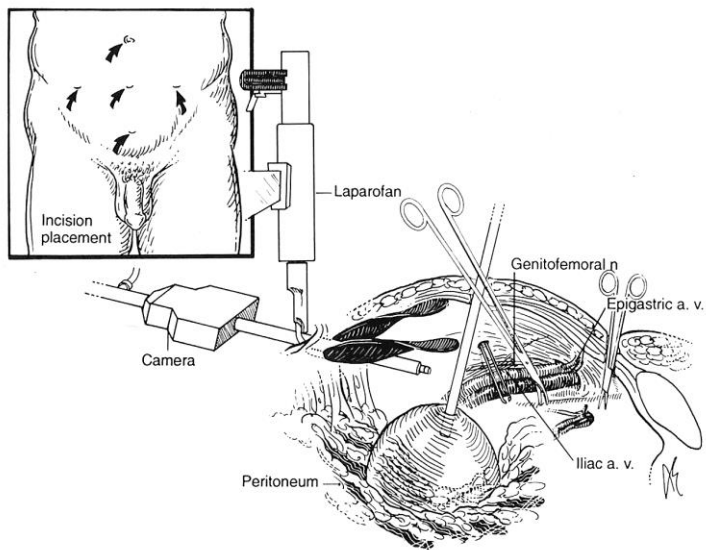
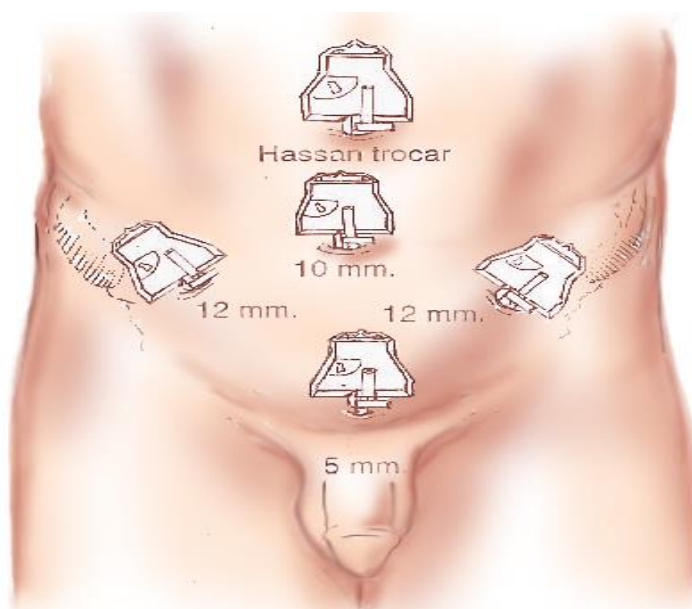


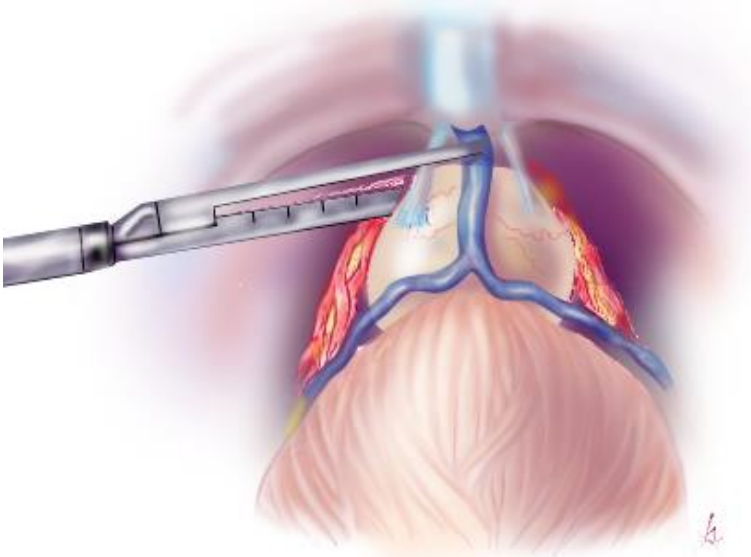
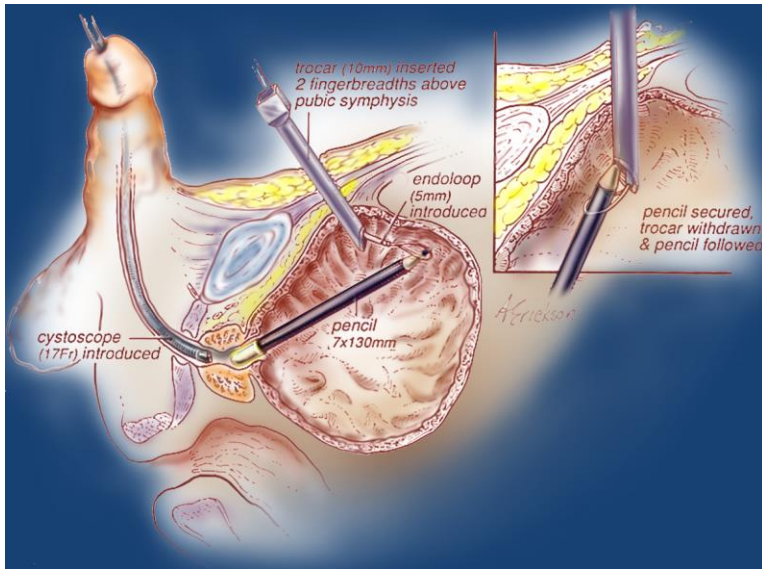


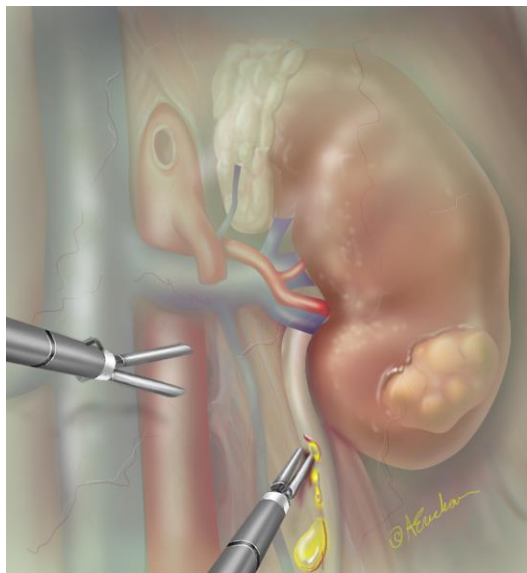
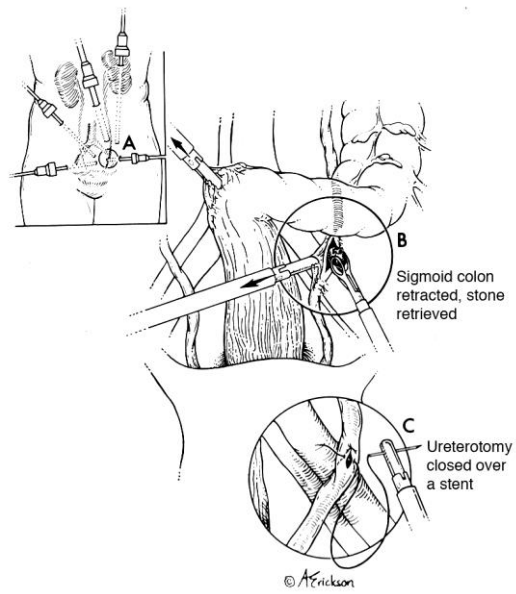


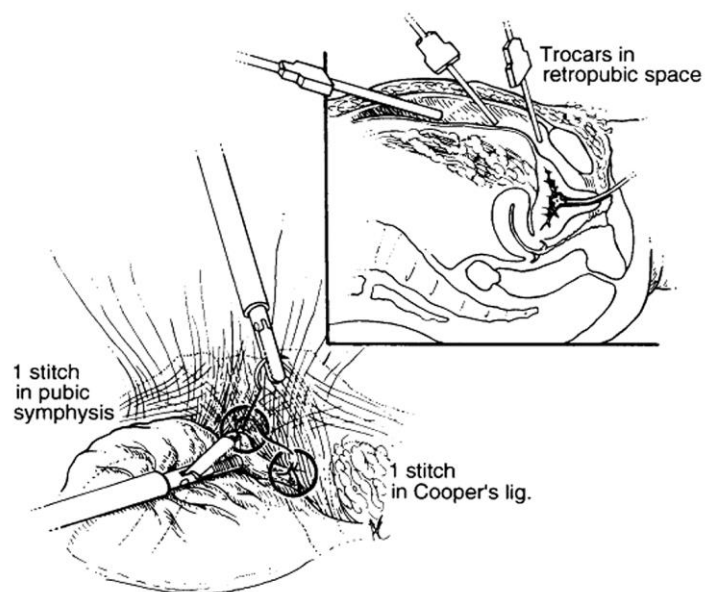


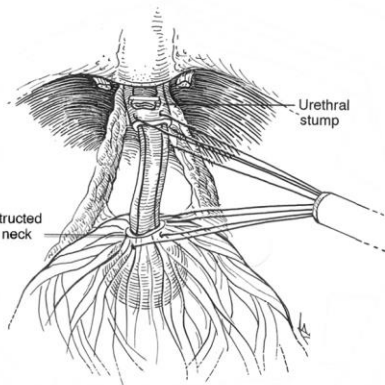
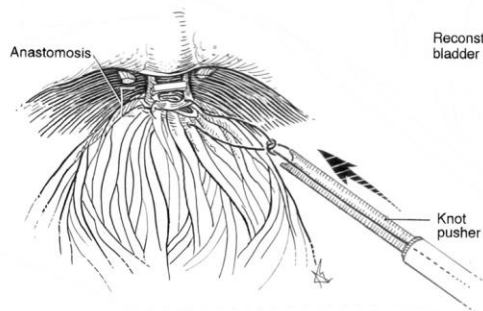
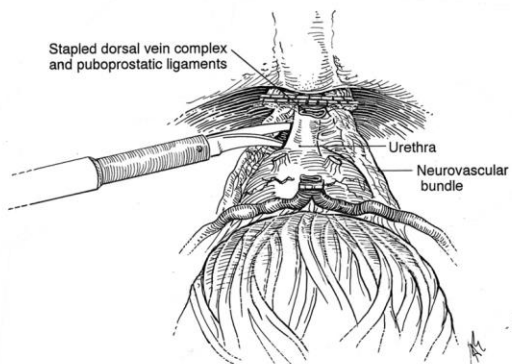
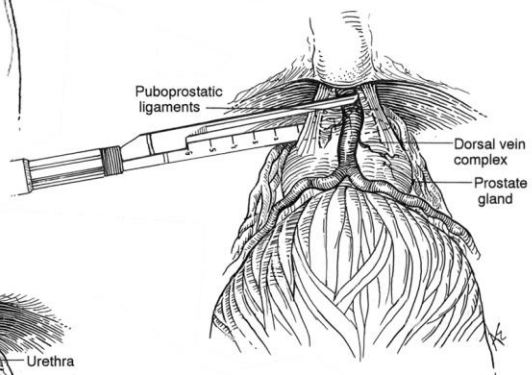
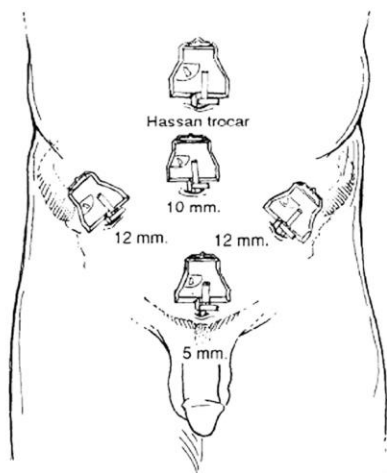








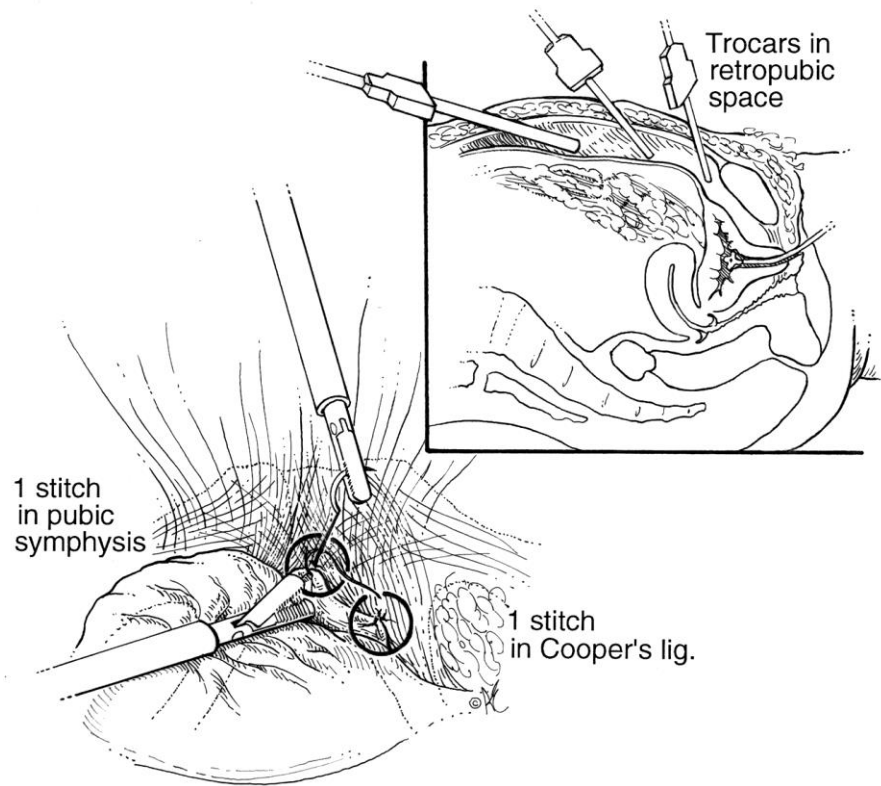


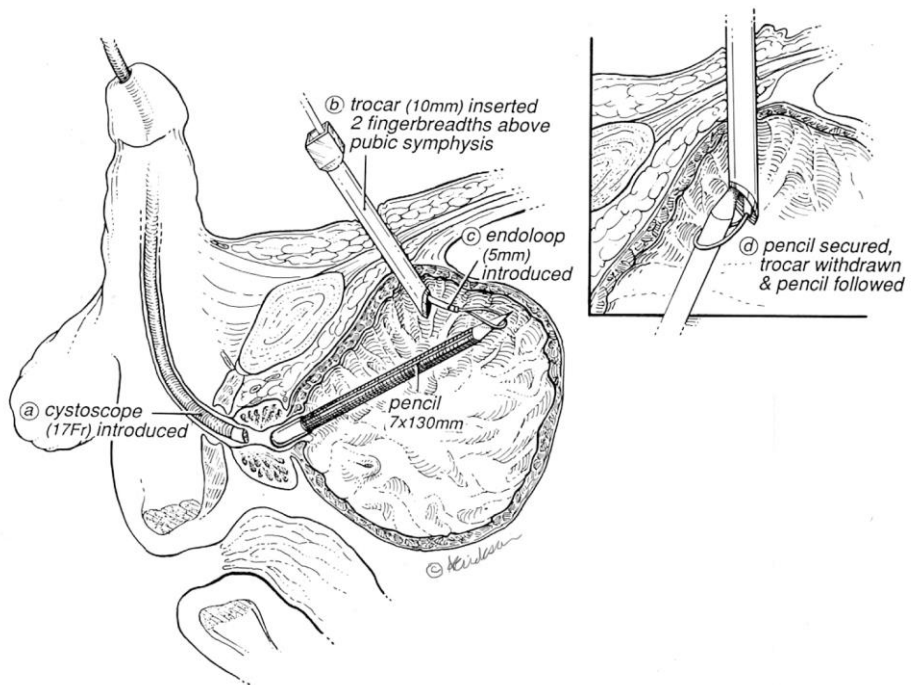


Urethral stump

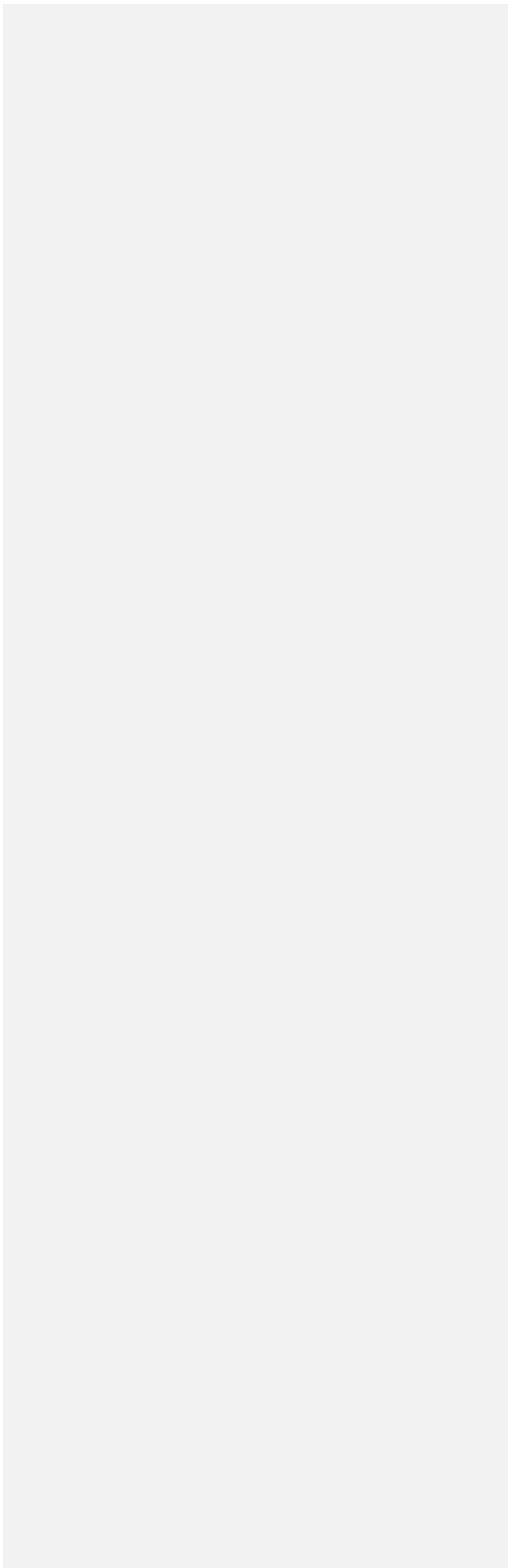
Reconstructed bladder neck

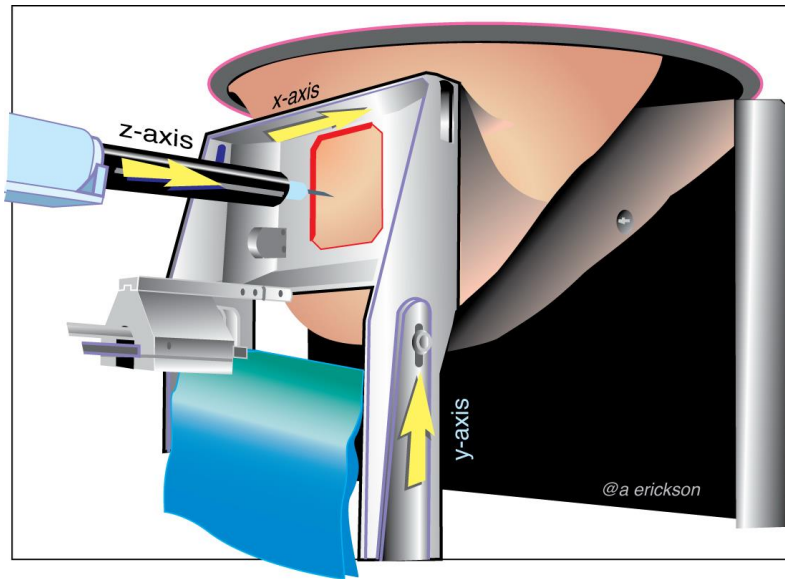
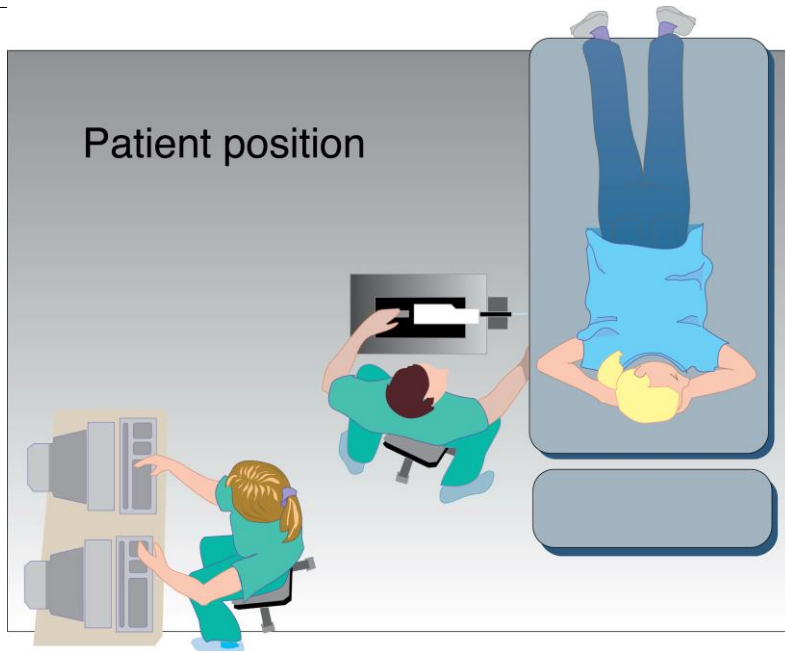
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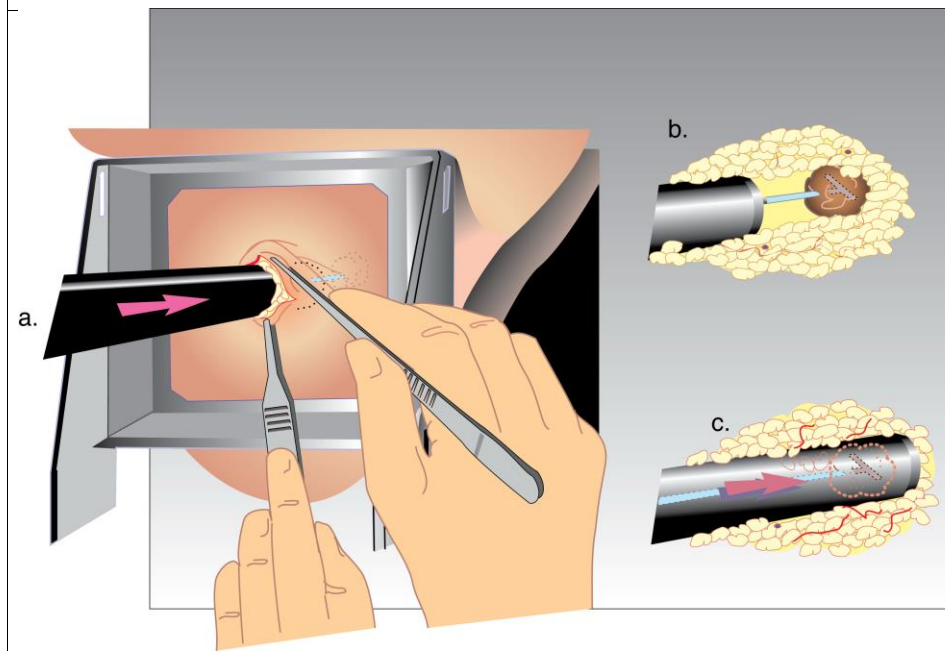
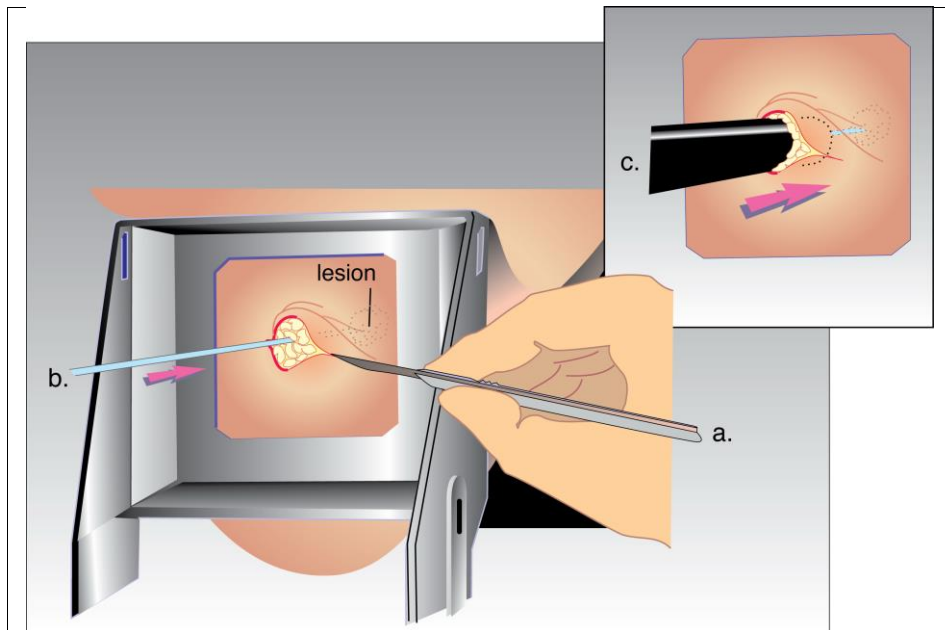


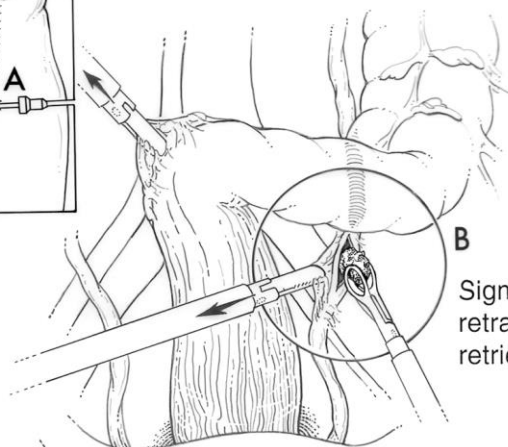
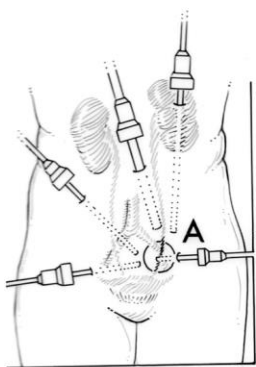


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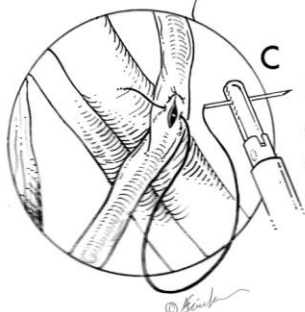








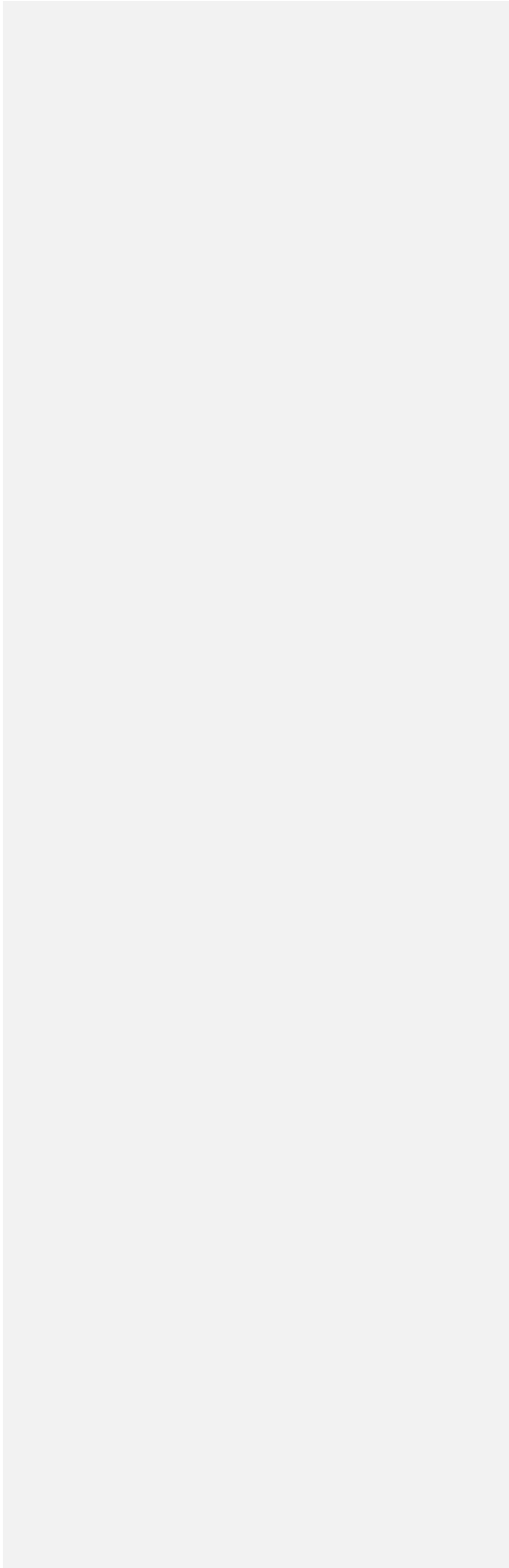
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Sigmoid colon
retracted, stone
retrieved

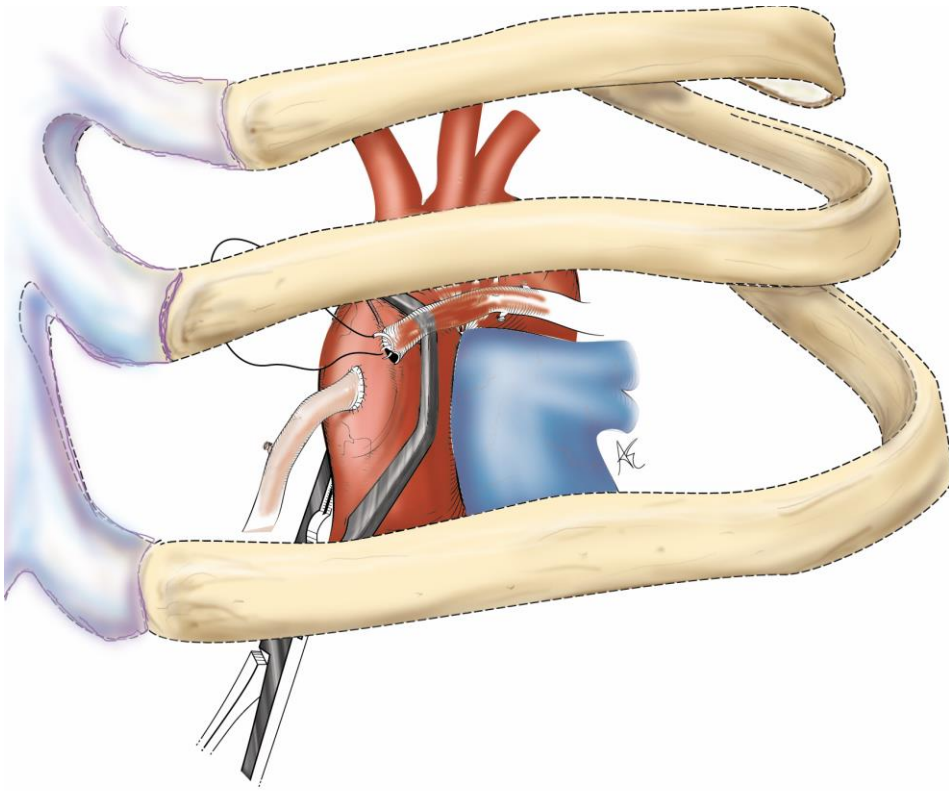


C
Ureterotomy
closed over
a stent

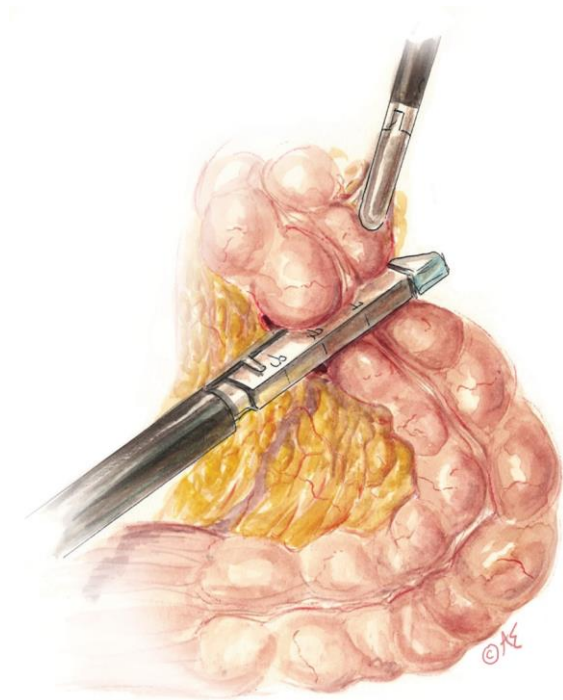
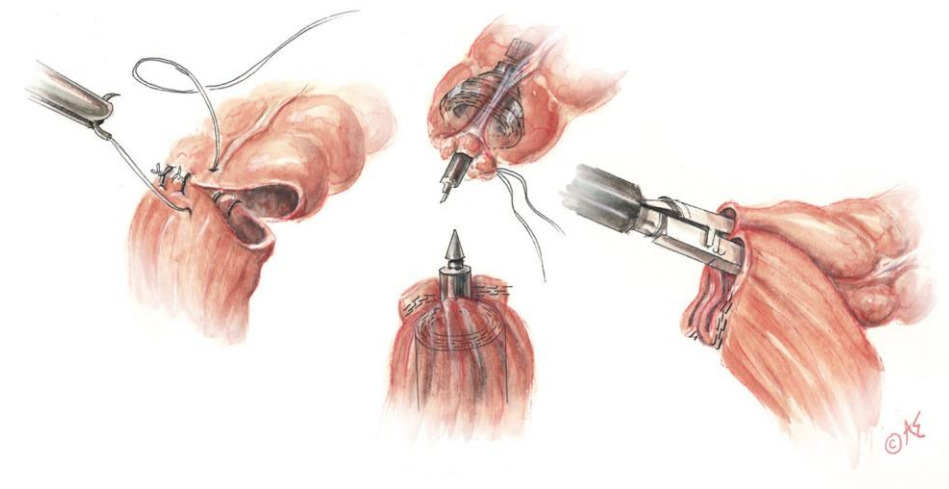
© Bink

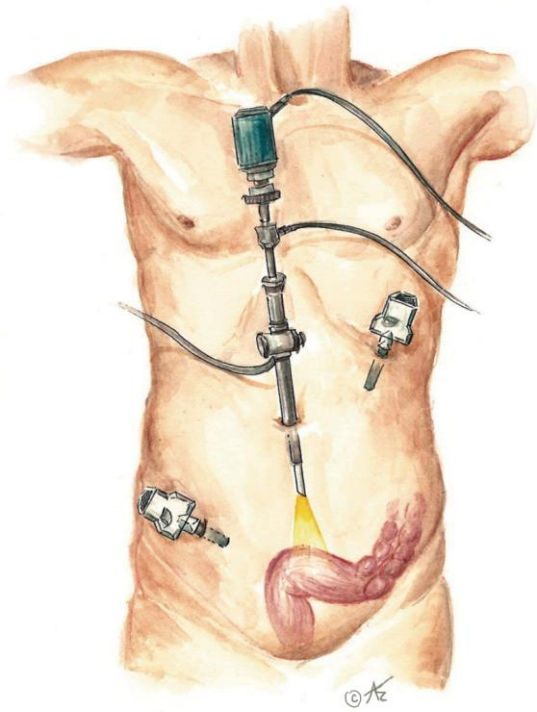
Cardio

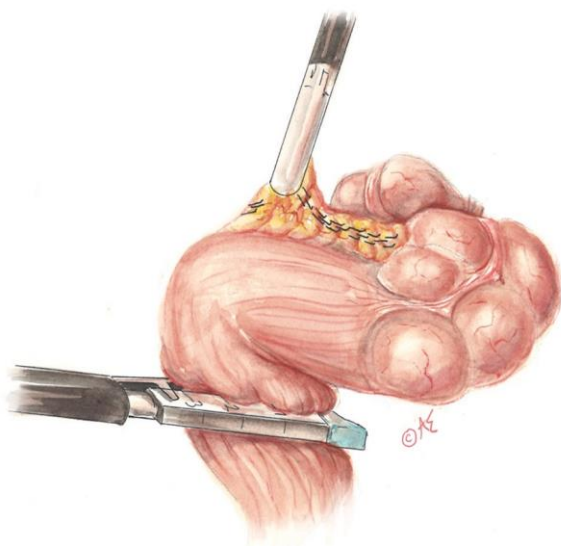
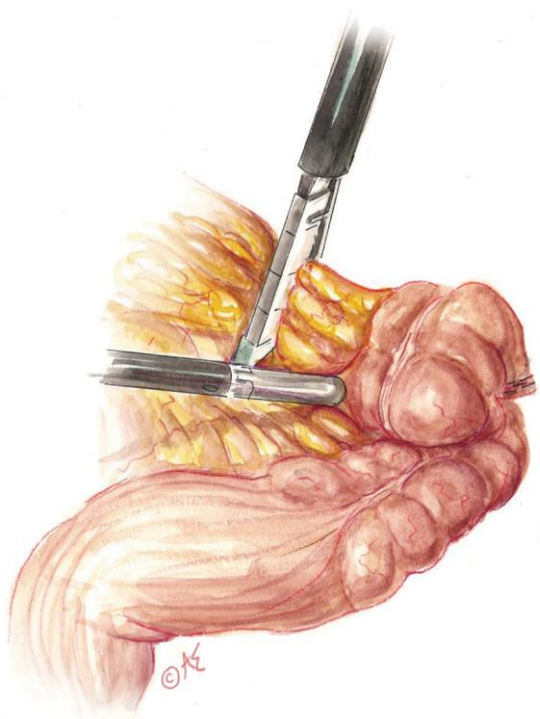


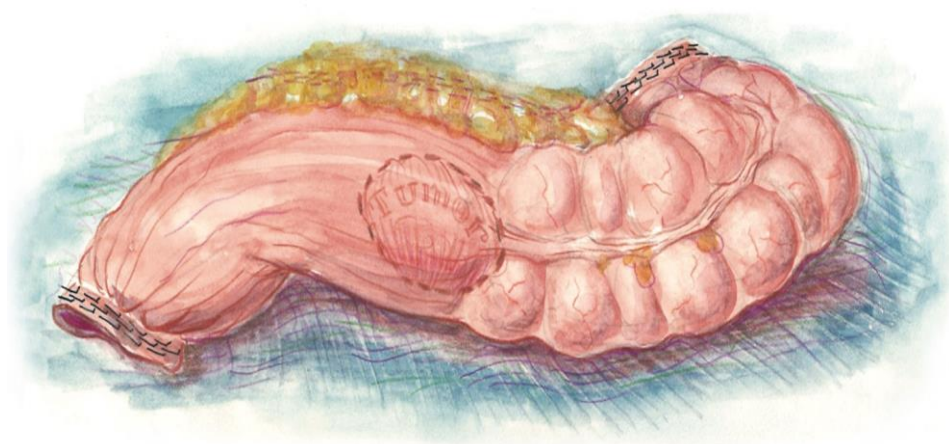


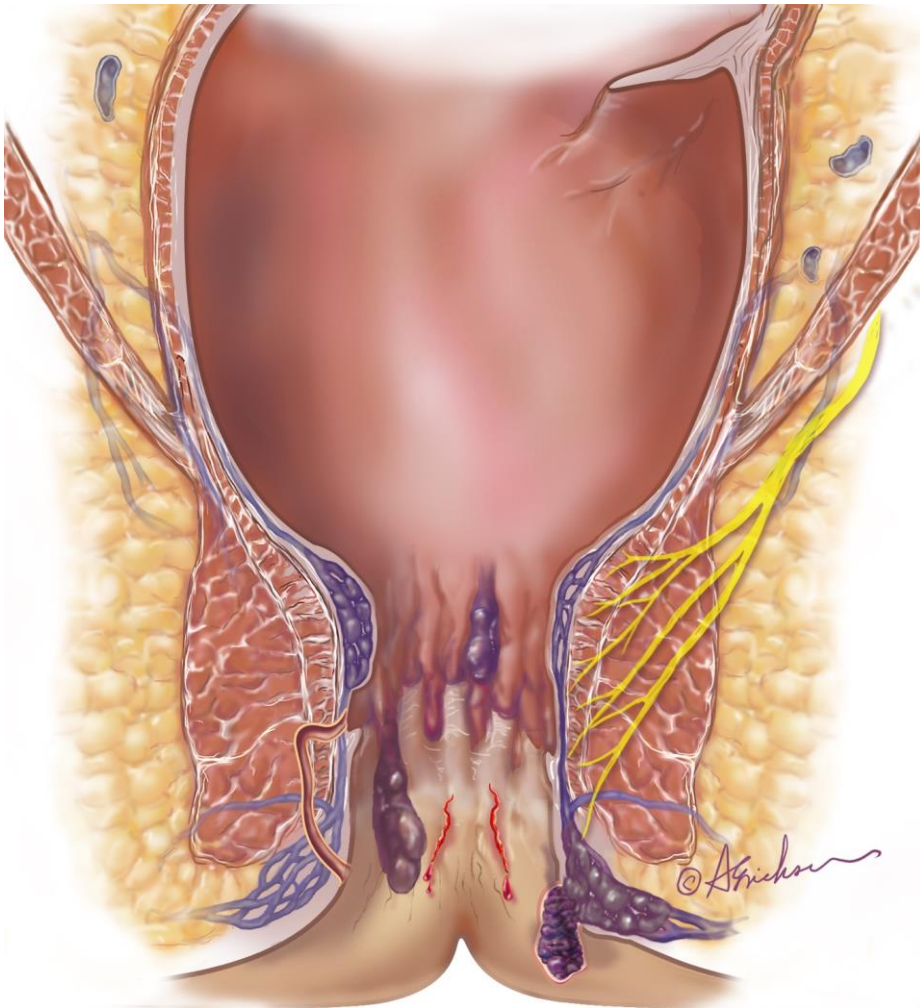
Colon and Hemorrhoids

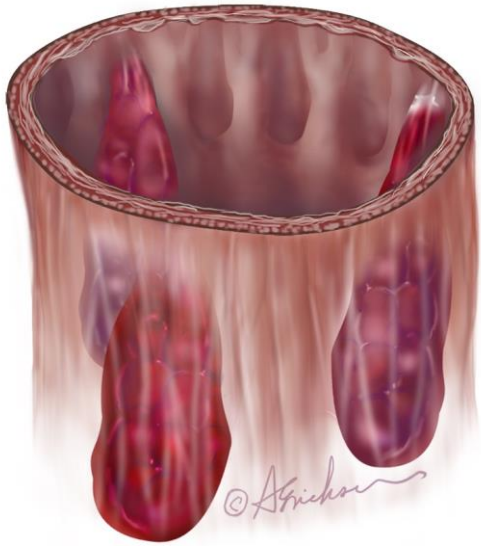


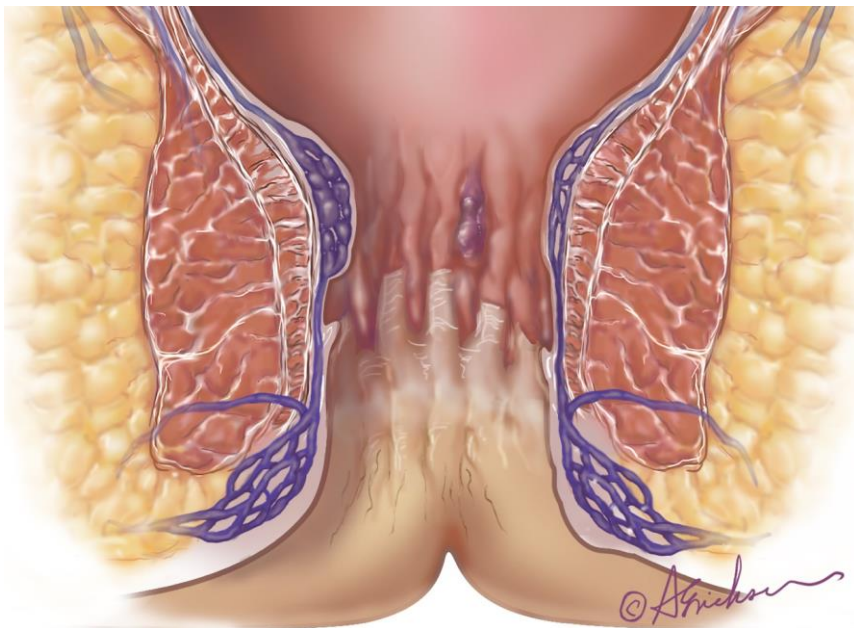


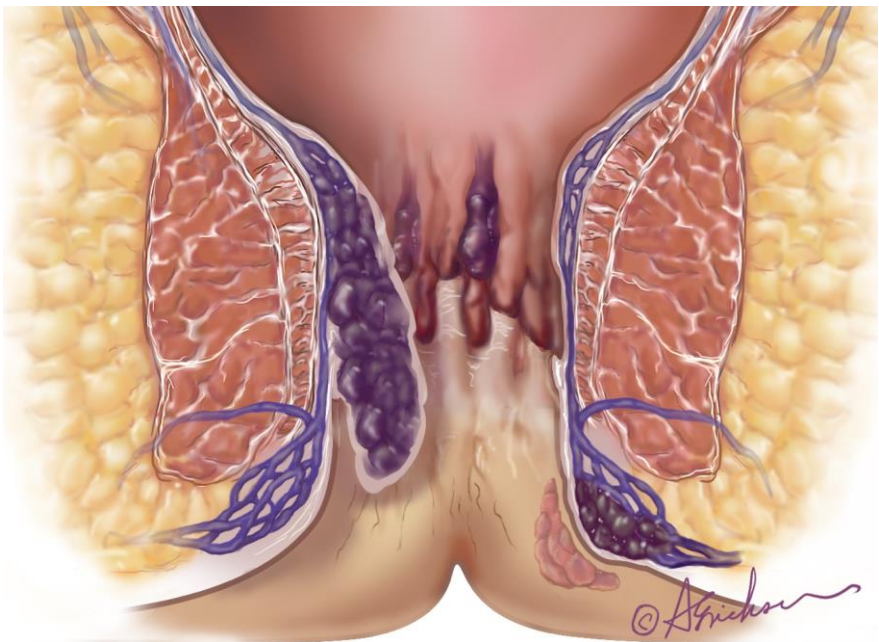
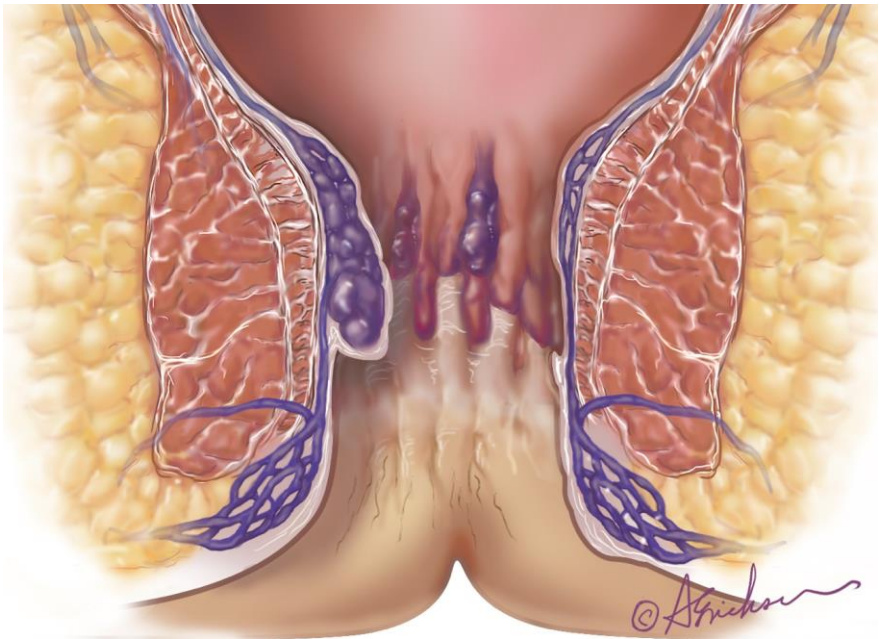


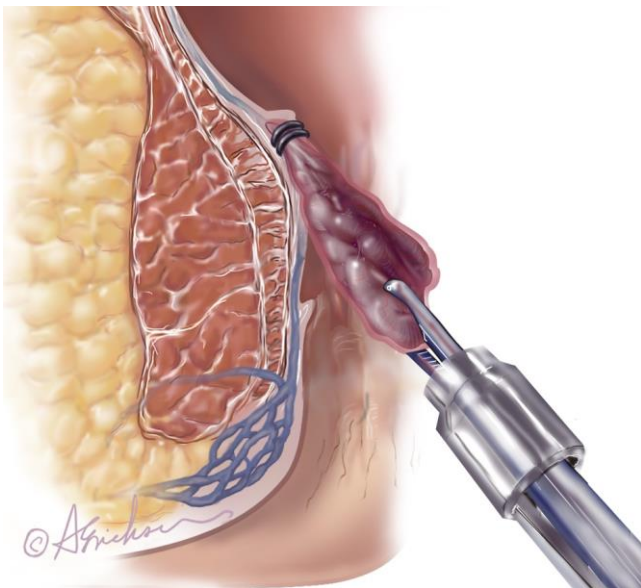
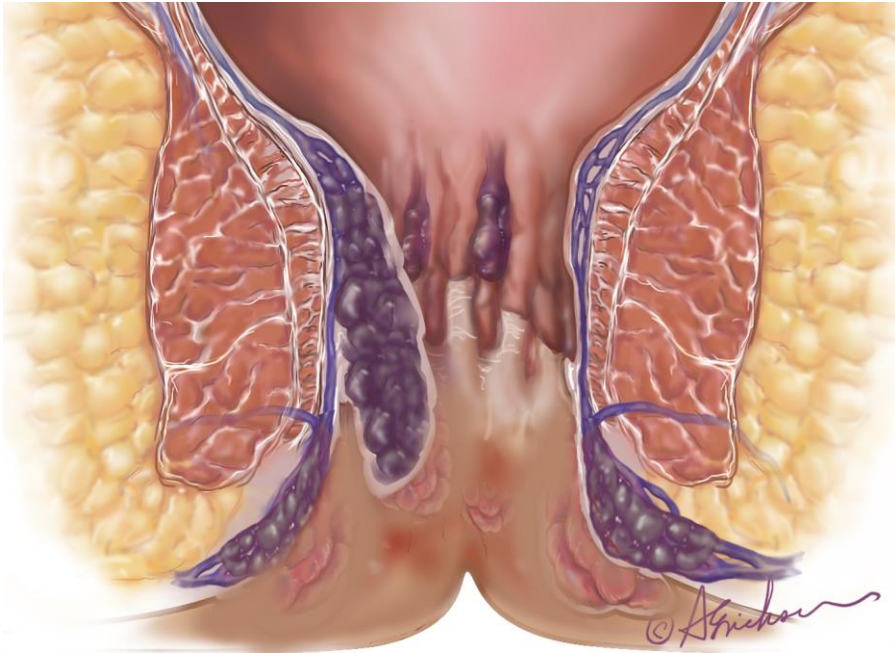


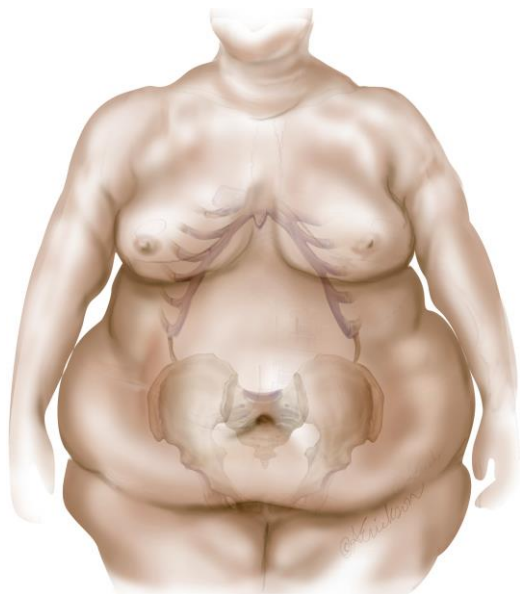
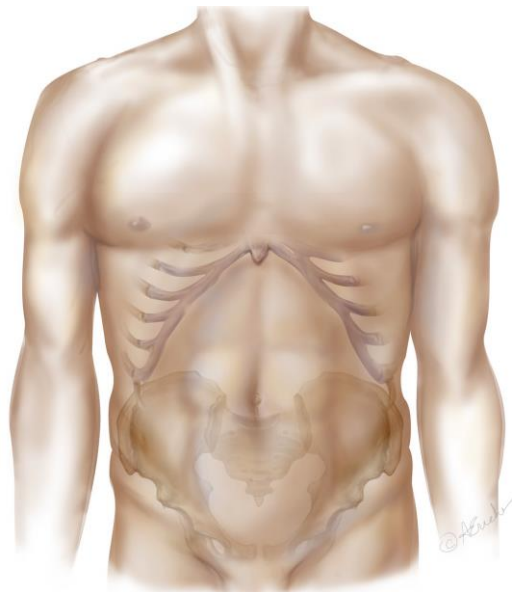


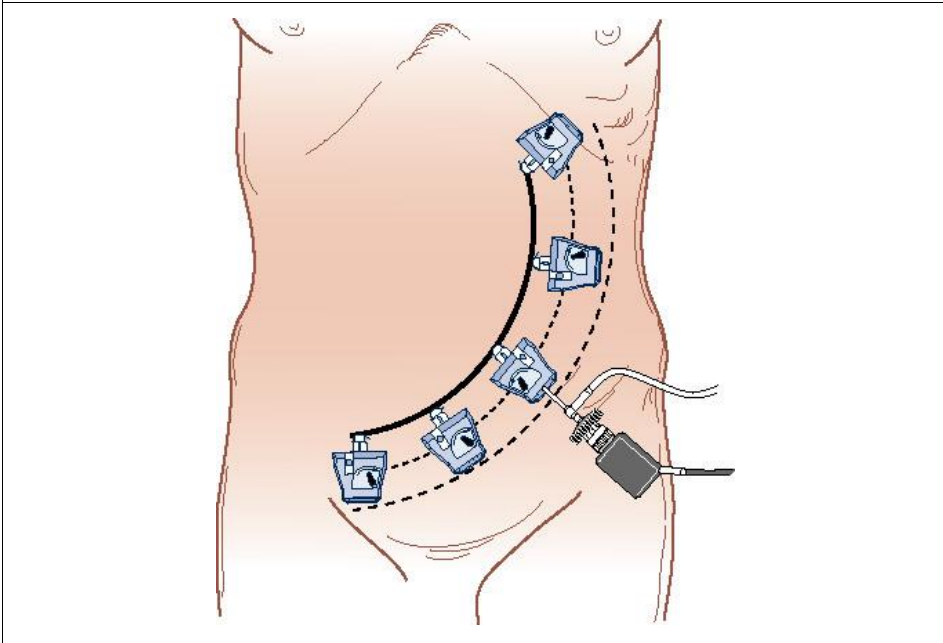
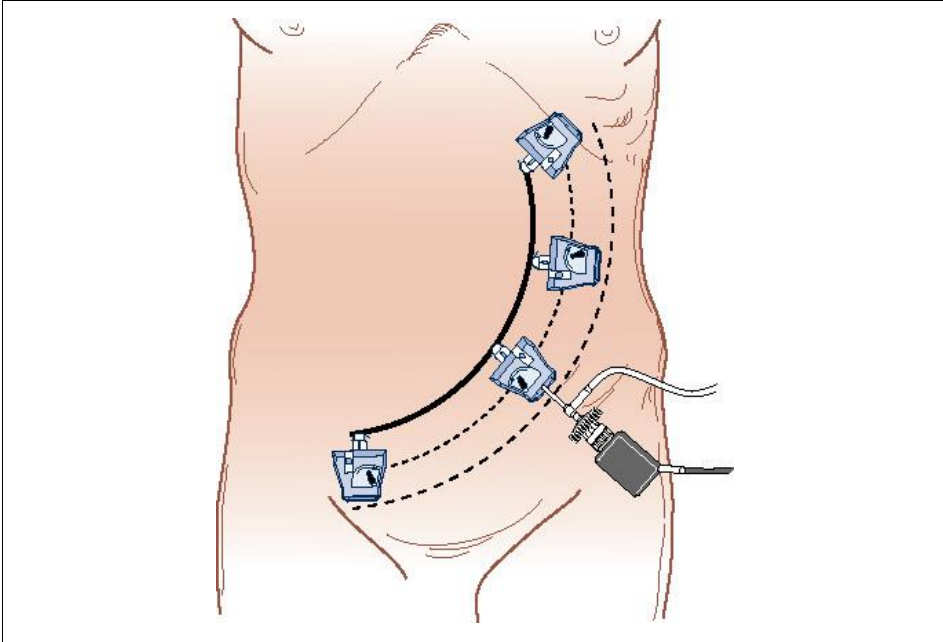


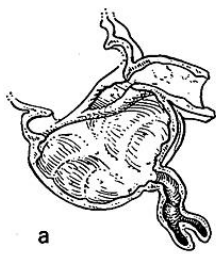








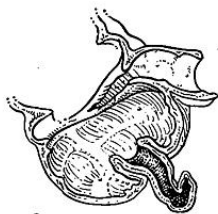




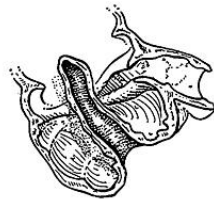
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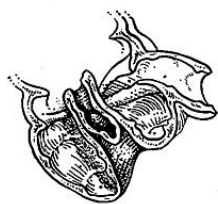
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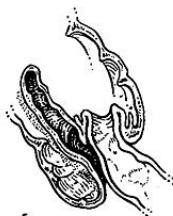
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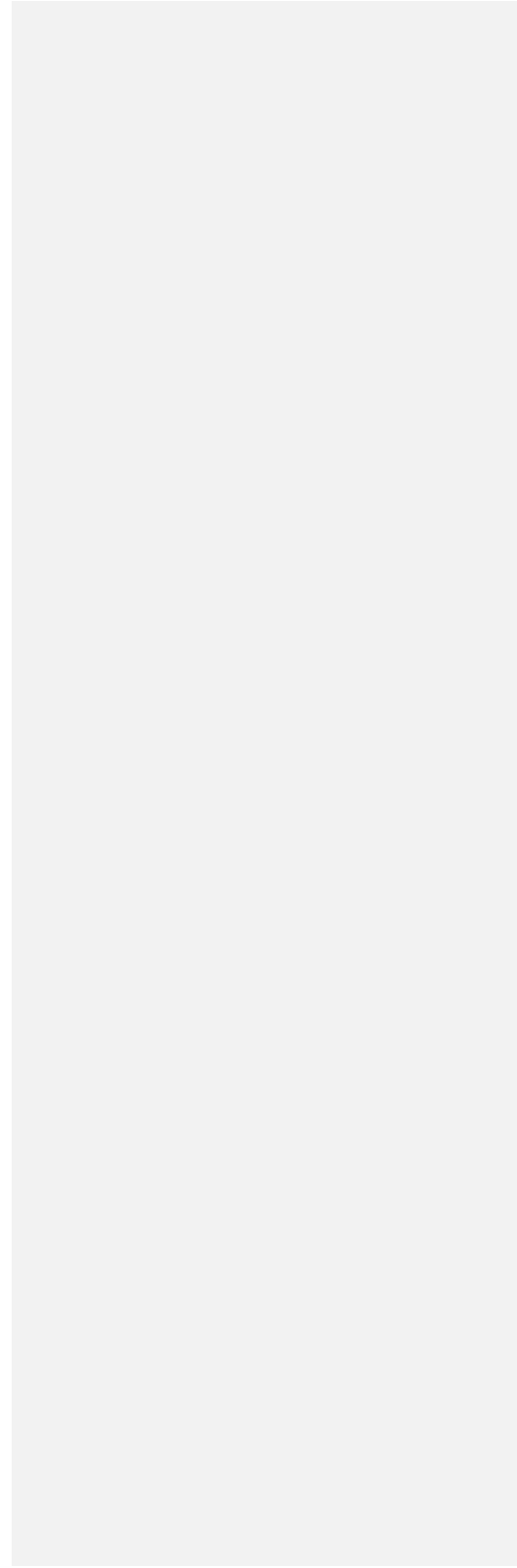
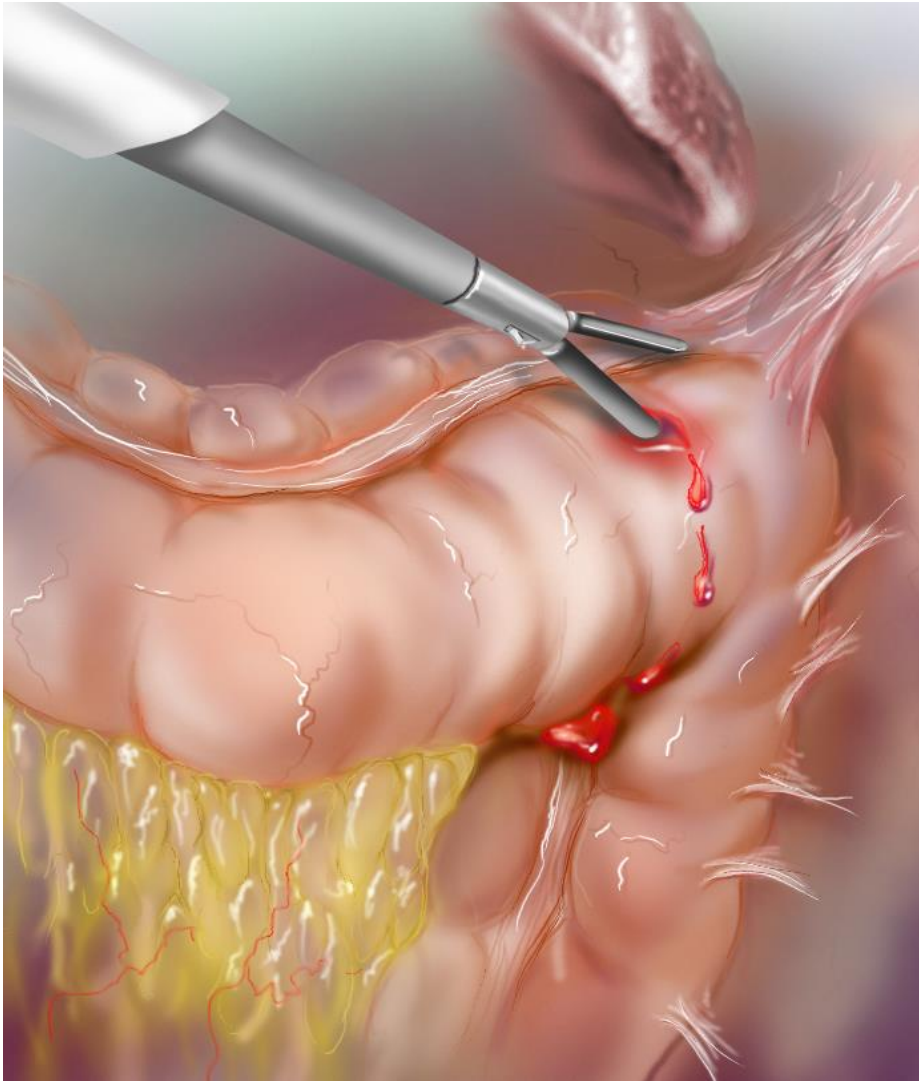
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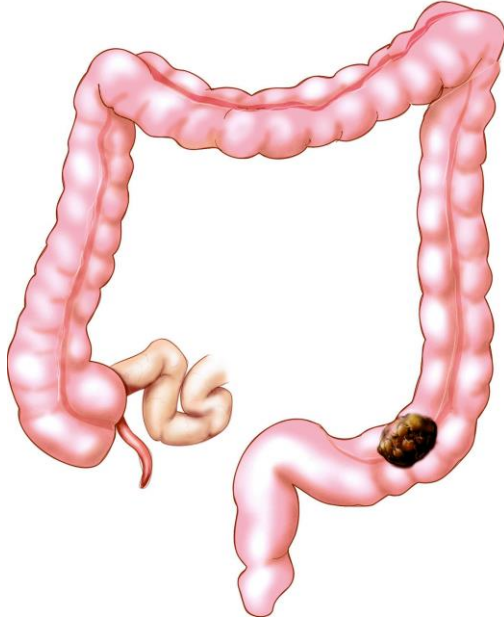
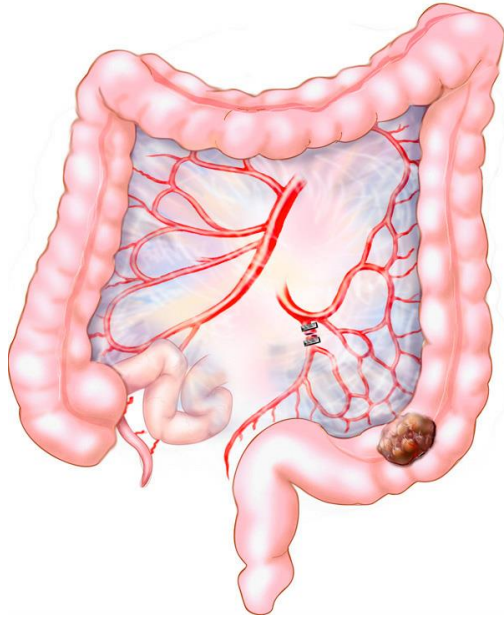


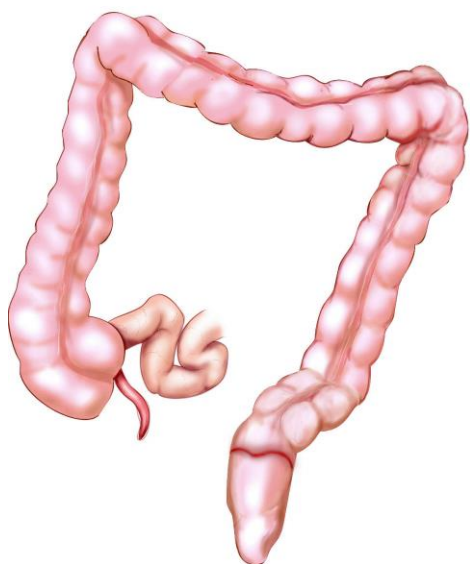
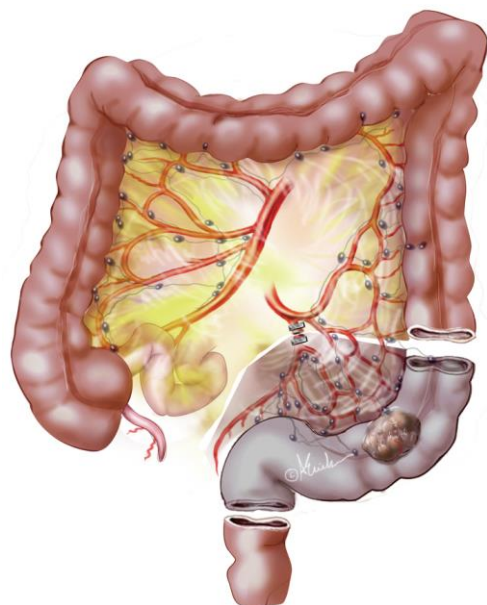
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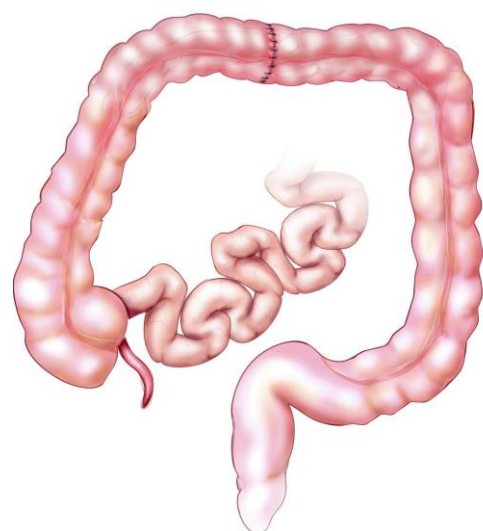
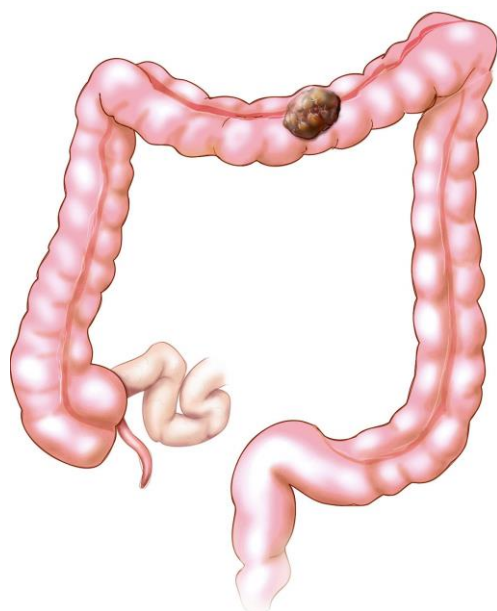


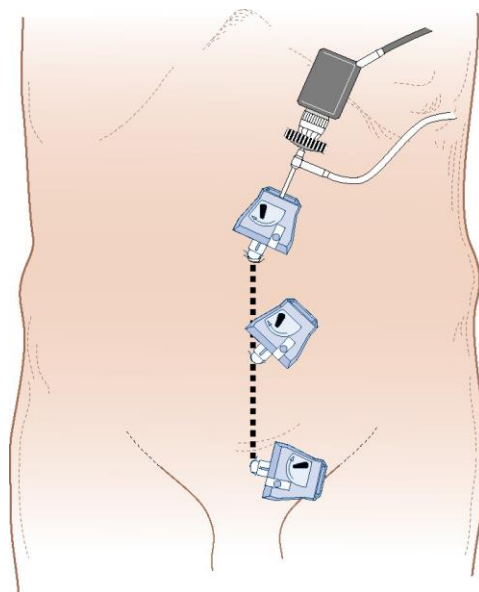
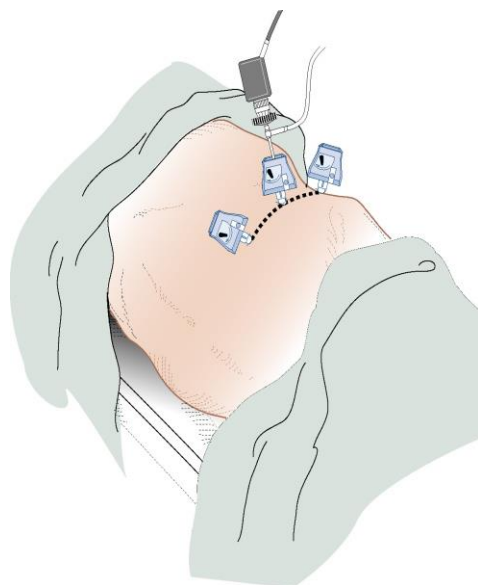
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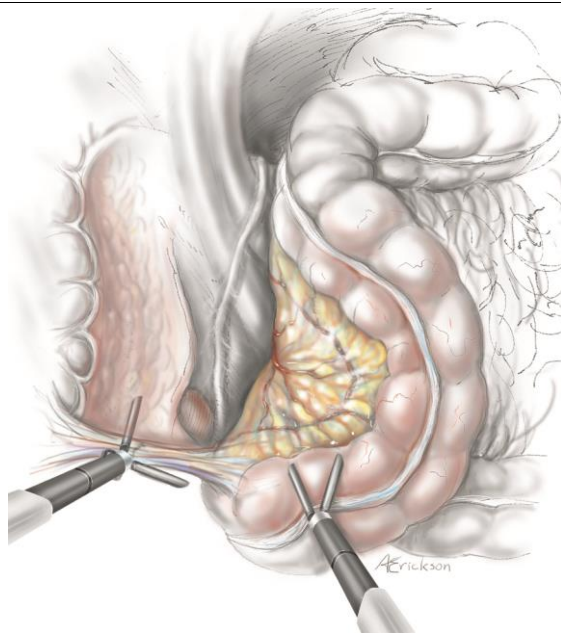
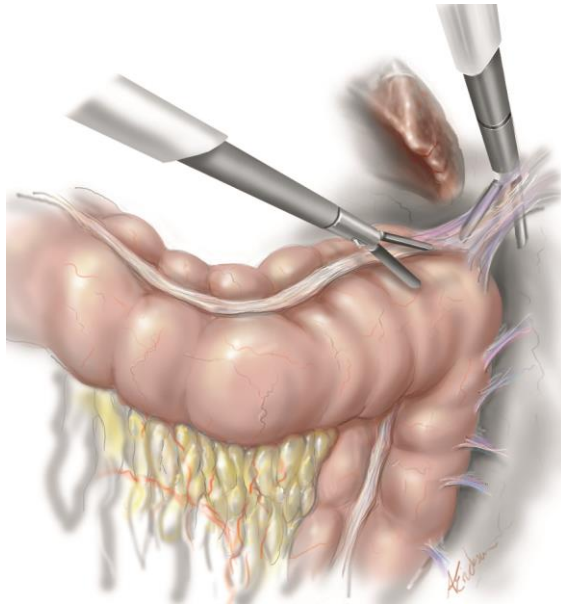


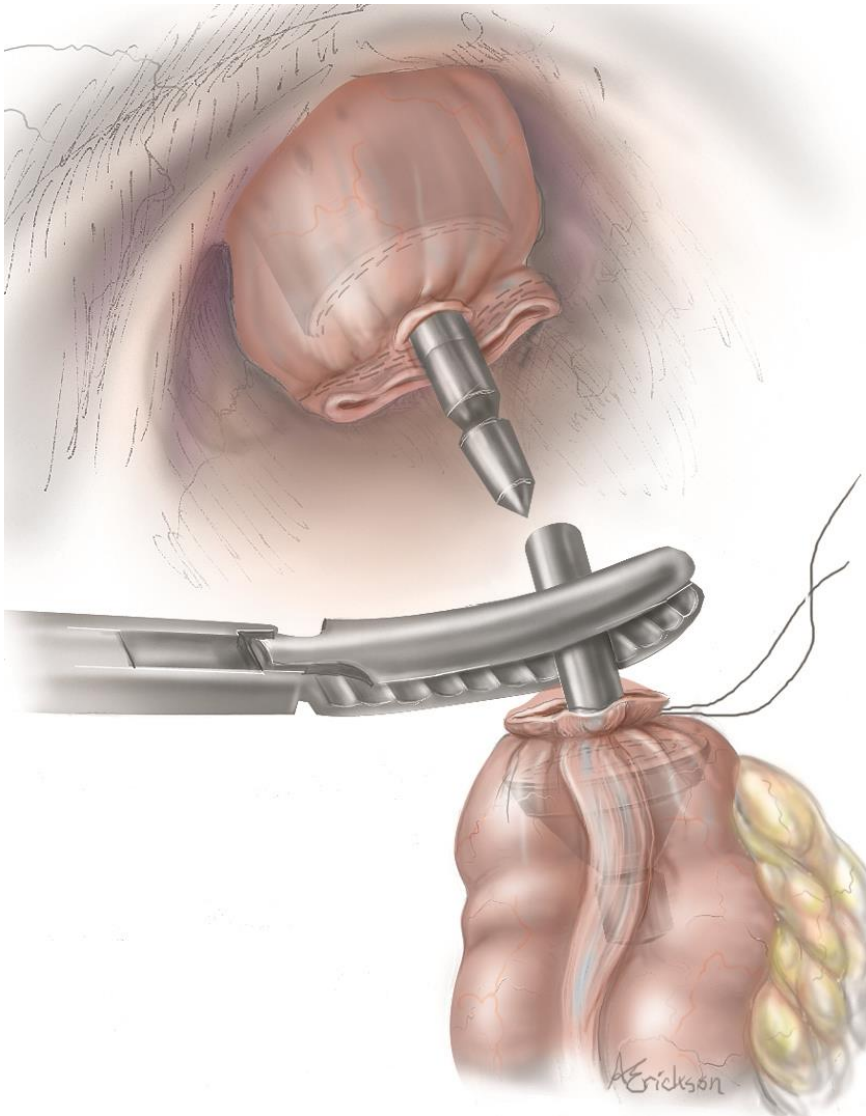












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Monitor

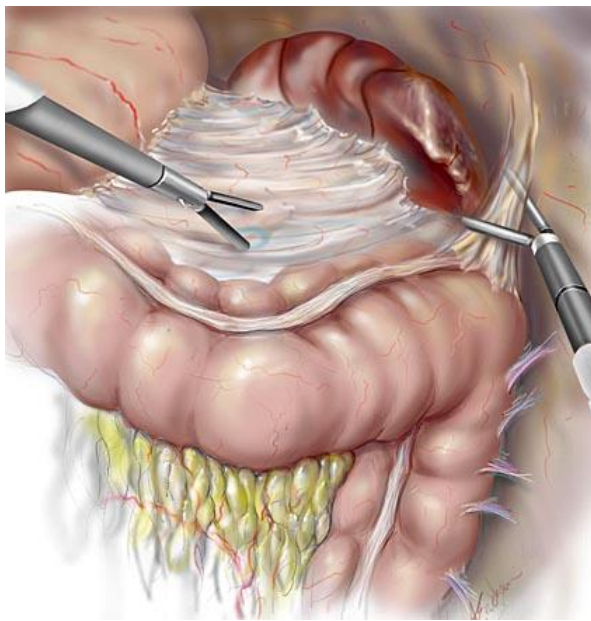
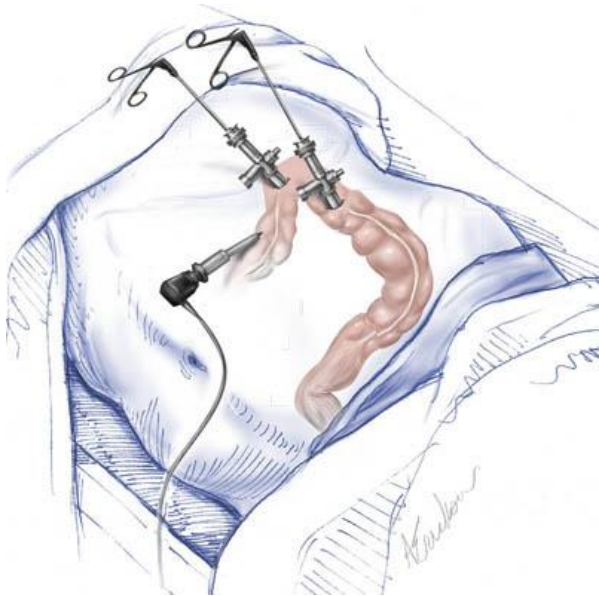


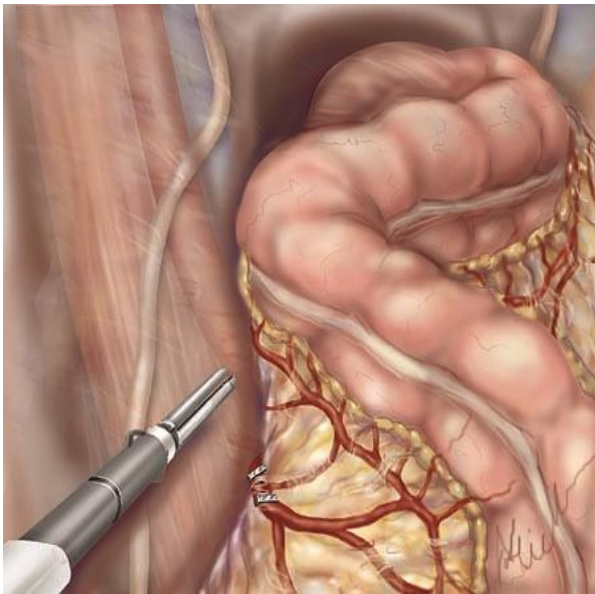
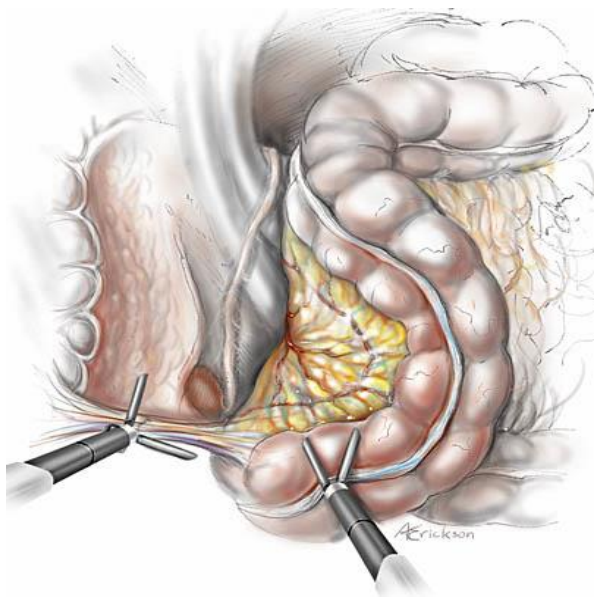
Surgeon

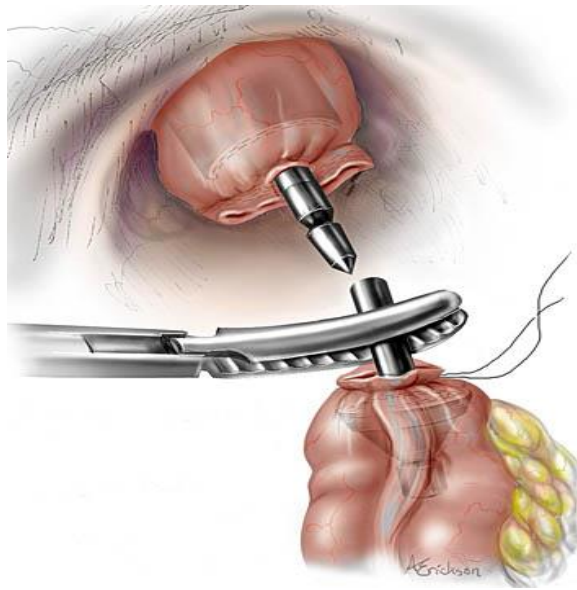
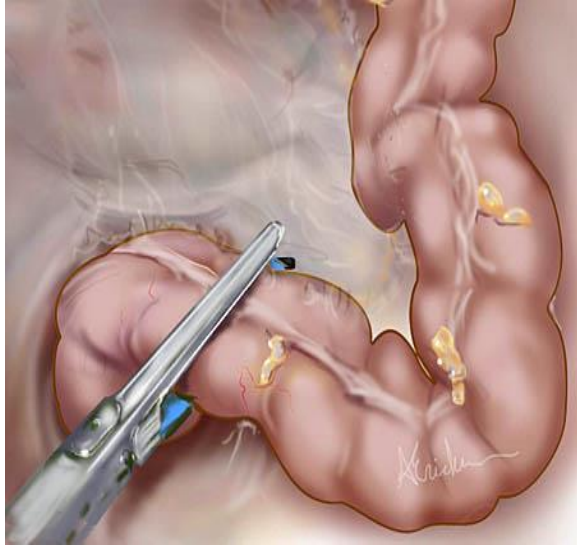
Assistant surgeon

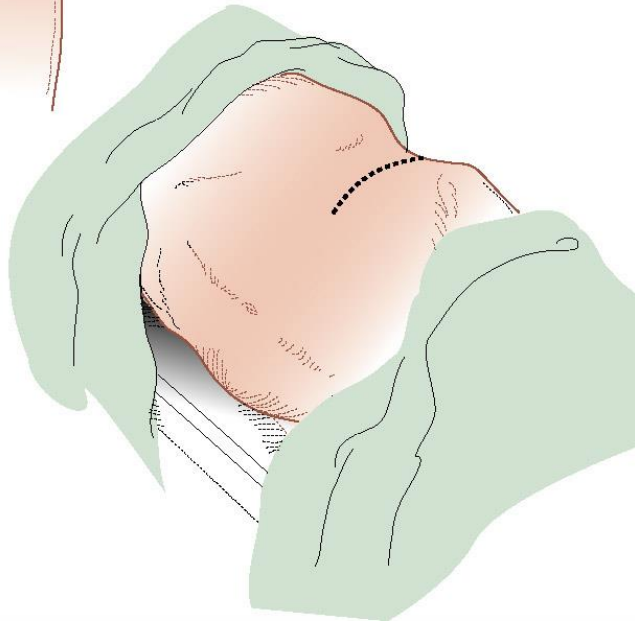
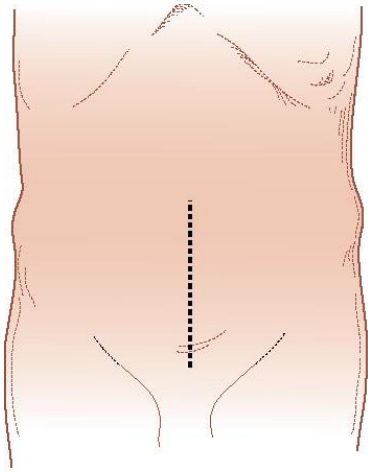


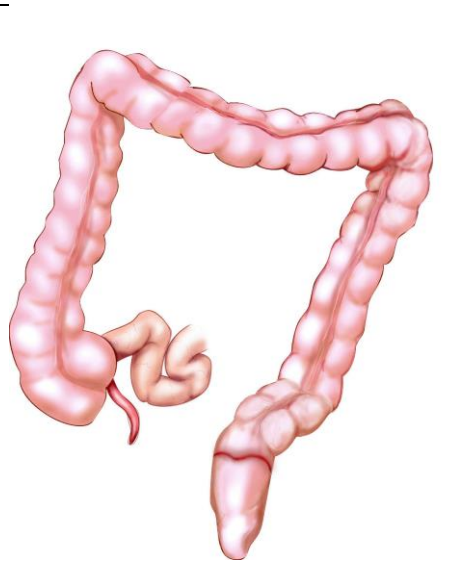
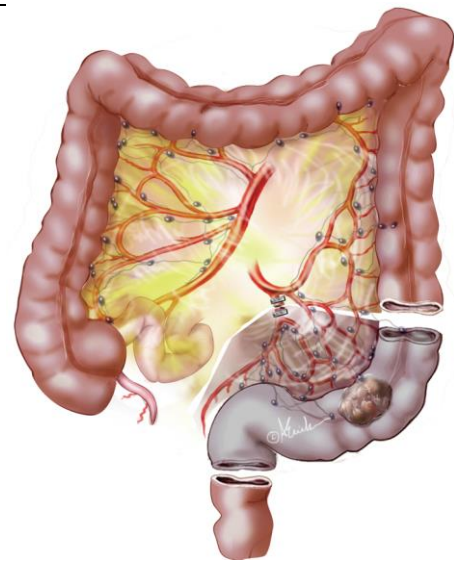
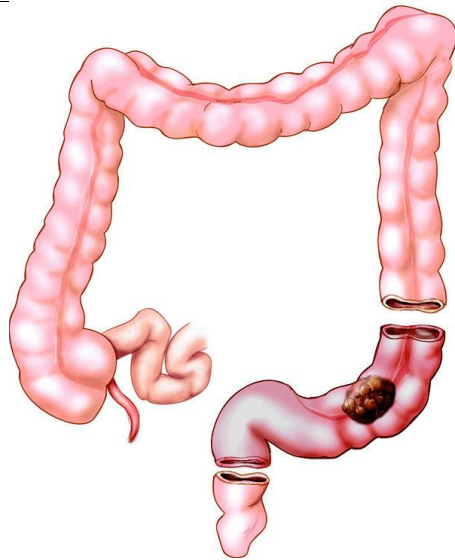
Monitor

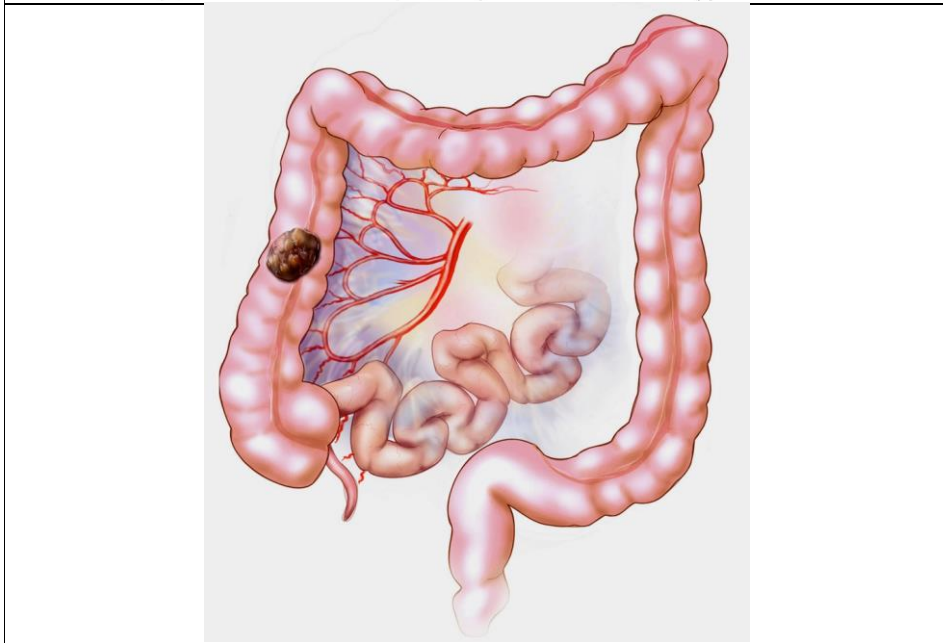
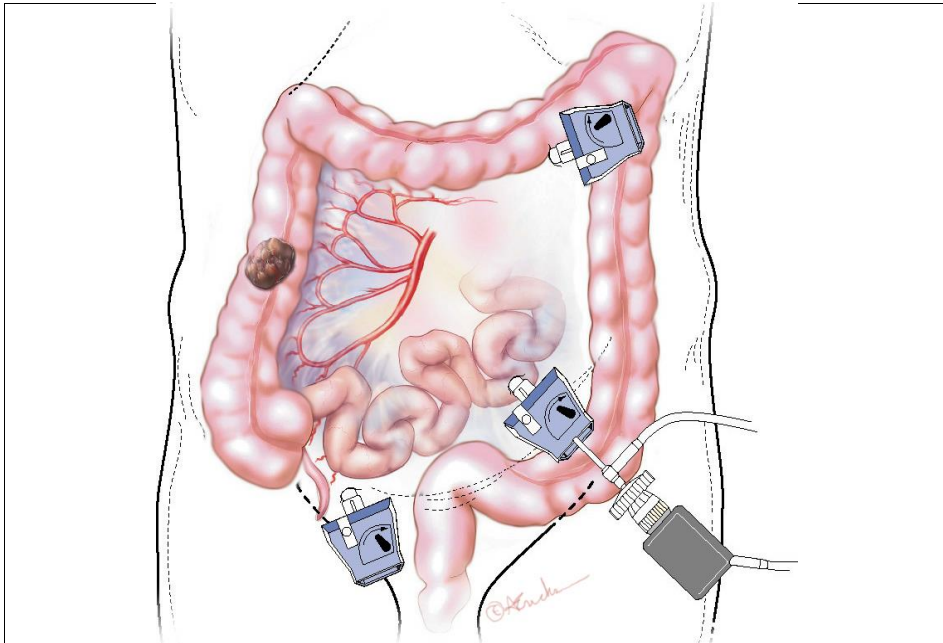


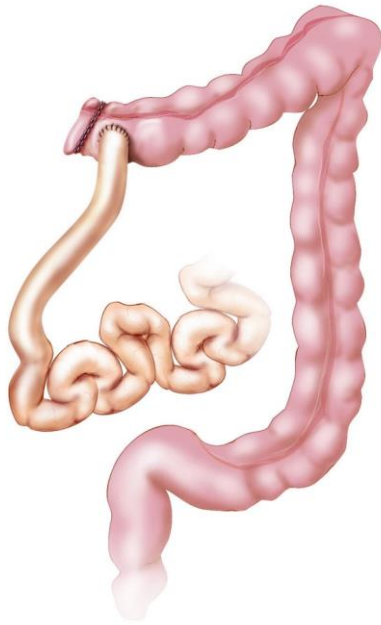
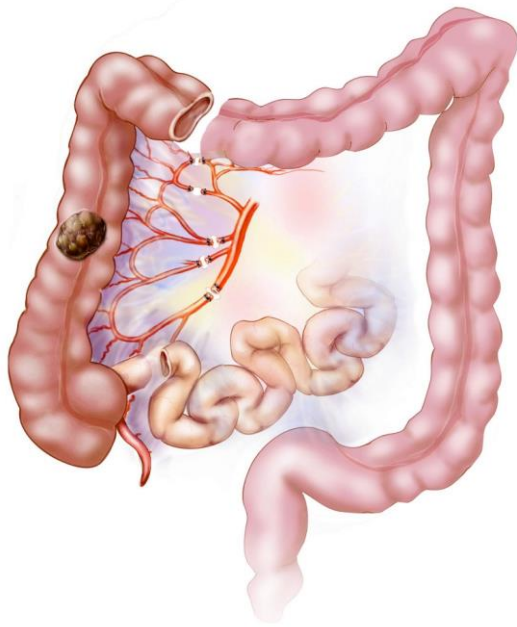




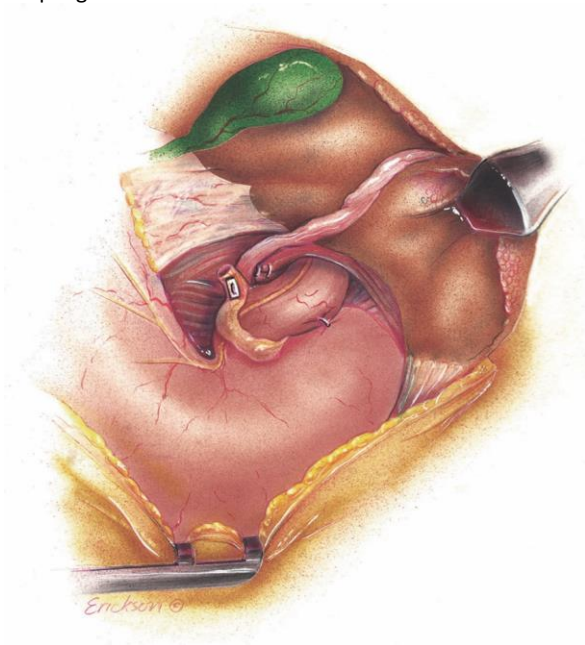


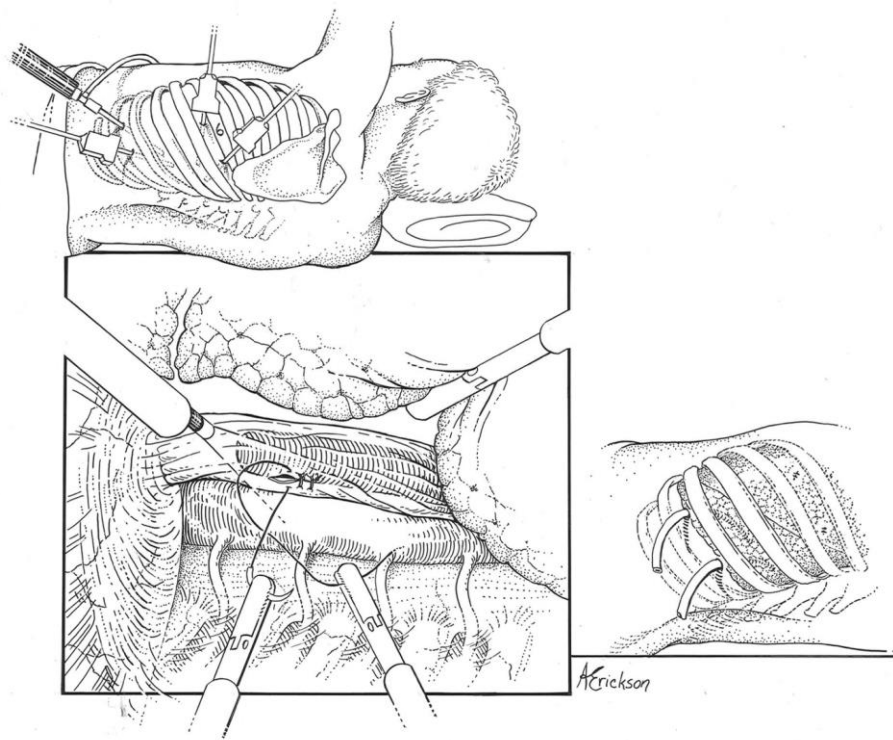


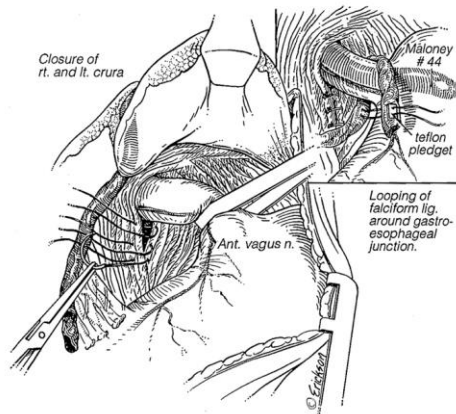
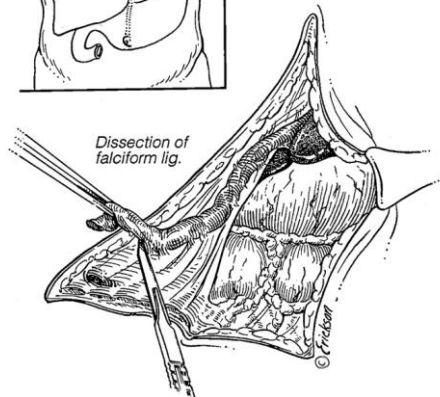
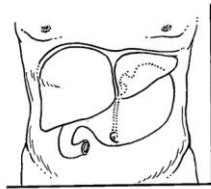




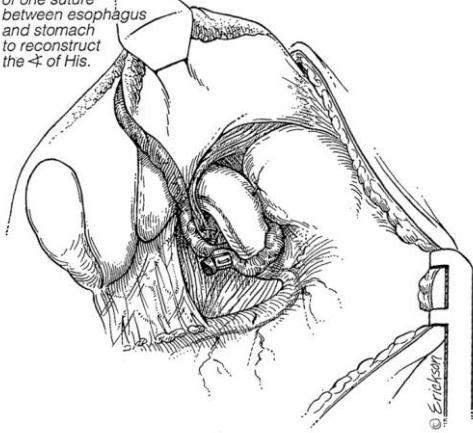
Esophagus

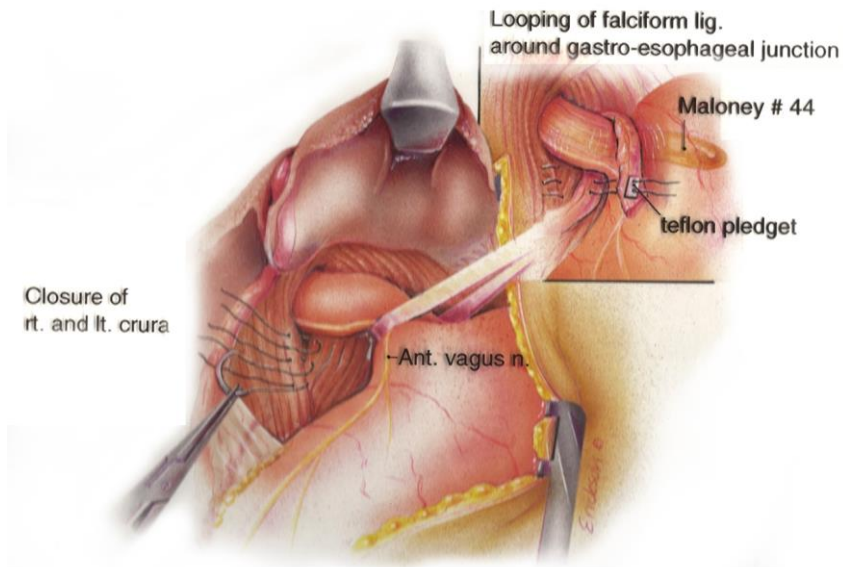
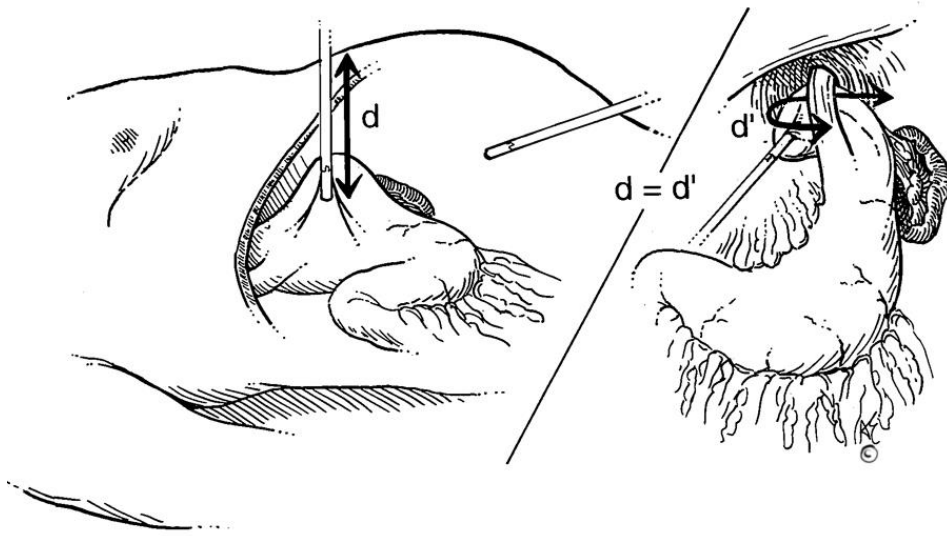


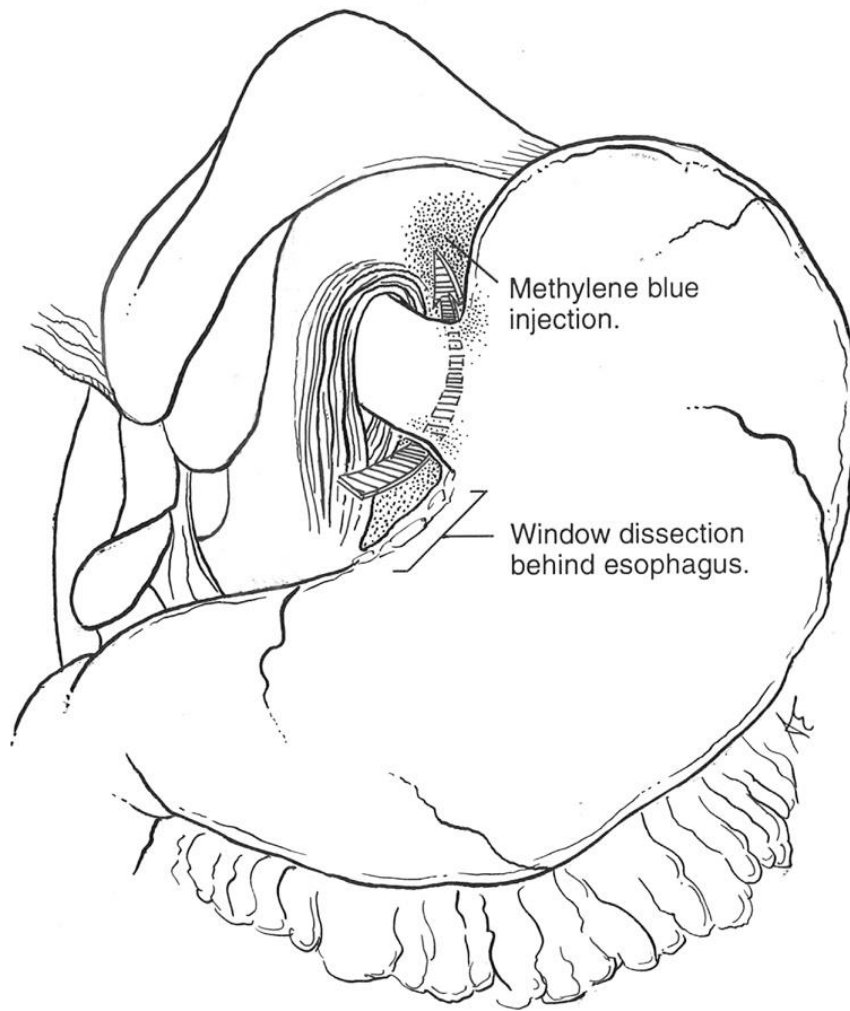


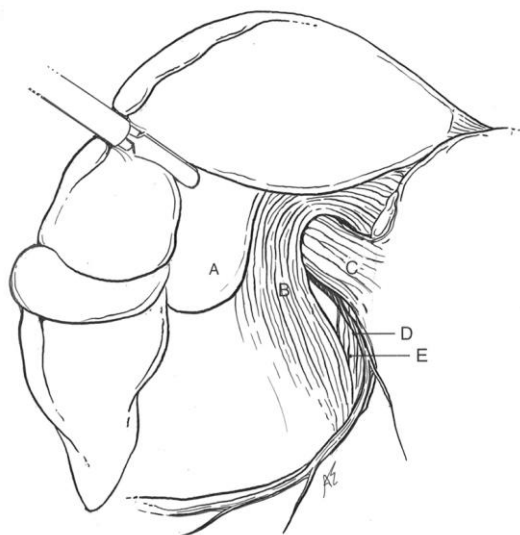
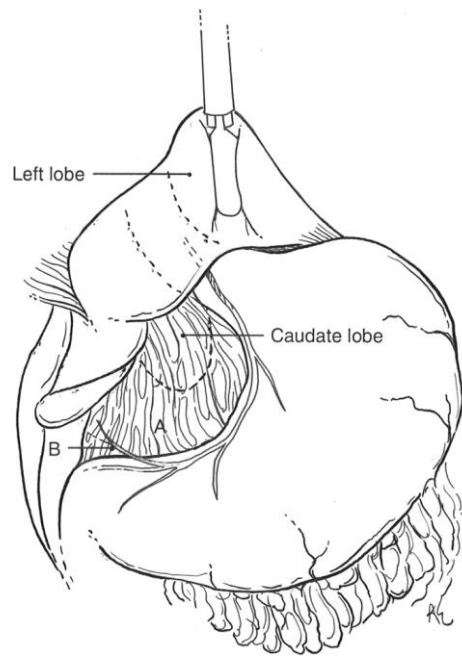


Finished hernia repair, including placement of one suture between esophagus and stomach to reconstruct the $\angle$ of His.

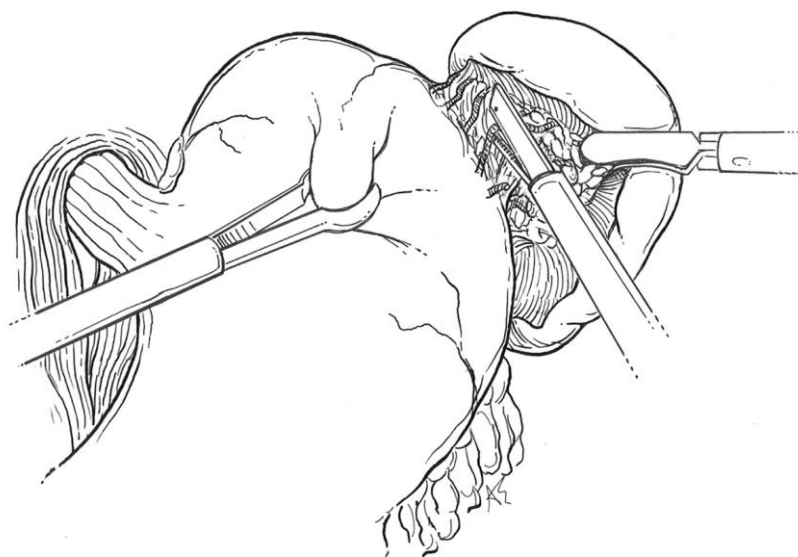
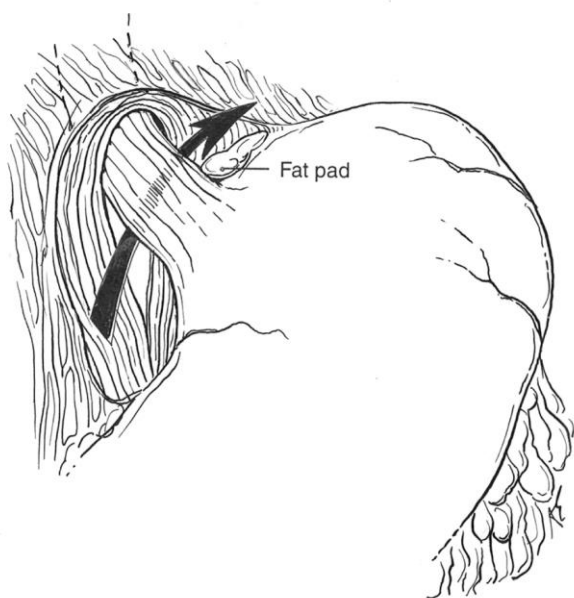


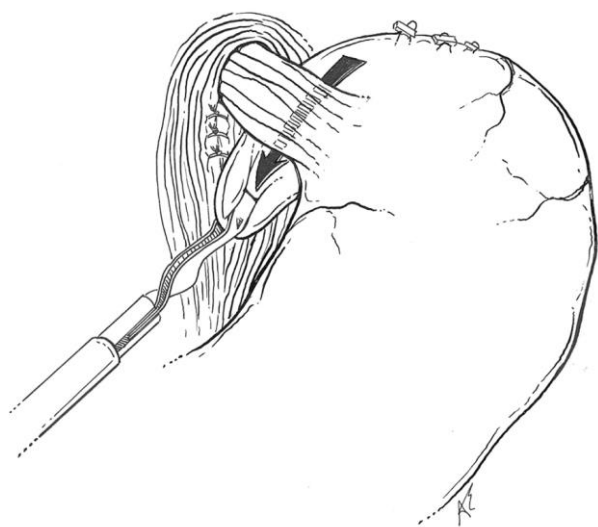




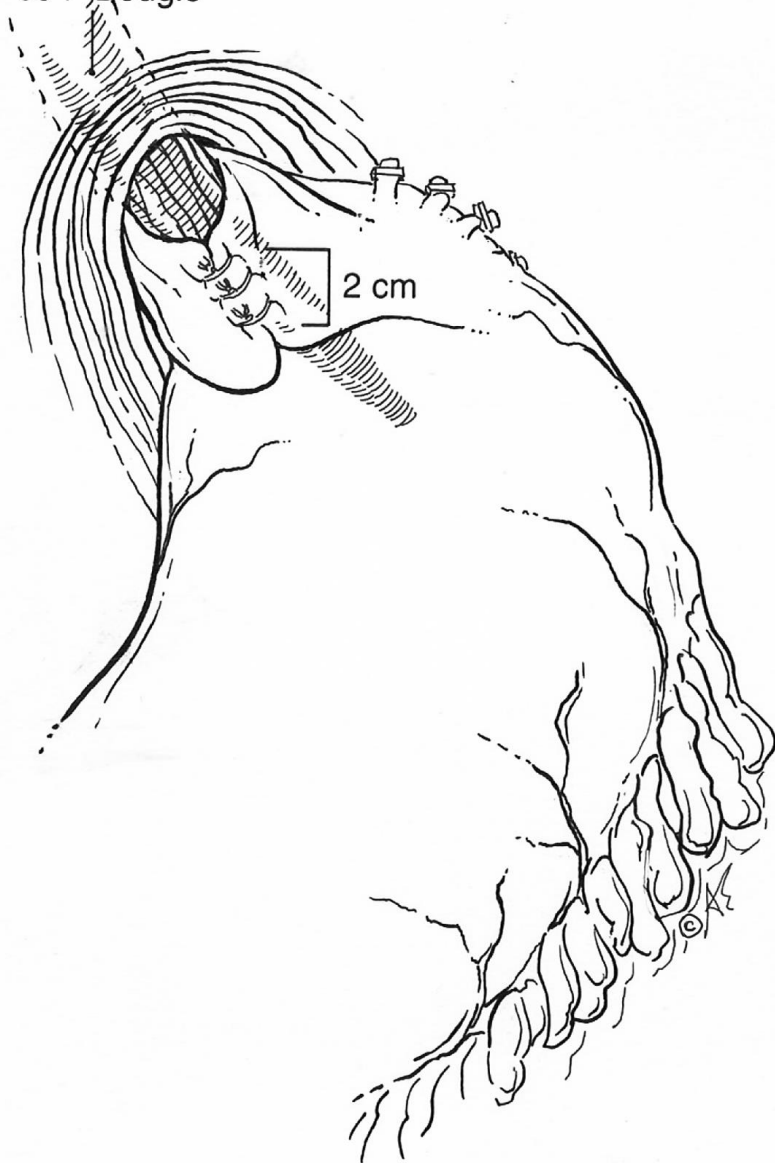








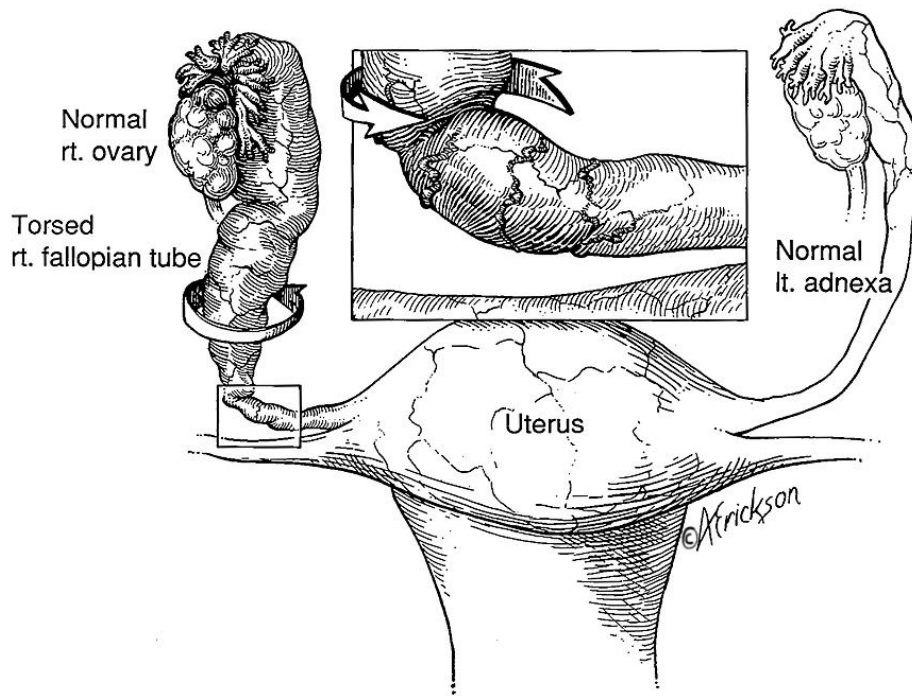
60 F Bougie



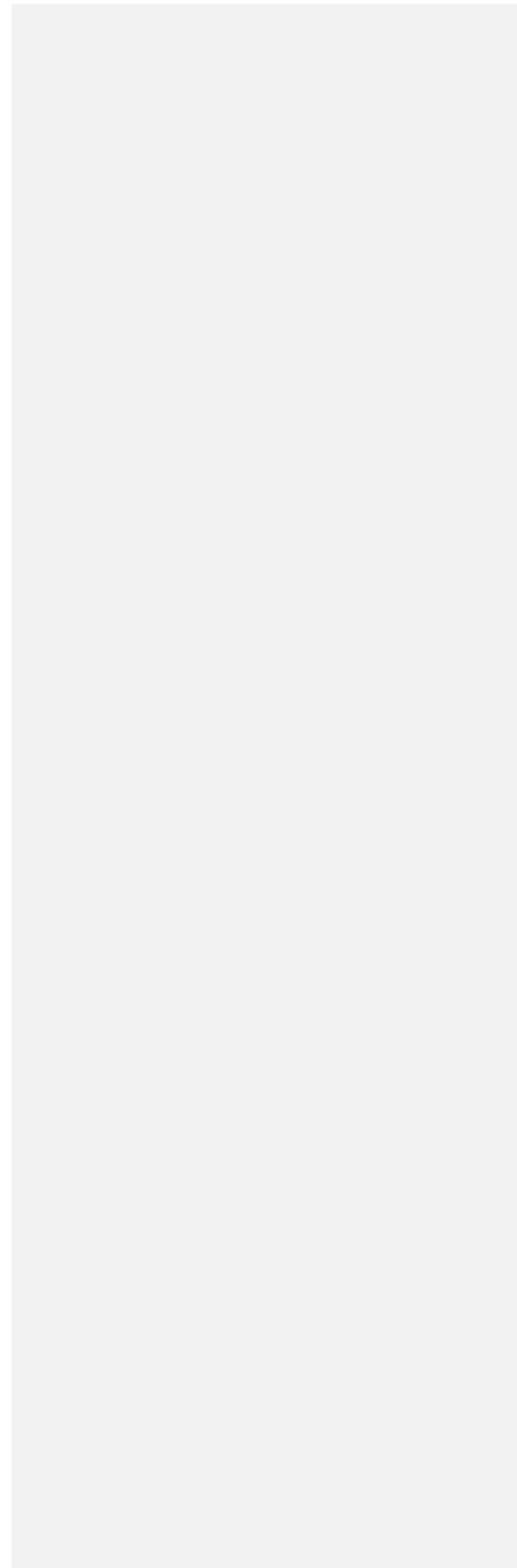
60 F Bougie

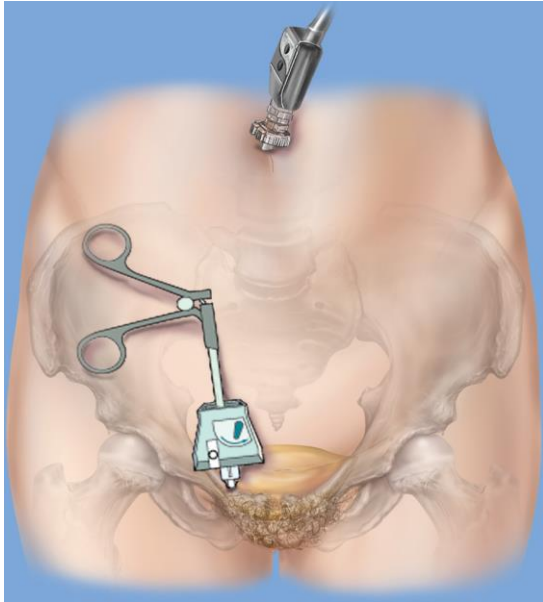
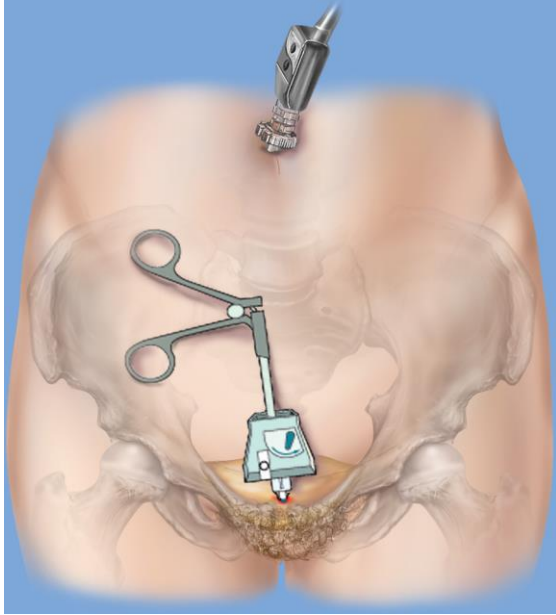


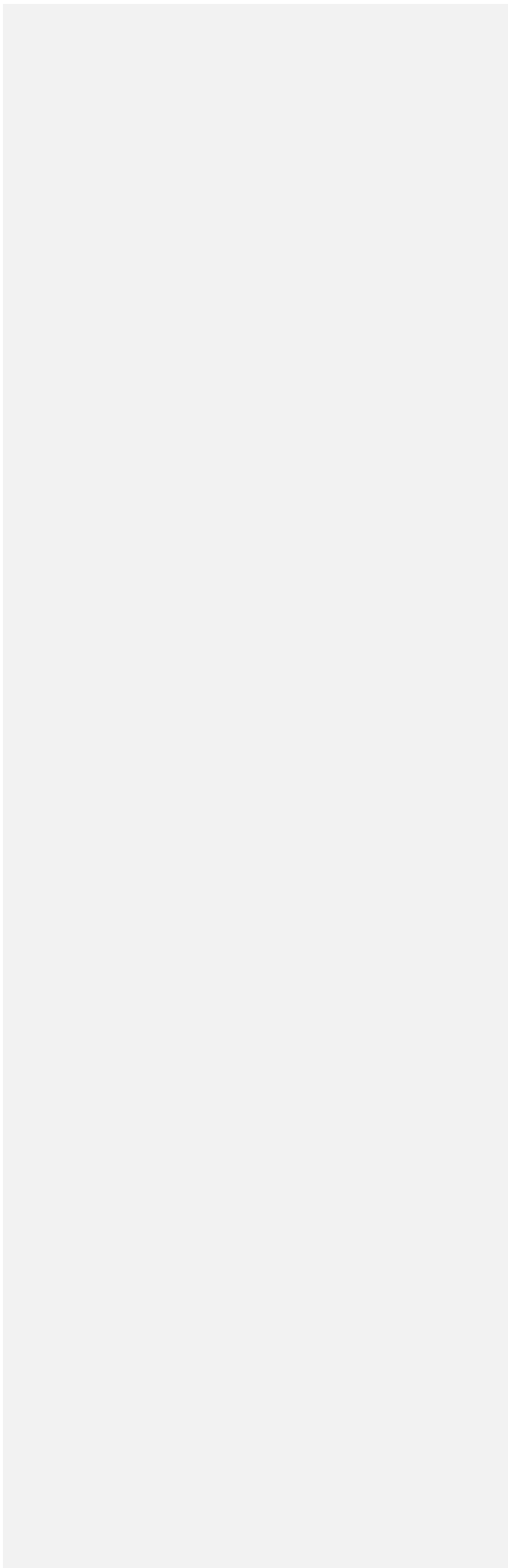
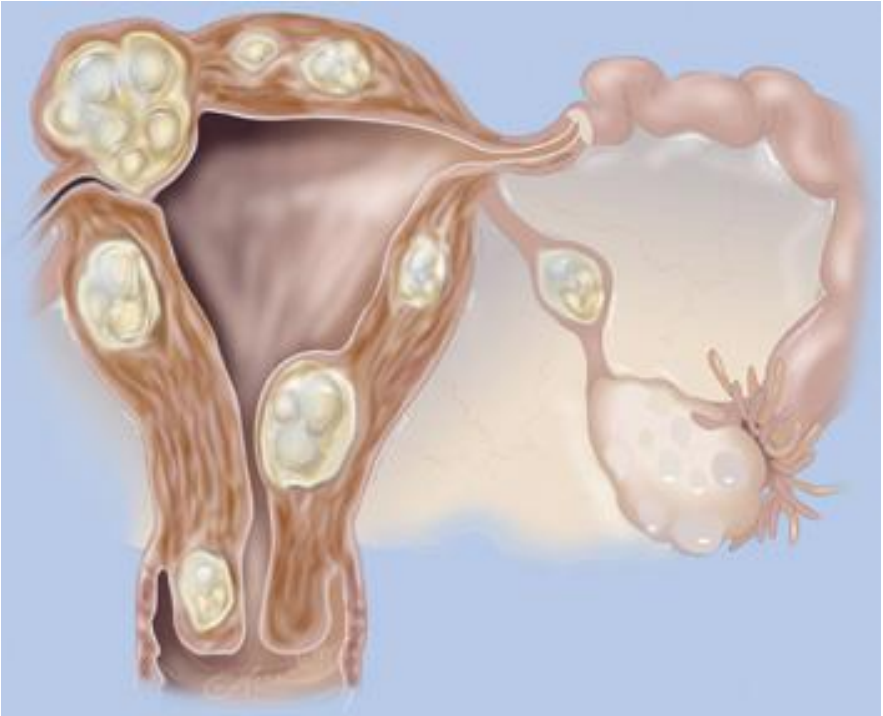
Female Pelvis and GYN



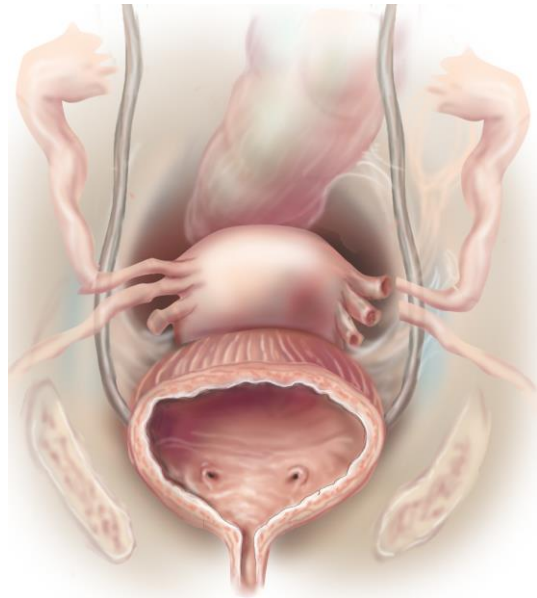
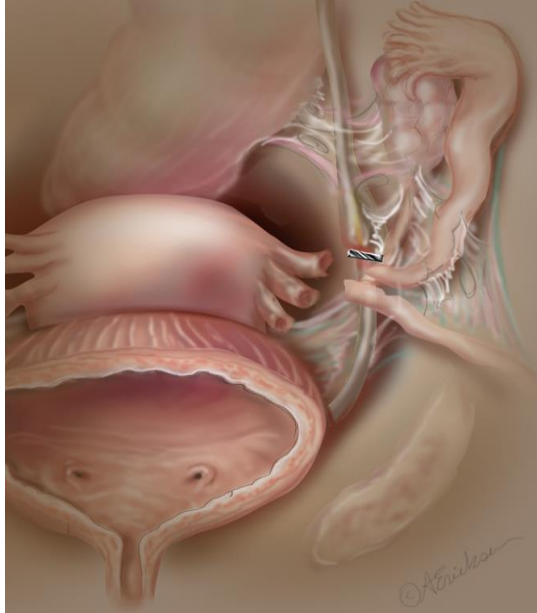


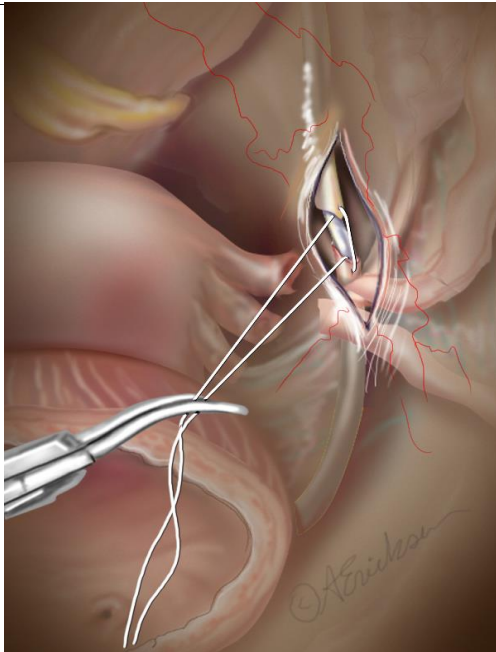
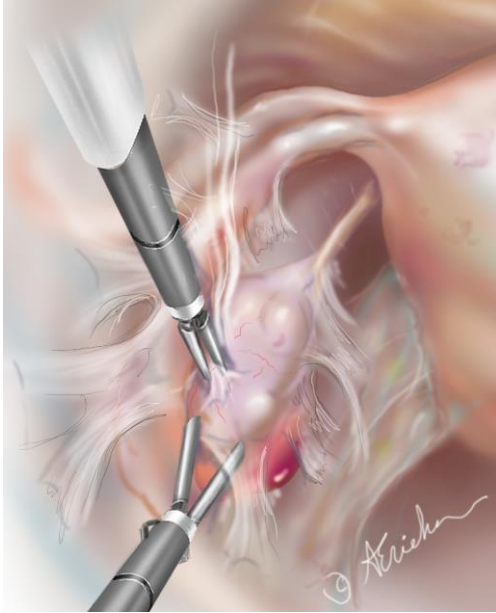


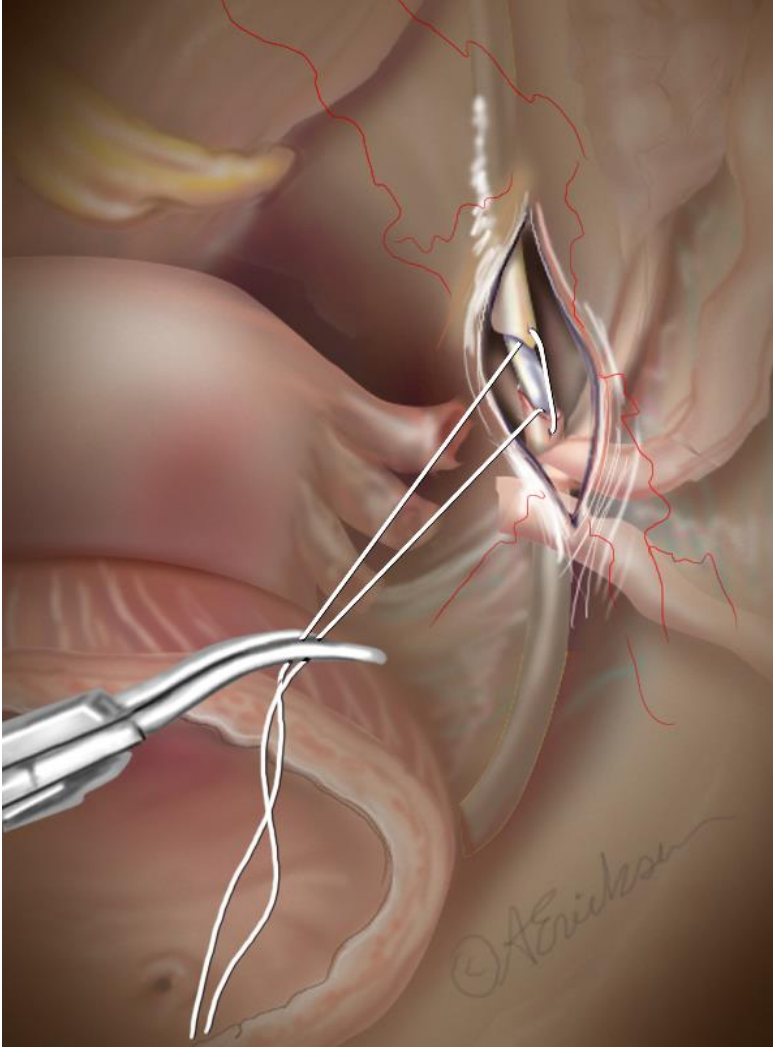






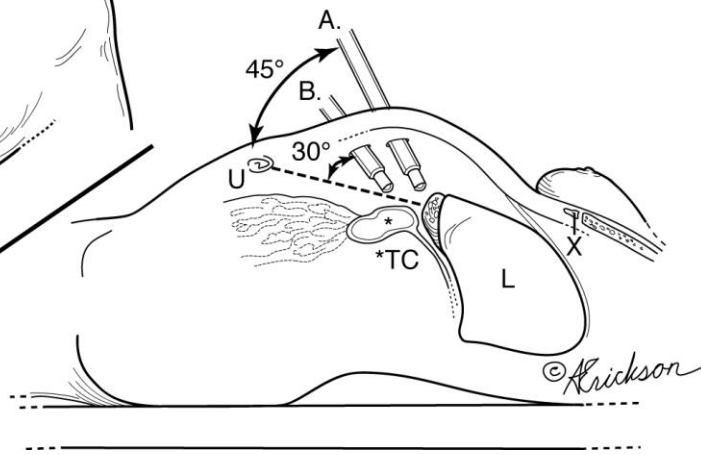
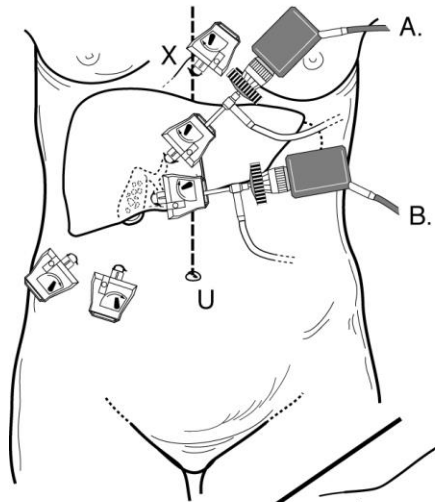


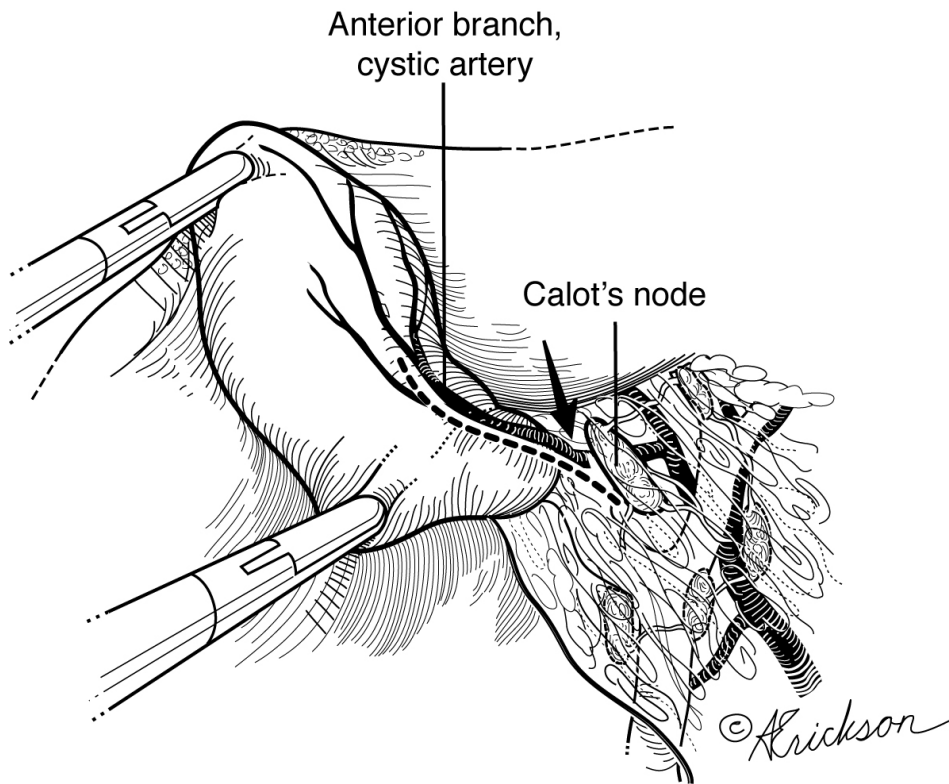


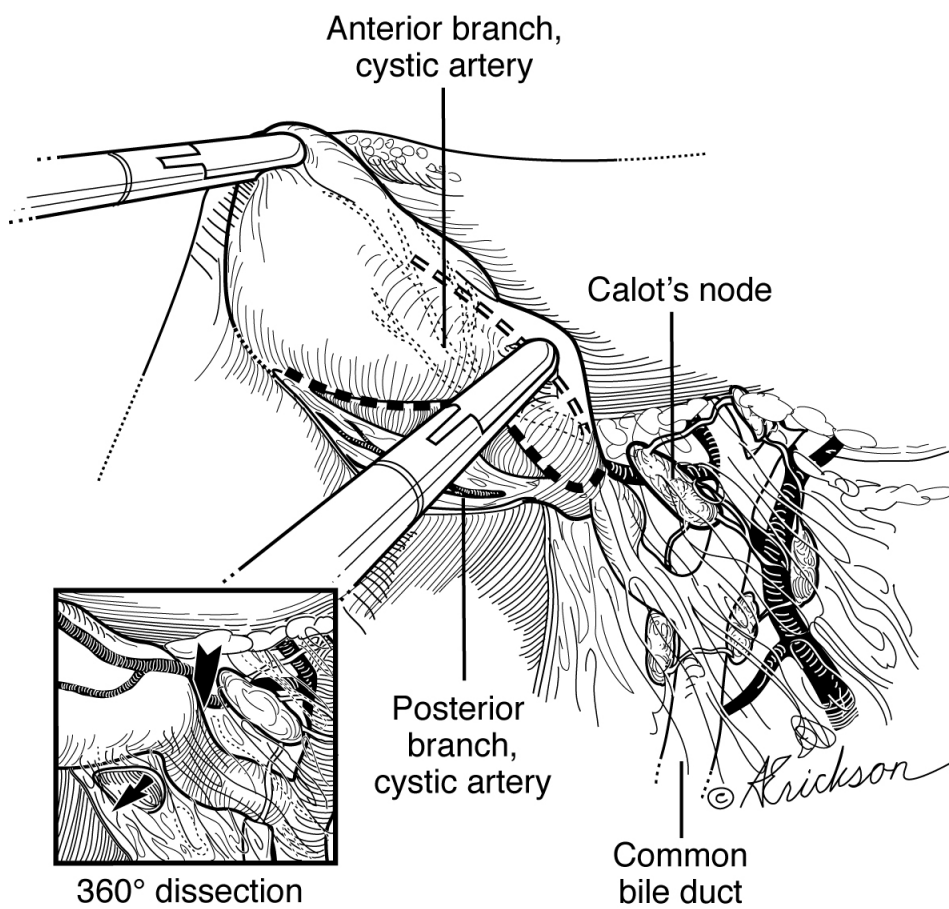


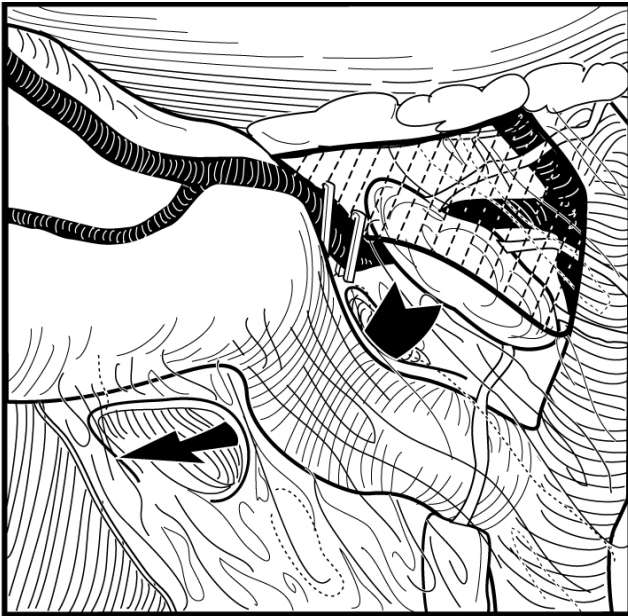
Gallbladder

Midline





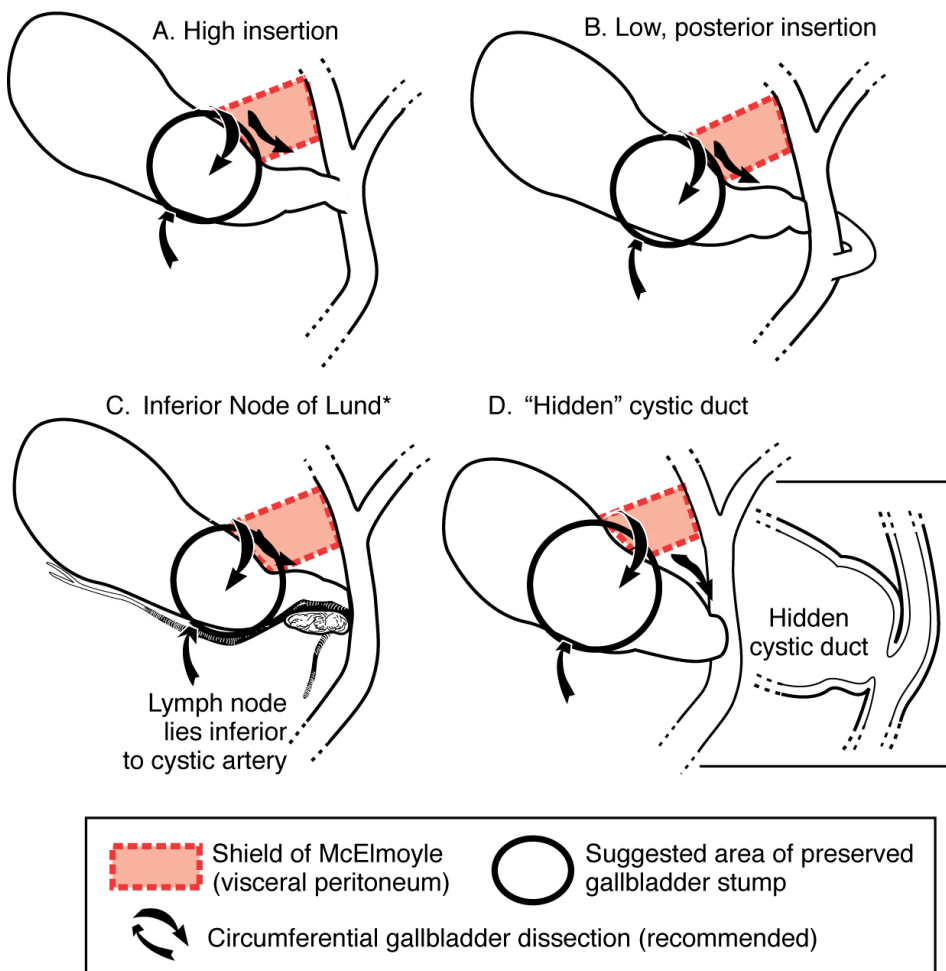




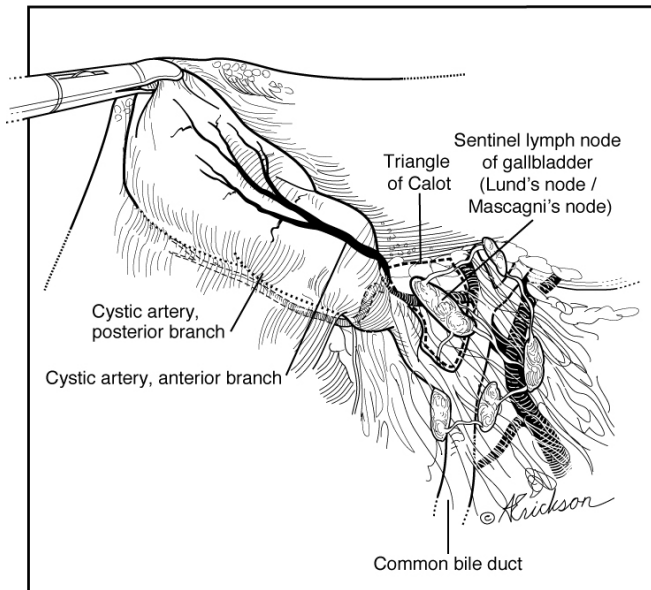
Do not operate in
dashed line area

Cystic artery, clipped

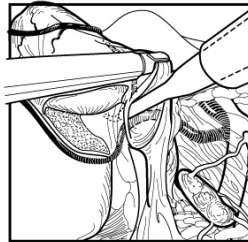
Aberrant gallbladder anatomy and the Shield of McElmoyle:



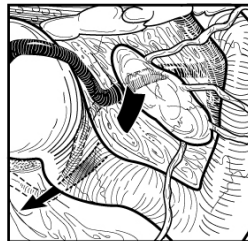
ANATOMIC CONSIDERATIONS:



CRITICAL VIEW:

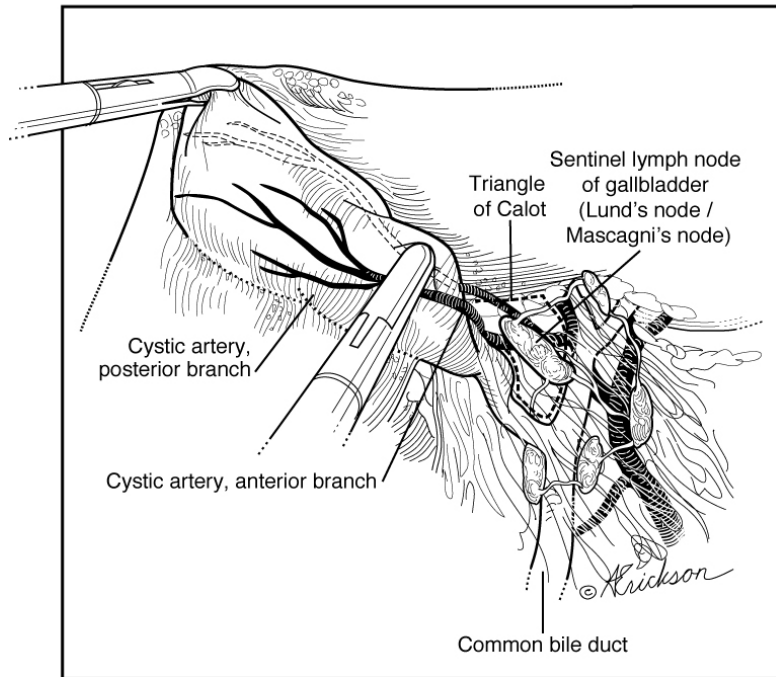


1. Posterior dissection is between the cystic artery, posterior branch and posterior wall of the gallbladder.

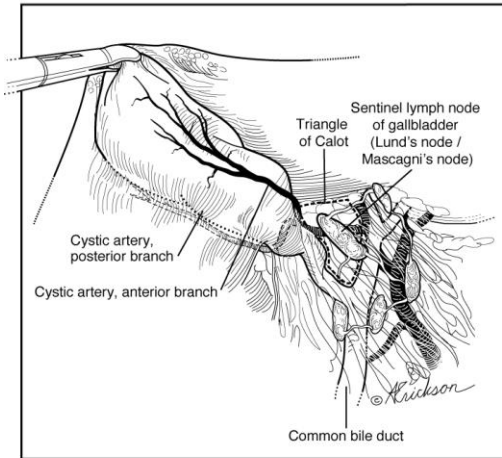


2. Anterior dissection is between the anterior cystic artery as it emerges from behind the lymph node and the gallbladder wall.

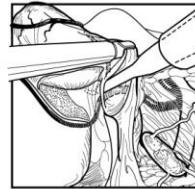
ANATOMIC CONSIDERATIONS:



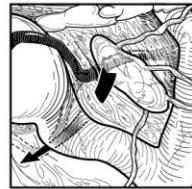
ANATOMIC CONSIDERATIONS:



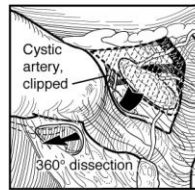
CRITICAL VIEW:



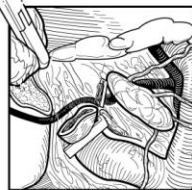
1. Posterior dissection is between the cystic artery, posterior branch and posterior wall of the gallbladder.



2. Anterior dissection is between the anterior cystic artery as it emerges from behind the lymph node and the gallbladder wall.

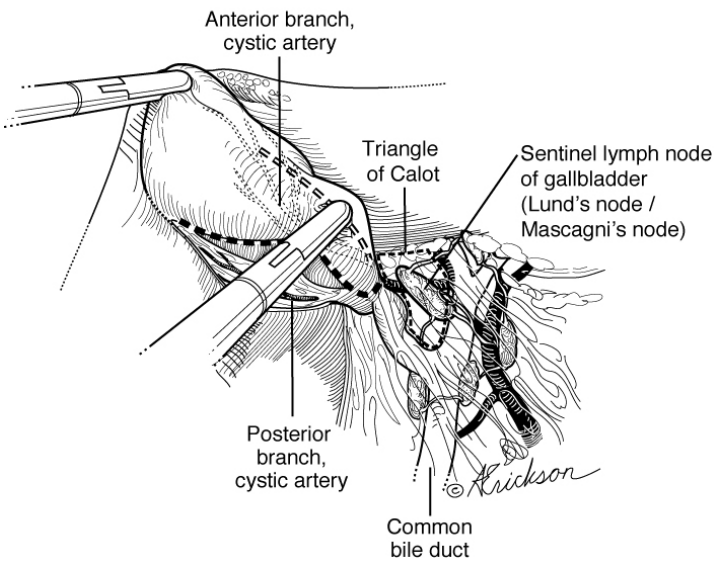


3. Do not operate in dashed line area.

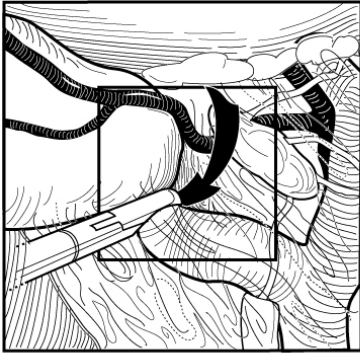


4. Preserved sentinel lymph node posteriorly protects the proximal aspect of cystic artery; the medial aspect of the node points to the common bile duct.

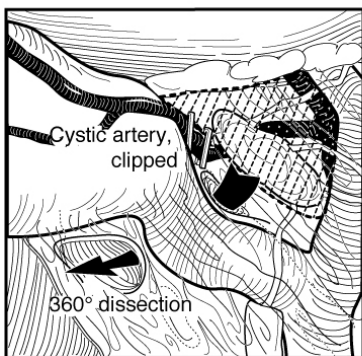
ANATOMIC CONSIDERATIONS:



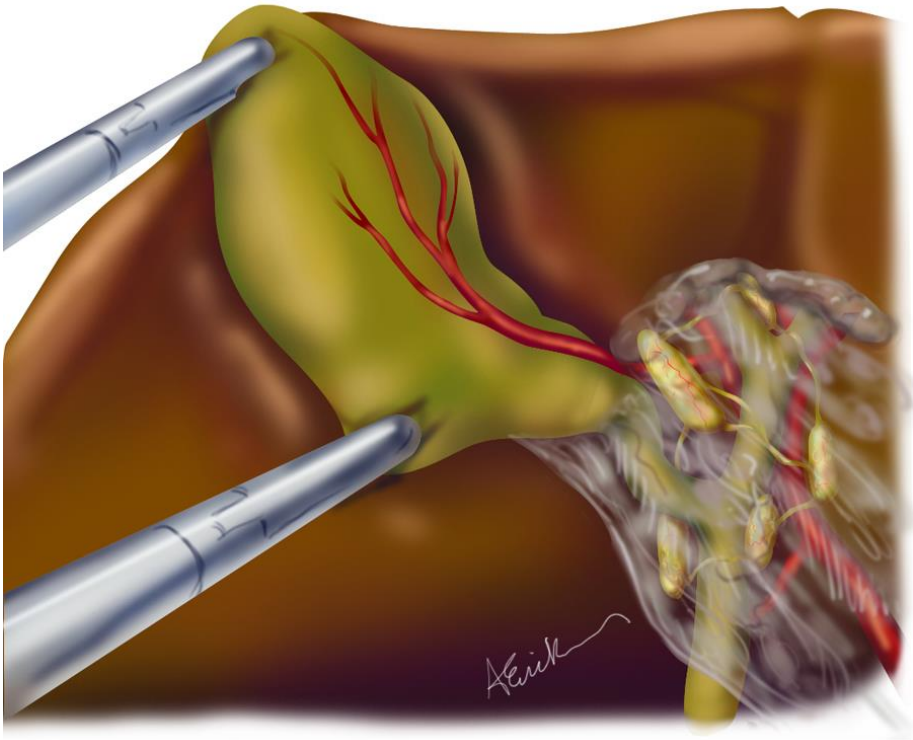
AVASCULAR PLAN OF DISSECTION:

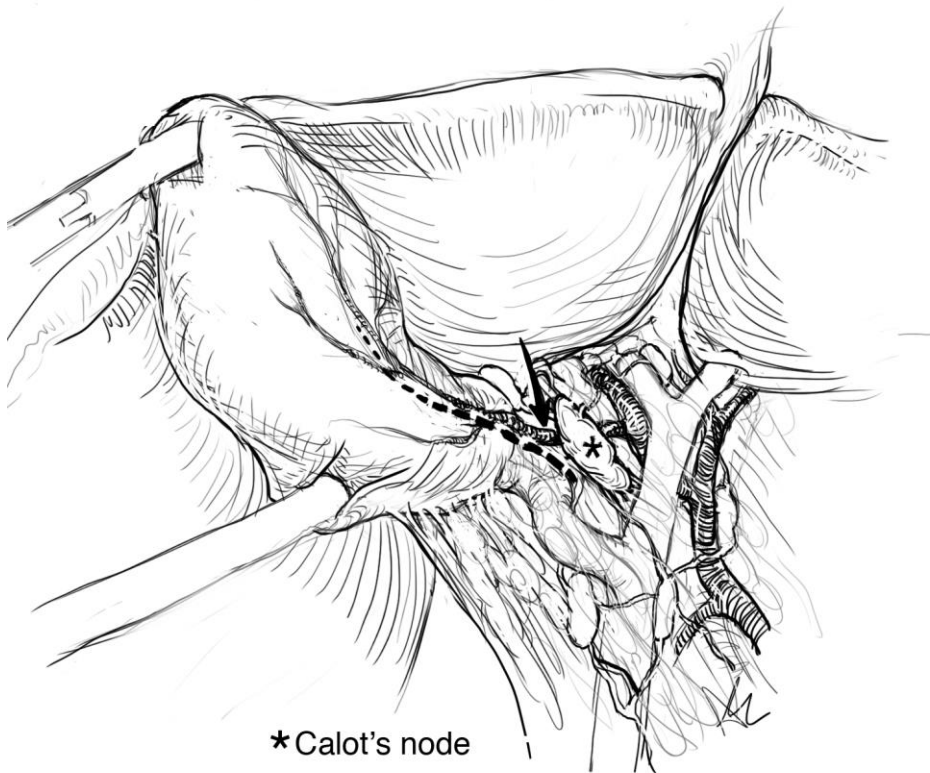


Start dissection
between cystic artery,
posterior branch
and posterior wall
of gallbladder
(no resistance).

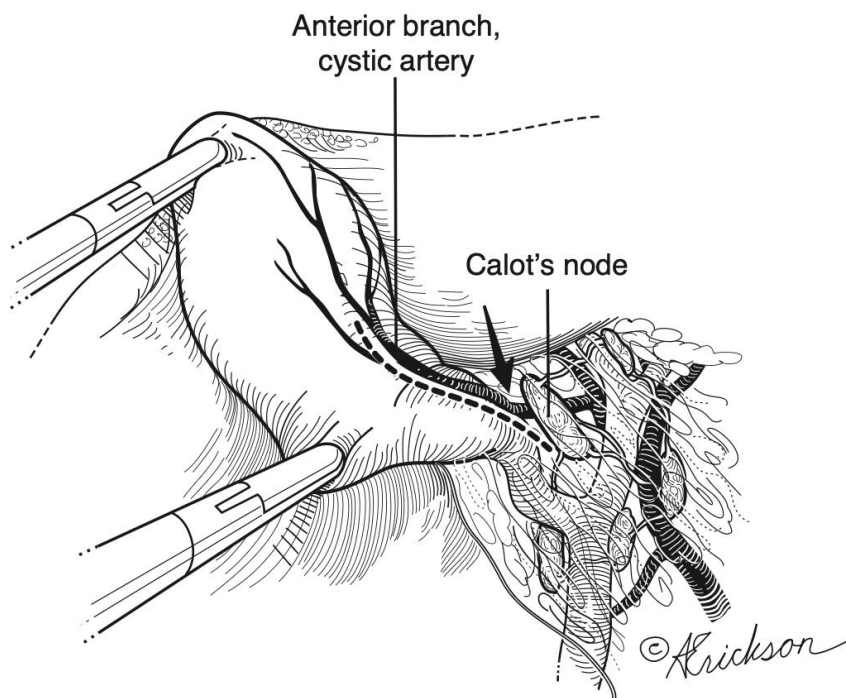


Do not operate in
dashed line area

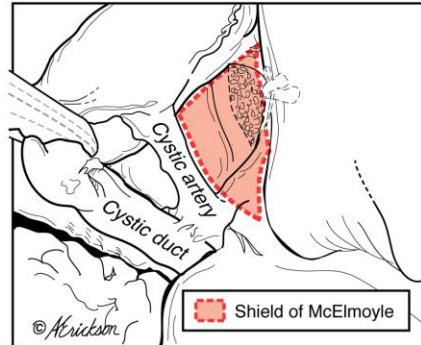
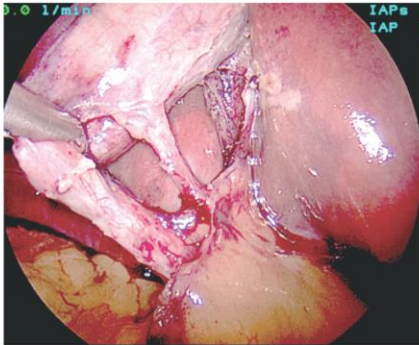




* Calot's node



INCORRECT

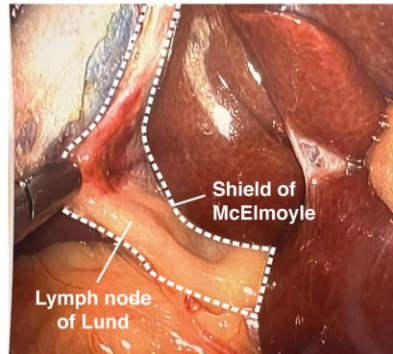
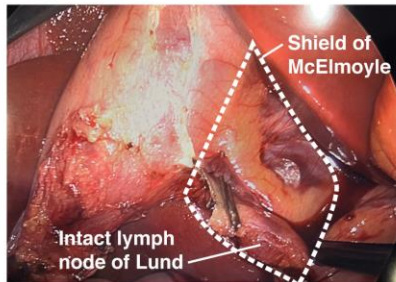


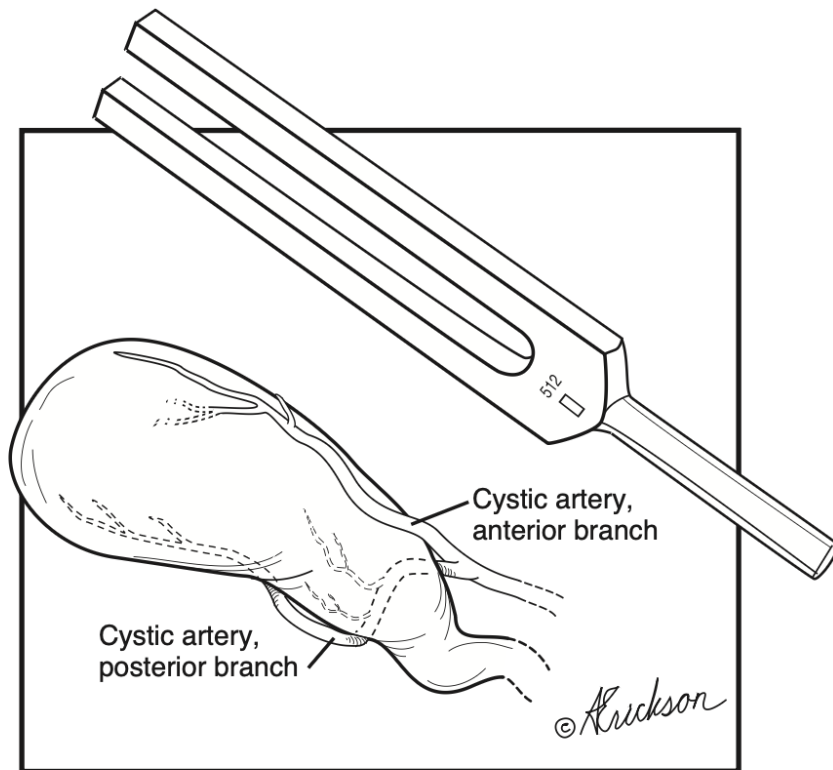
From SAGES Safe Cholecystectomy Program,
Strategies for minimizing Bile Duct injuries.
<https://www.sages.org/safe-cholecystectomy-program/>

Shield of McElmoyle is an area of NO dissection.
Preserving the Shield is crucial.

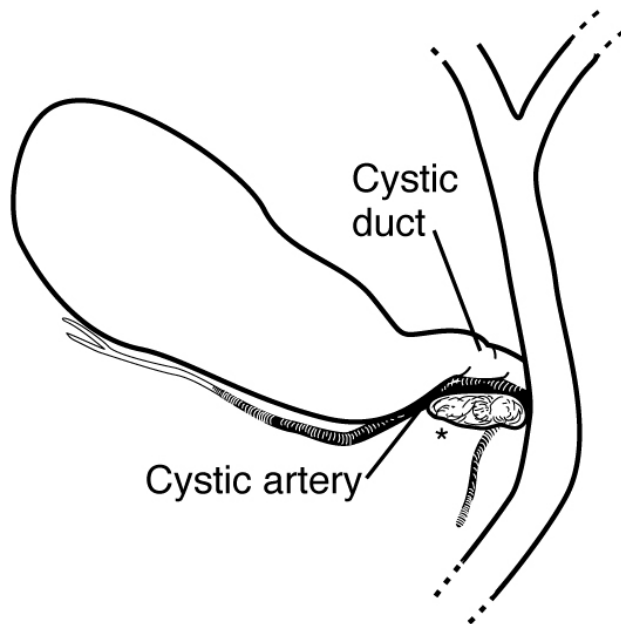
CORRECT

Shield of McElmoyle is visualized and preserved (with lymph node of Lund) during placement of clips.



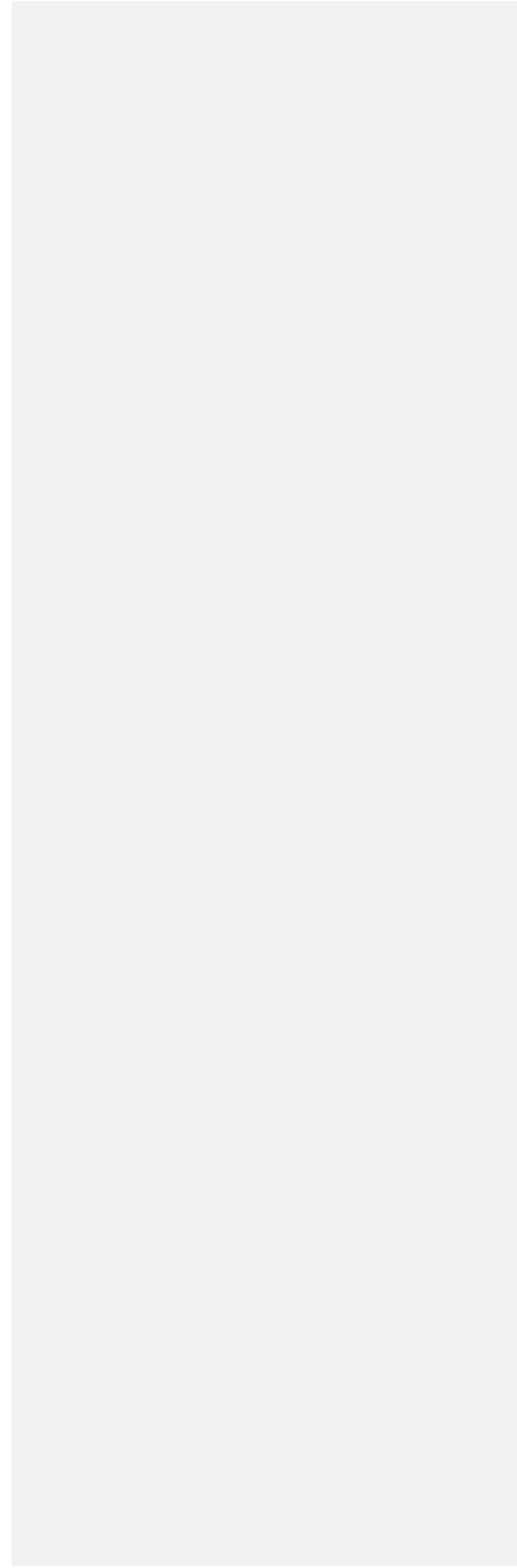
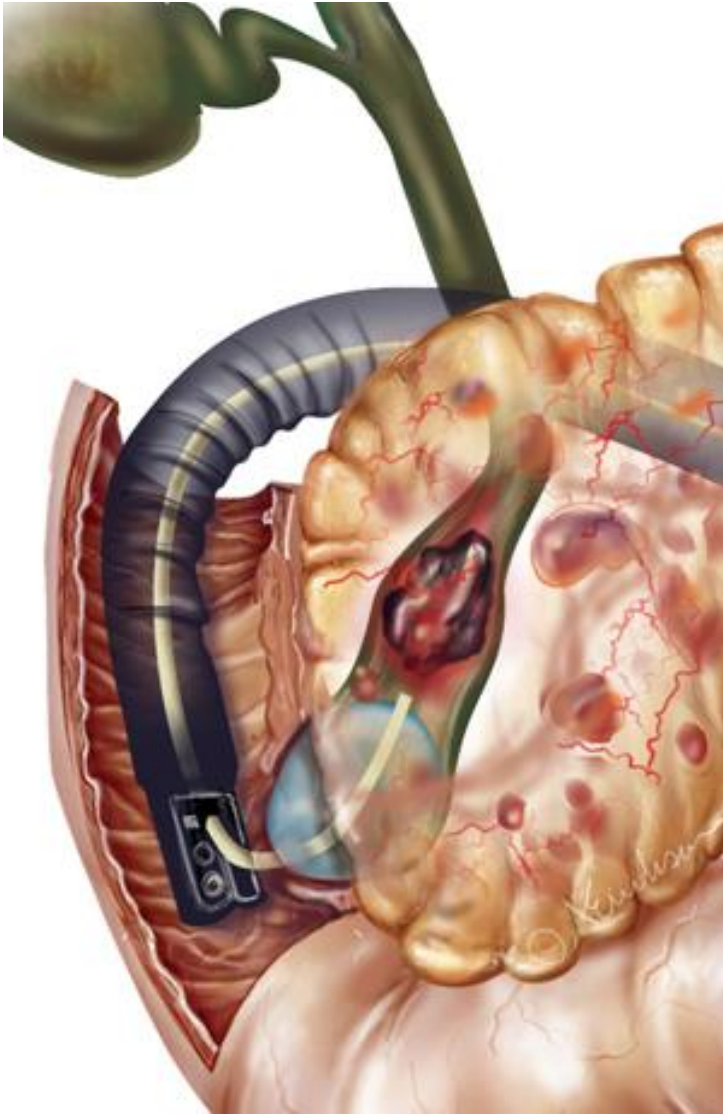


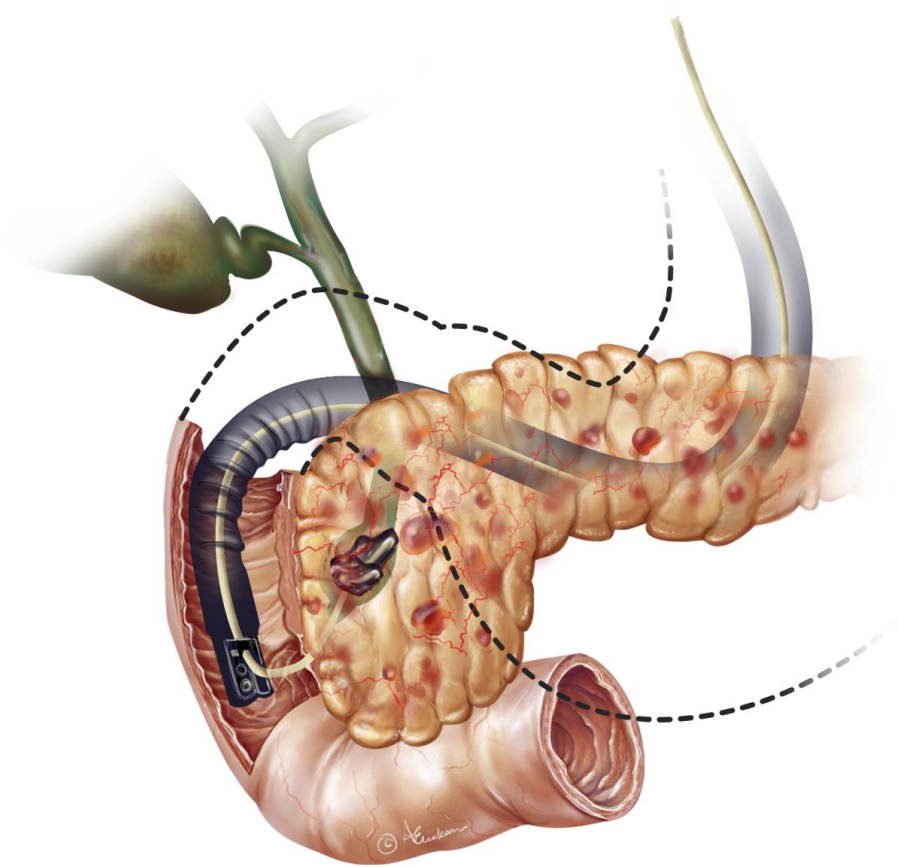
Cystic artery branches analogy to a tuning fork (diapason); as gallbladder dissection is only within the arms of the tuning fork.

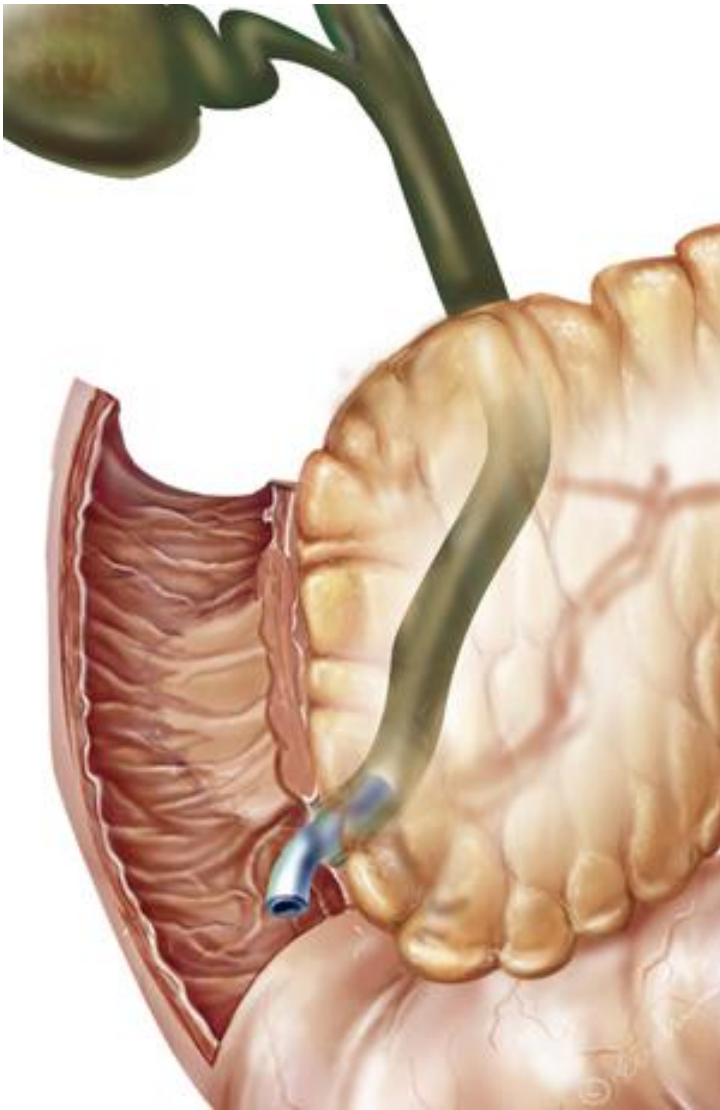


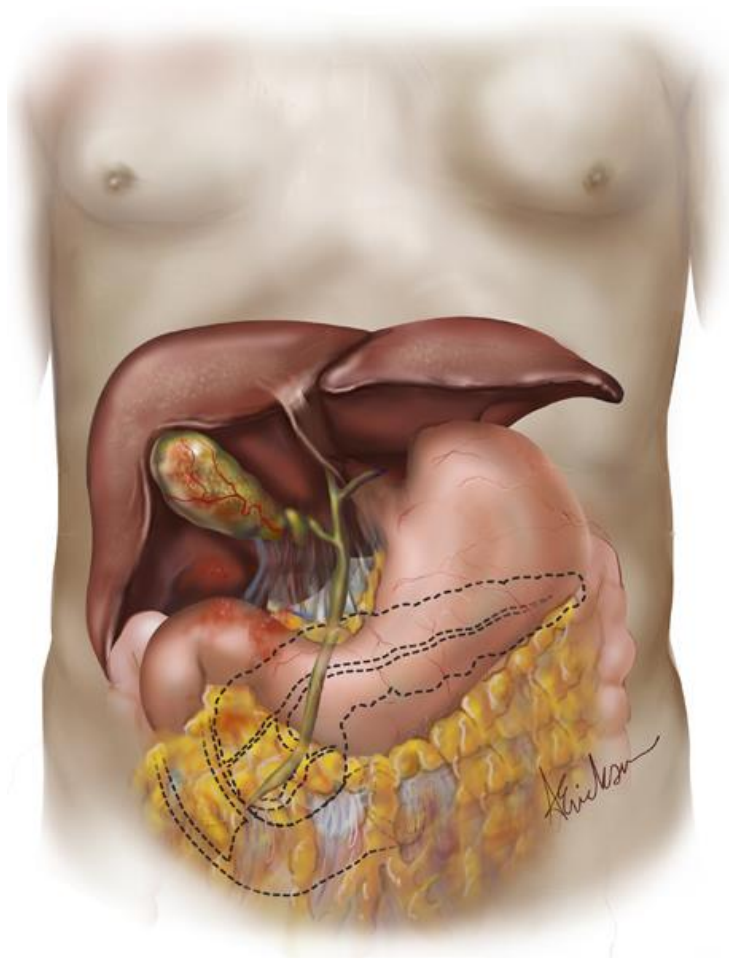
* Inferior Node of Lund-aberrant anatomy

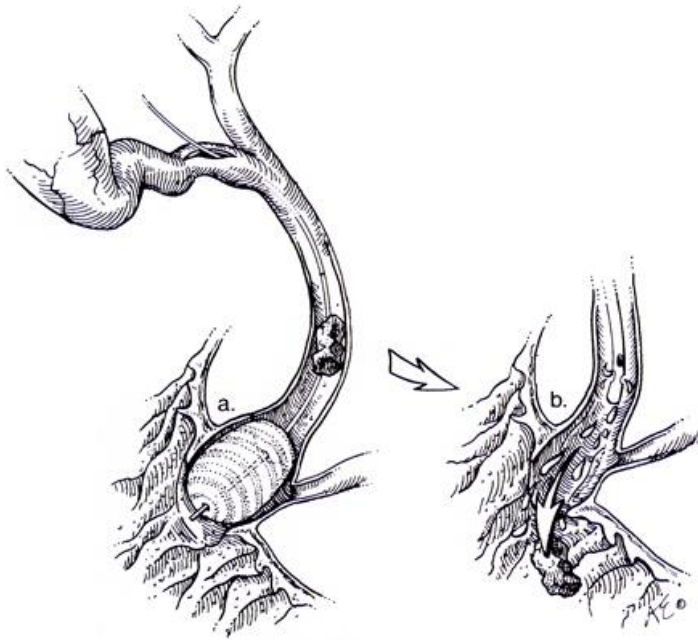


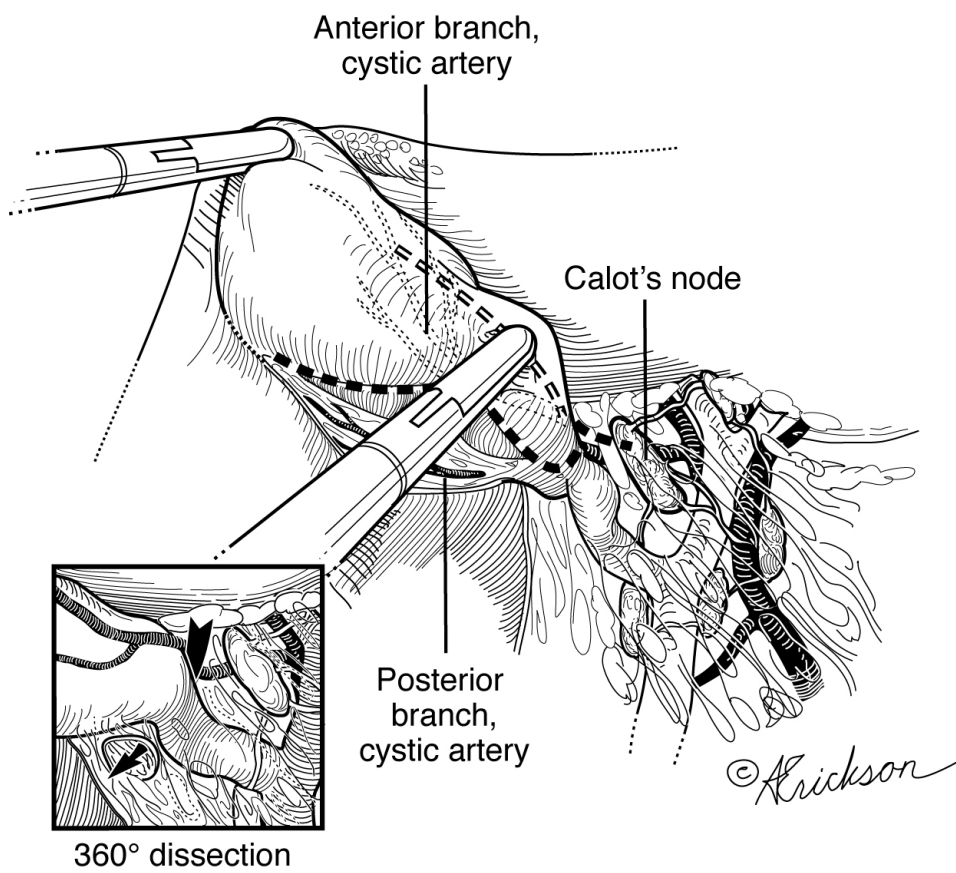


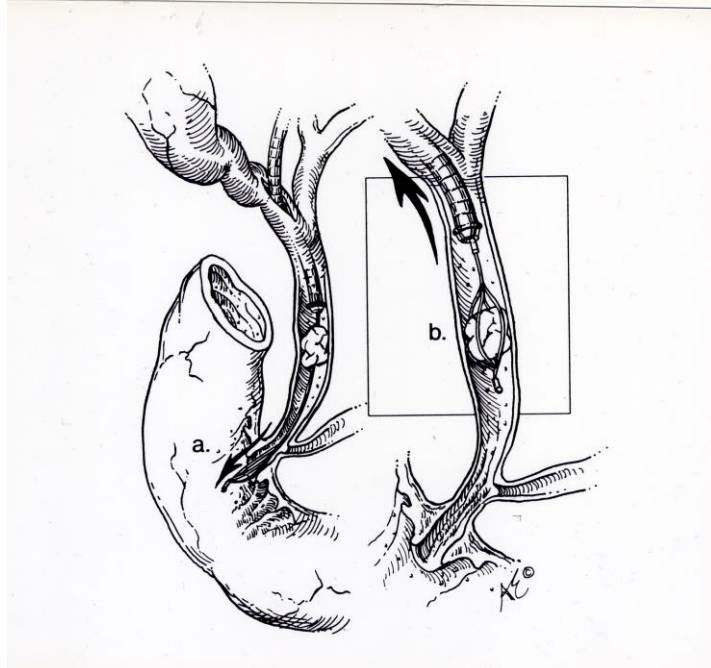
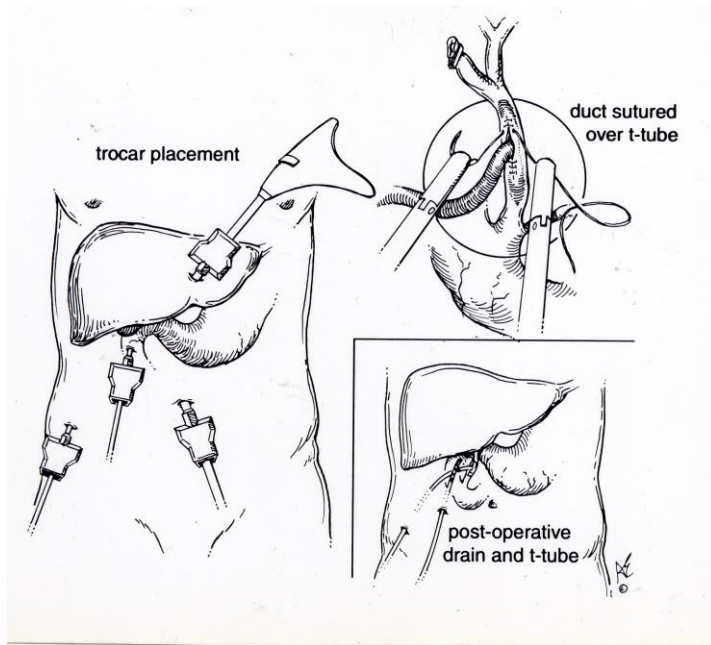


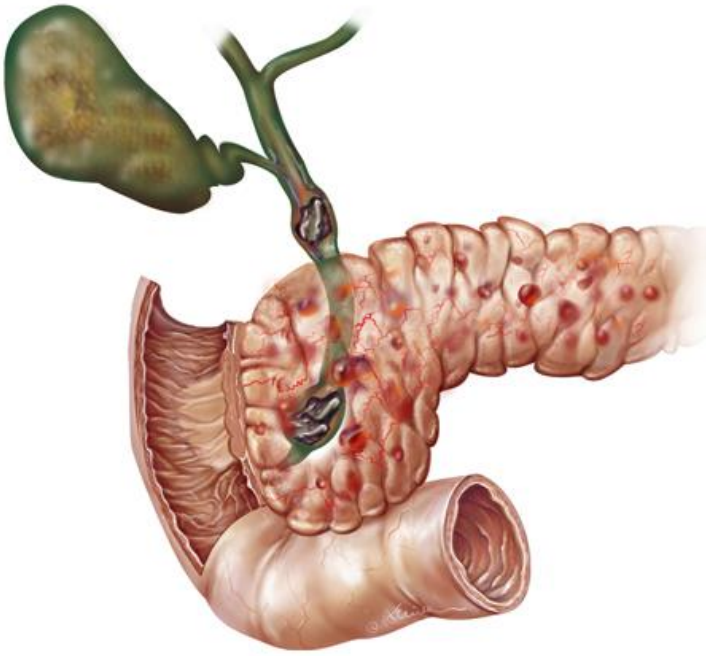


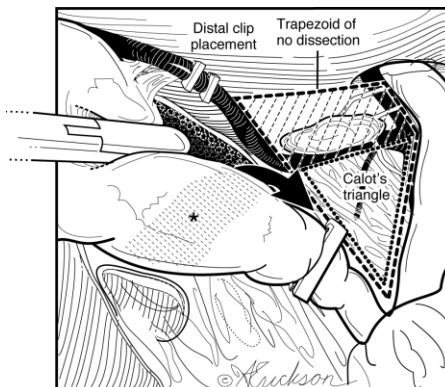
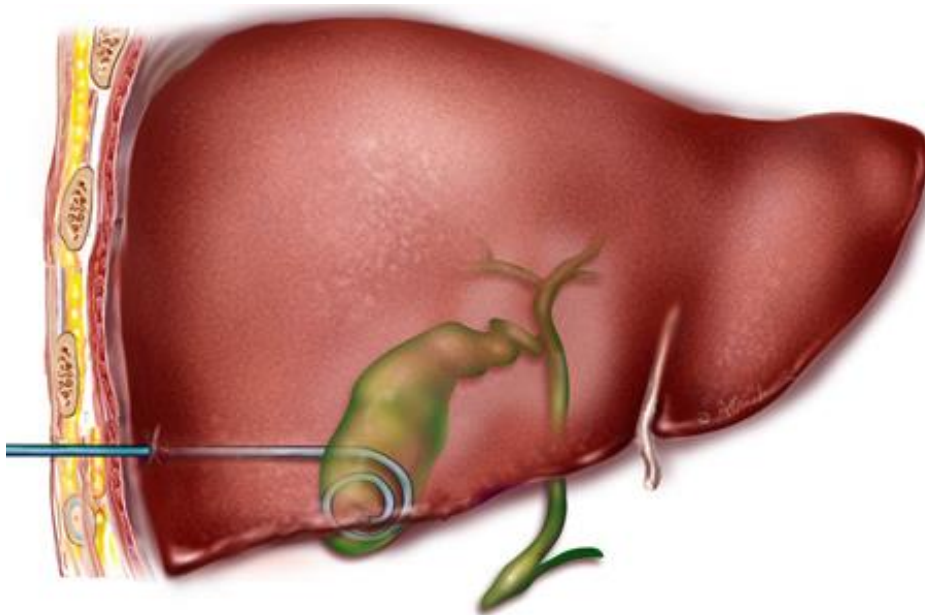








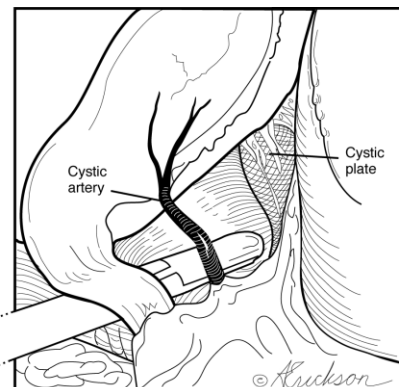




1. Safe dissection (*) lateral to medial, starting with the body of the gallbladder, ensures no biliary or vascular injury and allows identification of aberrant anatomy.

Sentinel lymph node of Lund is preserved.

Trapezoid of no dissection = hepatocystic triangle - Calot's triangle.

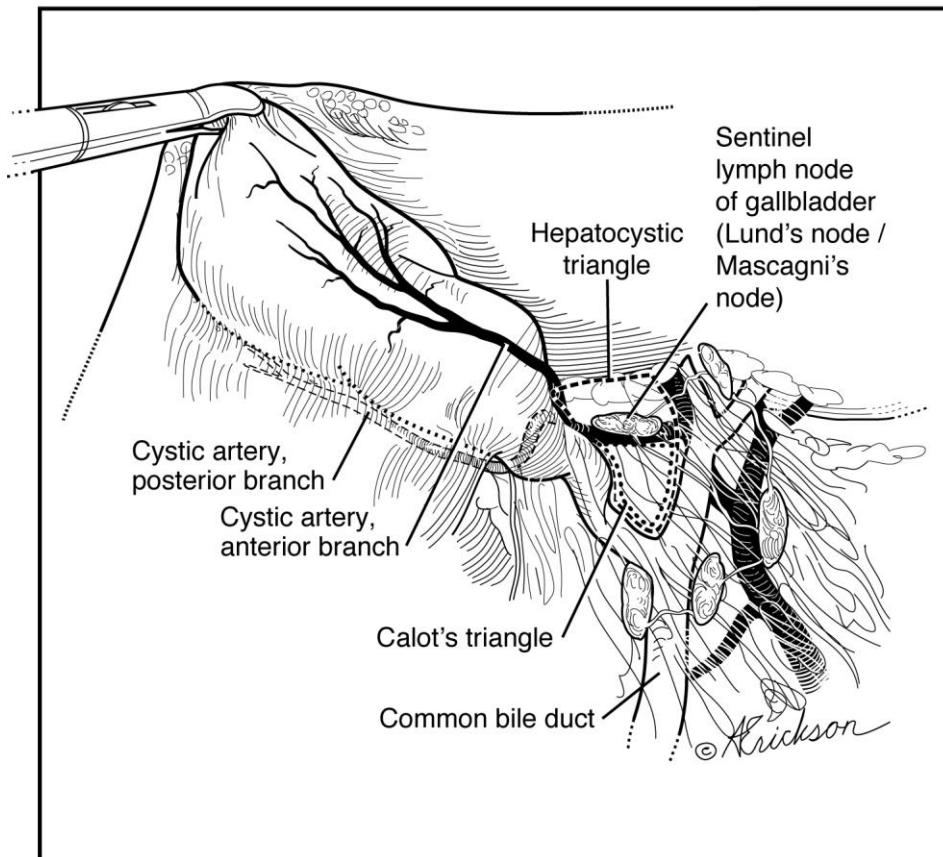


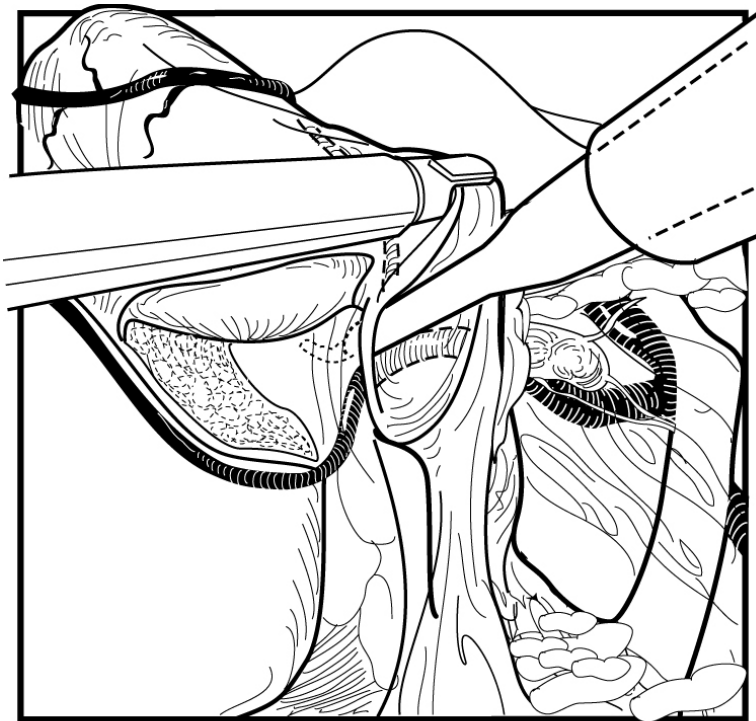
2. SAGES "critical view of safety" with exposure of cystic plate and identification of cystic artery and cystic duct.

Sentinel lymph node of Lund is removed.

This unsafe dissection allows for potential biliary and vascular injuries and damage due to potential aberrant anatomy.

ANATOMIC CONSIDERATIONS:

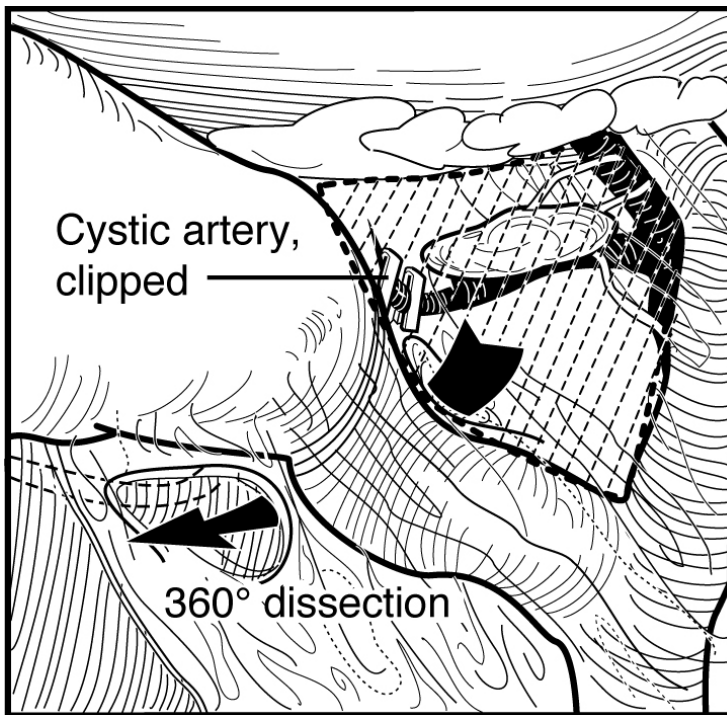




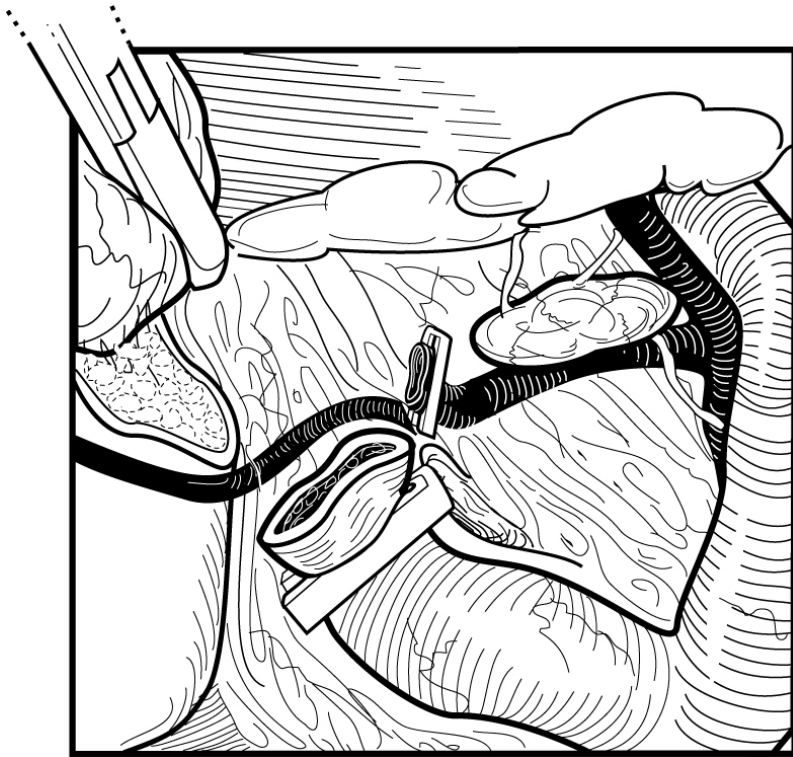
1. Posterior dissection is between the cystic artery, posterior branch and posterior wall of the gallbladder.



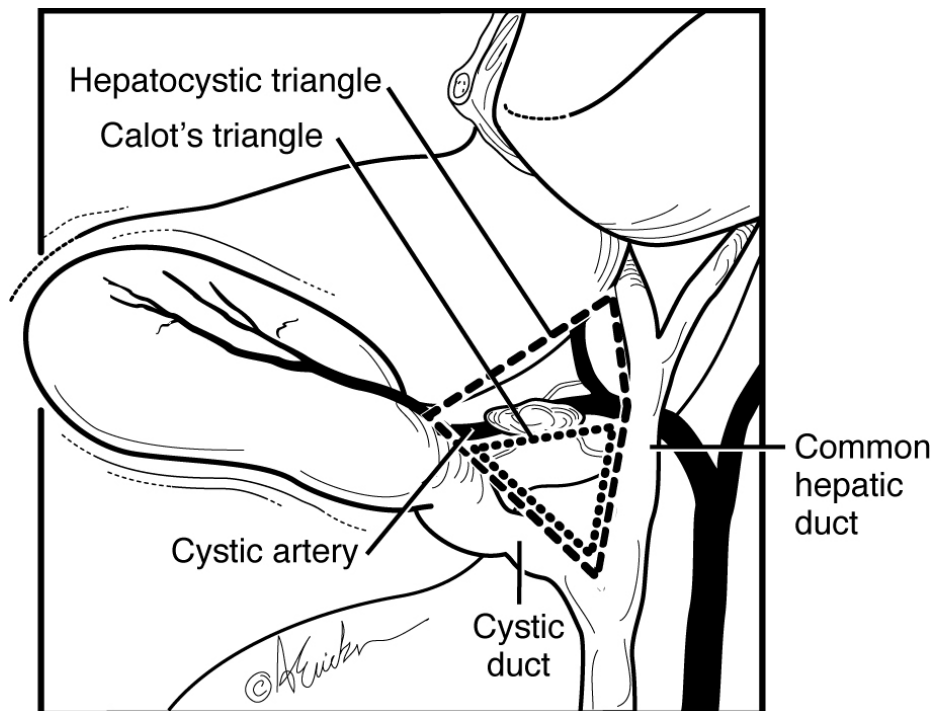
2. Anterior dissection is between the anterior cystic artery as it emerges from behind the lymph node and the gallbladder wall.



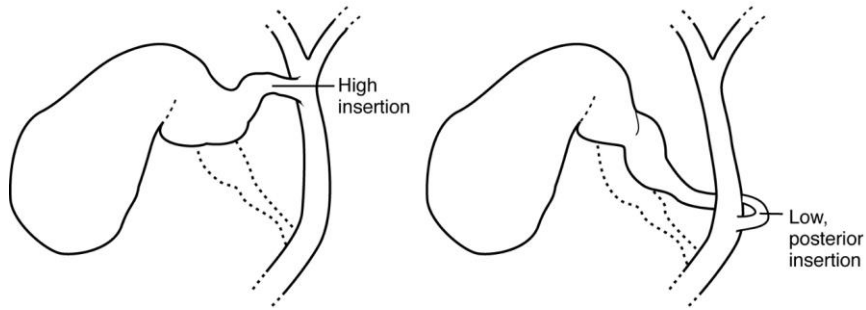
3. Do not operate in dashed line area, no skeletonization of the cystic artery and clip the artery as it emerges from behind the lymph node.



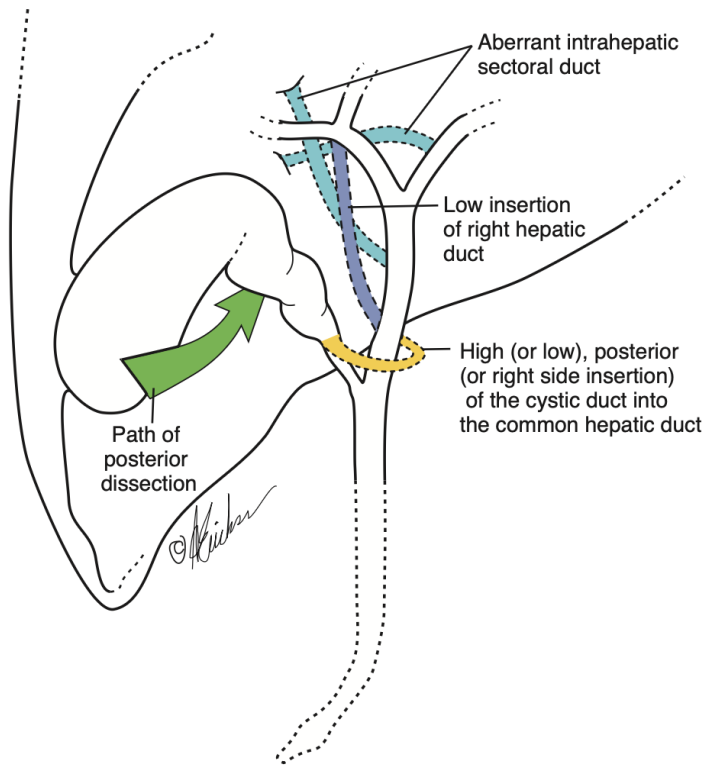
4. Preserved sentinel lymph node posteriorly protects the proximal aspect of the cystic artery; the medial aspect of the node points to the common bile duct.

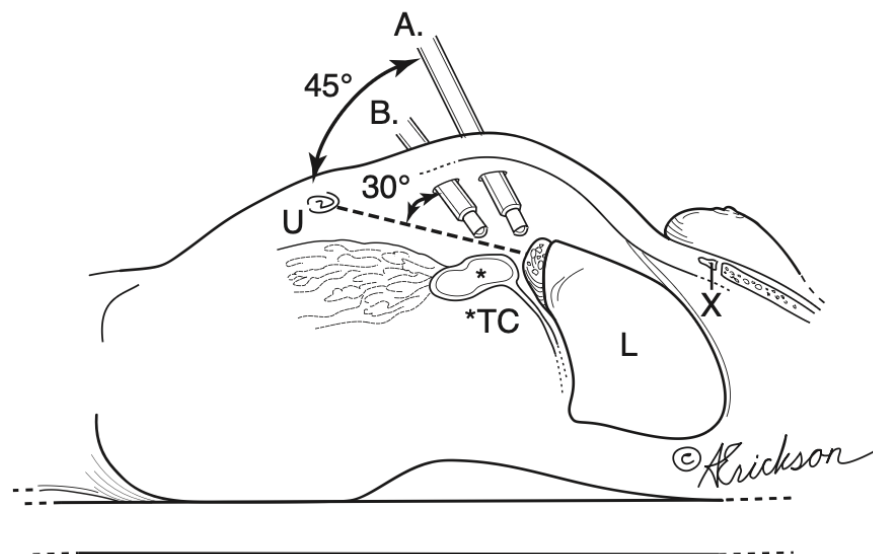
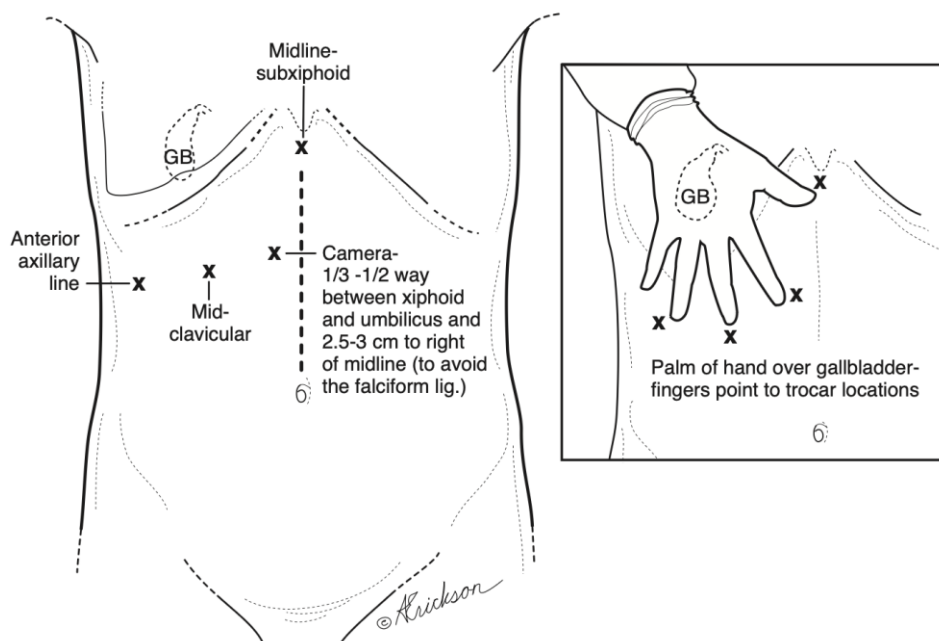


B. Aberrant variations of cystic duct insertions

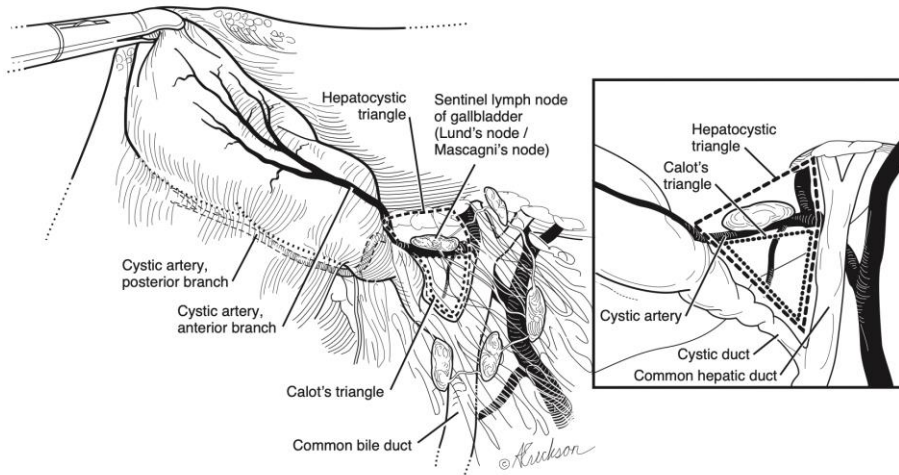


A few of (many) possible anatomic variations to be aware of during posterior gallbladder dissection

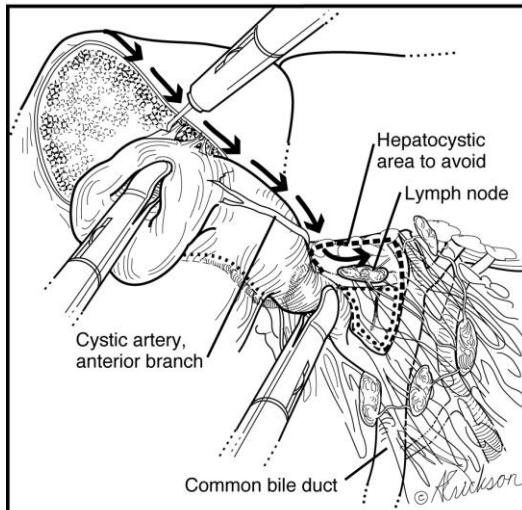




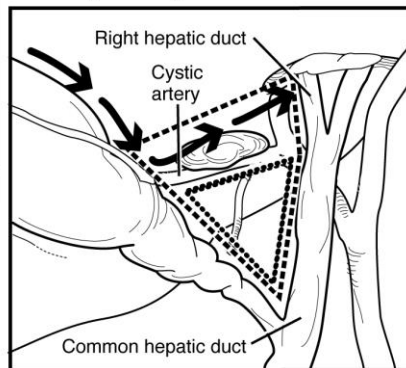
ANATOMIC CONSIDERATIONS:



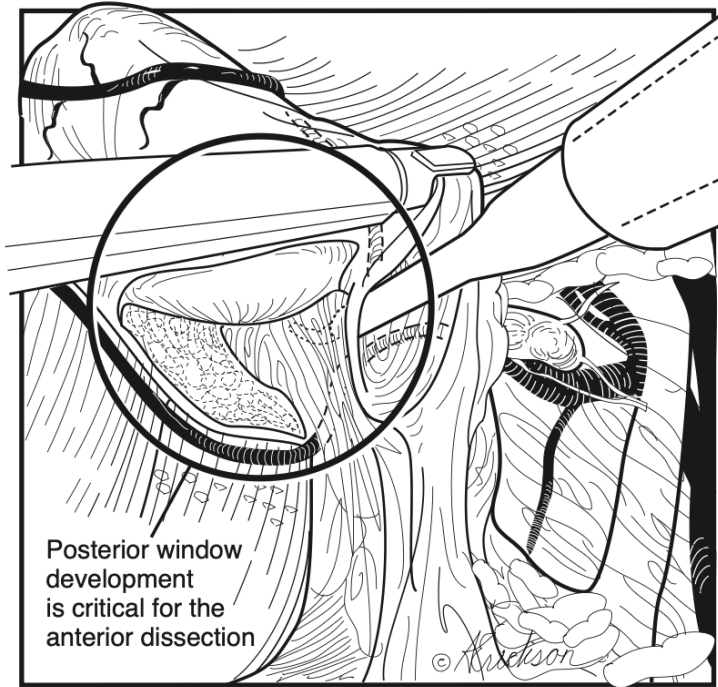
Top-down gallbladder dissection

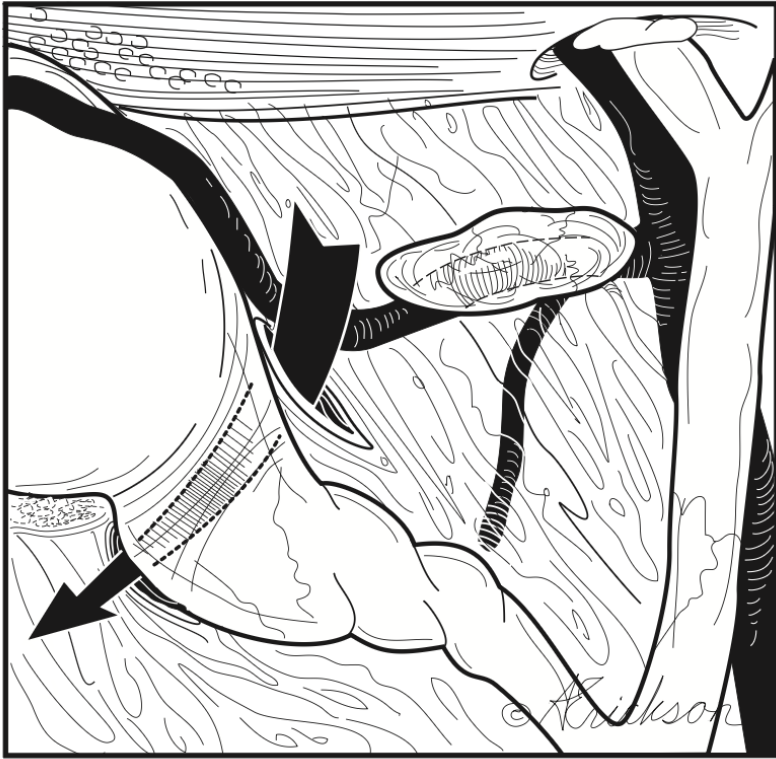


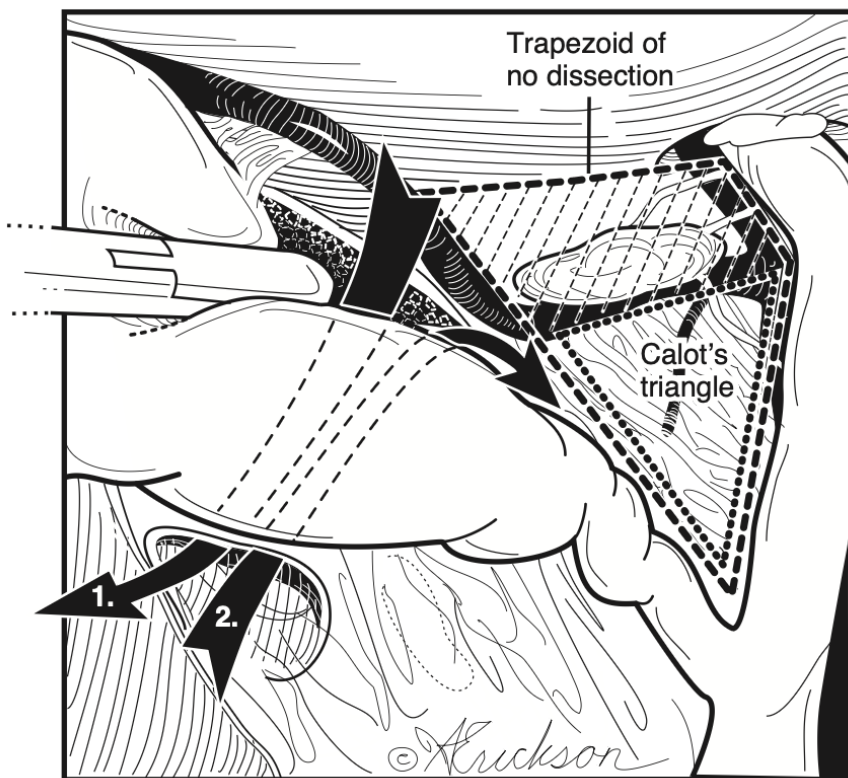
Structures easily damaged by the top - down gallbladder dissection

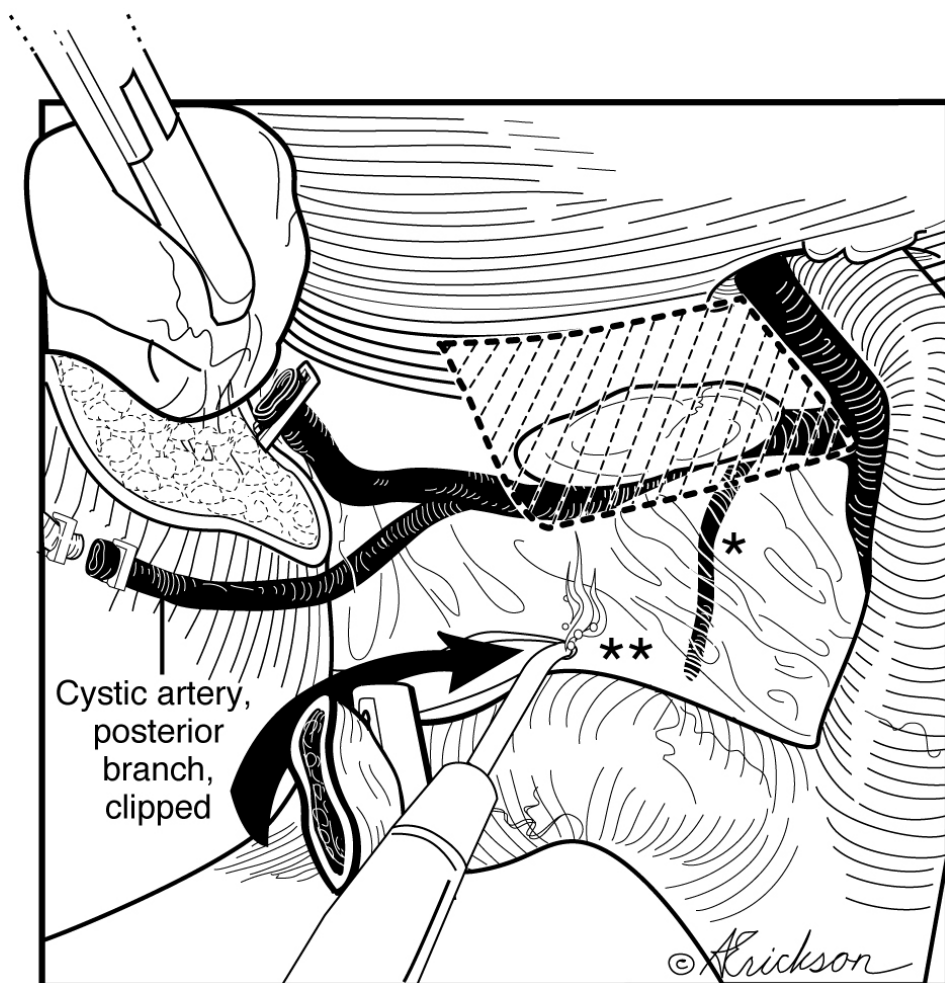


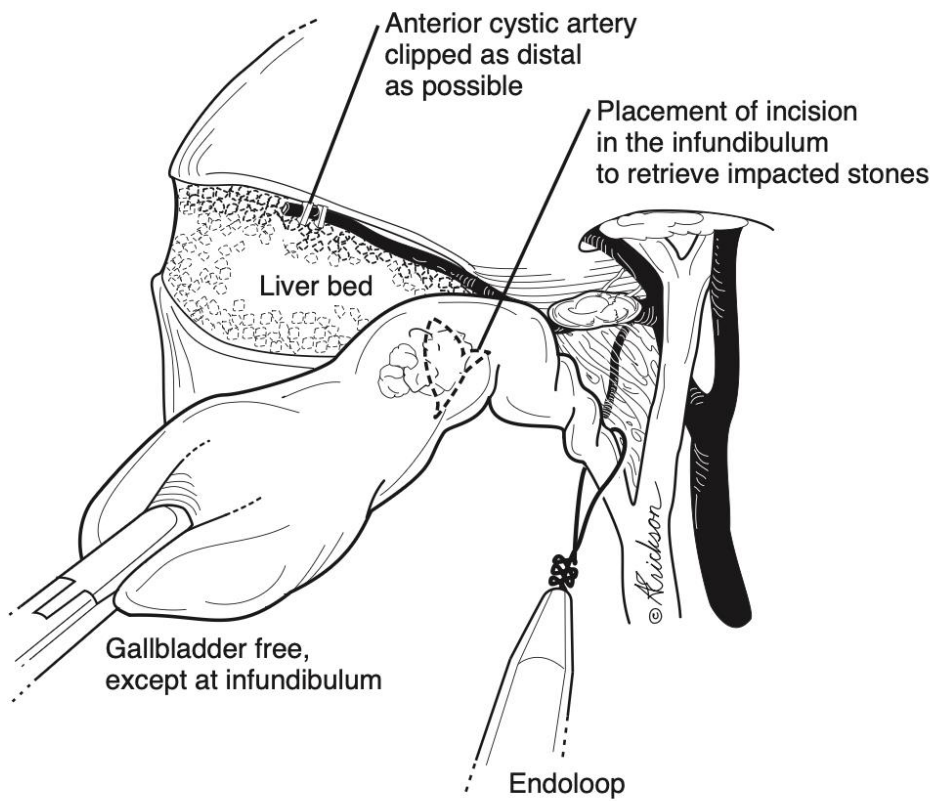
Perpendicular artery with posterior branches

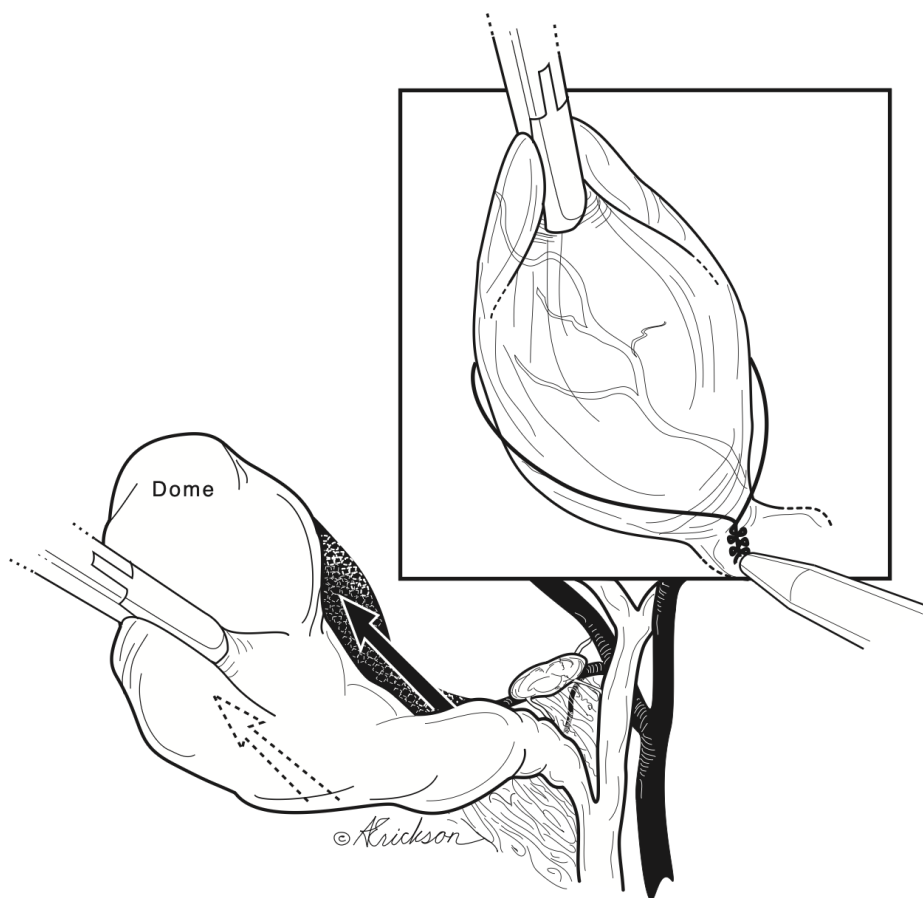


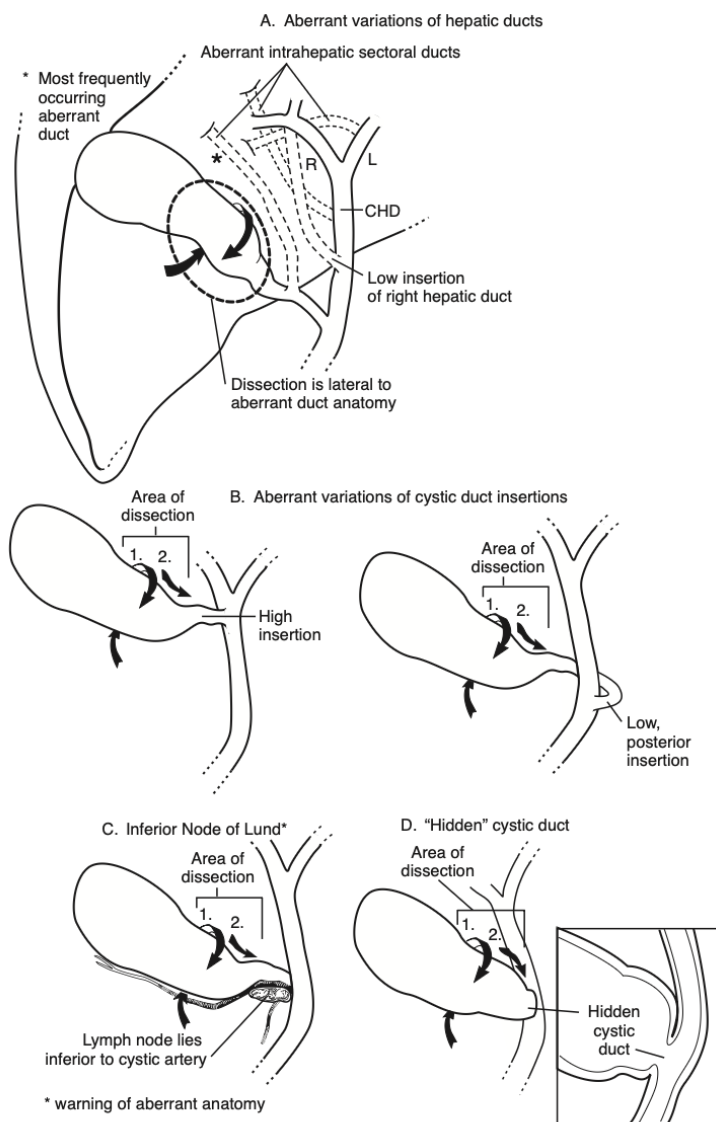






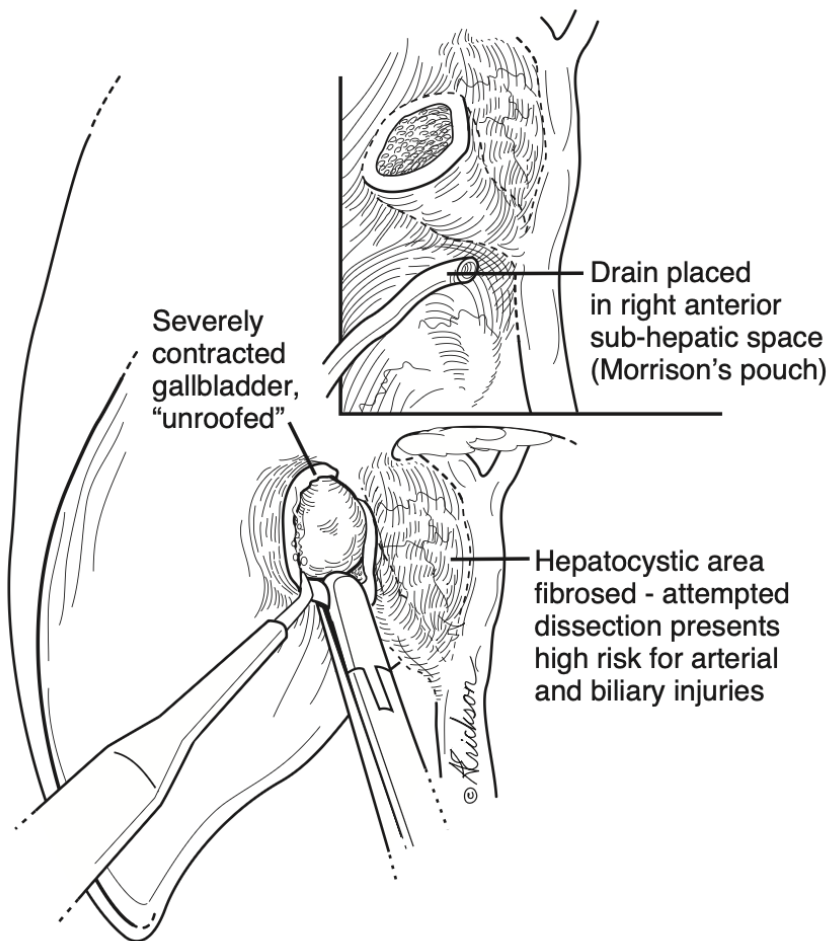




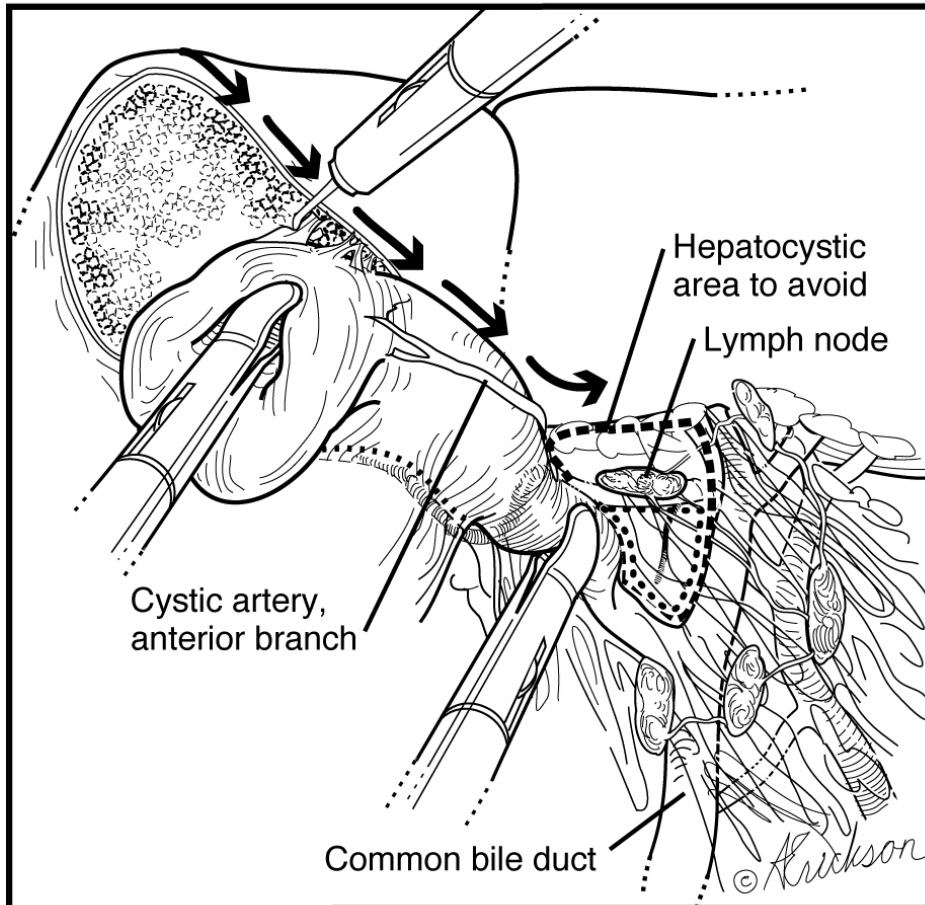


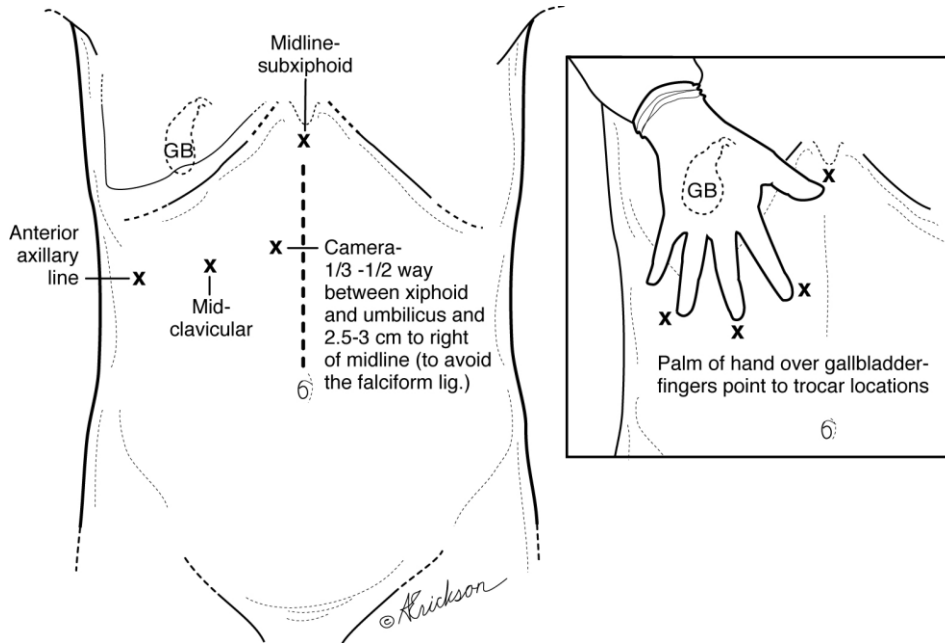
The circumferential dissection of the distal gallbladder/infundibulum must be done only after separation of the arteries (anterior and posterior) from the wall of the gallbladder. This is key to a safe dissection from lateral to medial (towards the hepatocystic triangle).

If this rule is not strictly followed, there will be potential biliary and vascular injuries in inflamed gallbladders or when aberrant anatomy is present. The same applies when the surgeon decides to take the gallbladder from top down. Separating the arterial branches from the gallbladder wall is essential for safe medial dissection. "

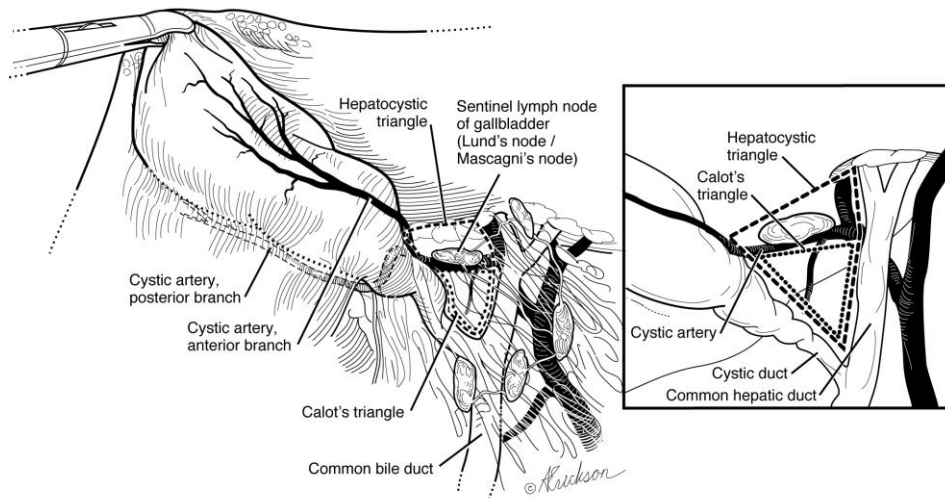


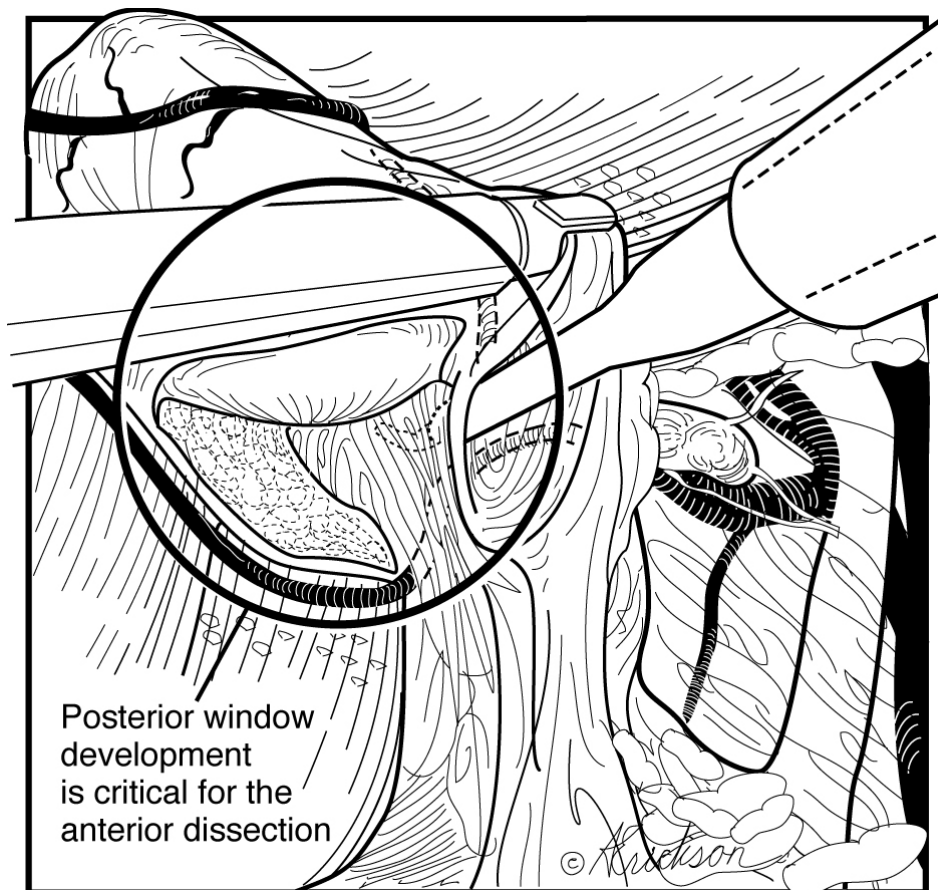
Top-down gallbladder dissection

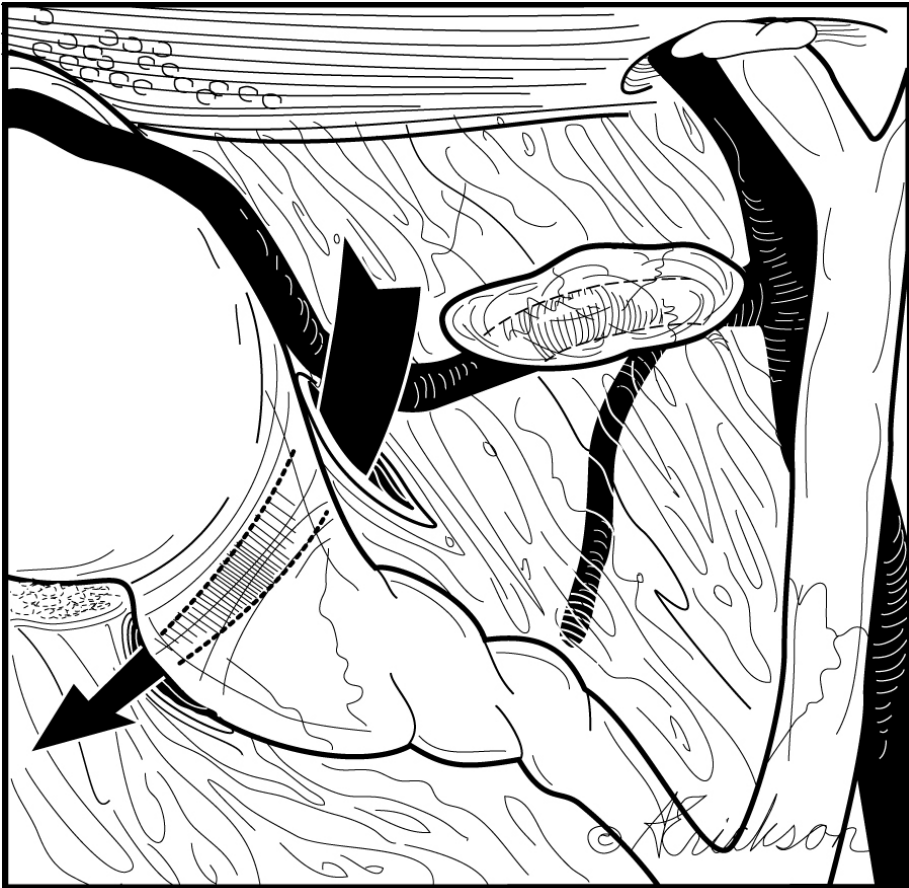


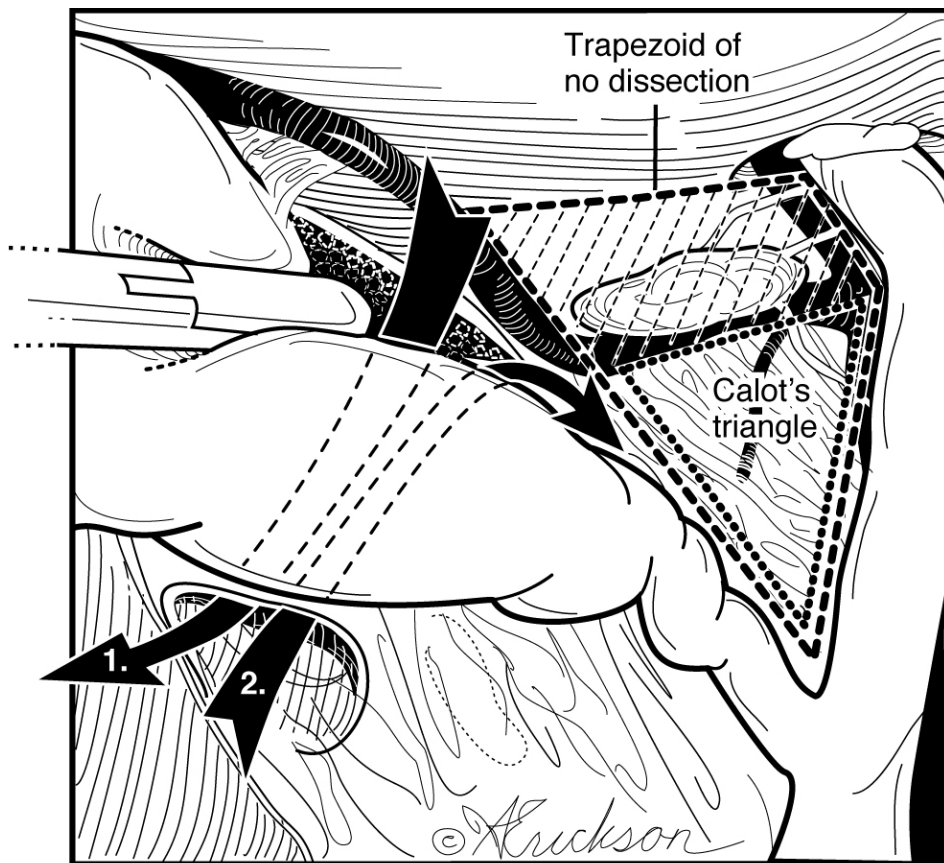


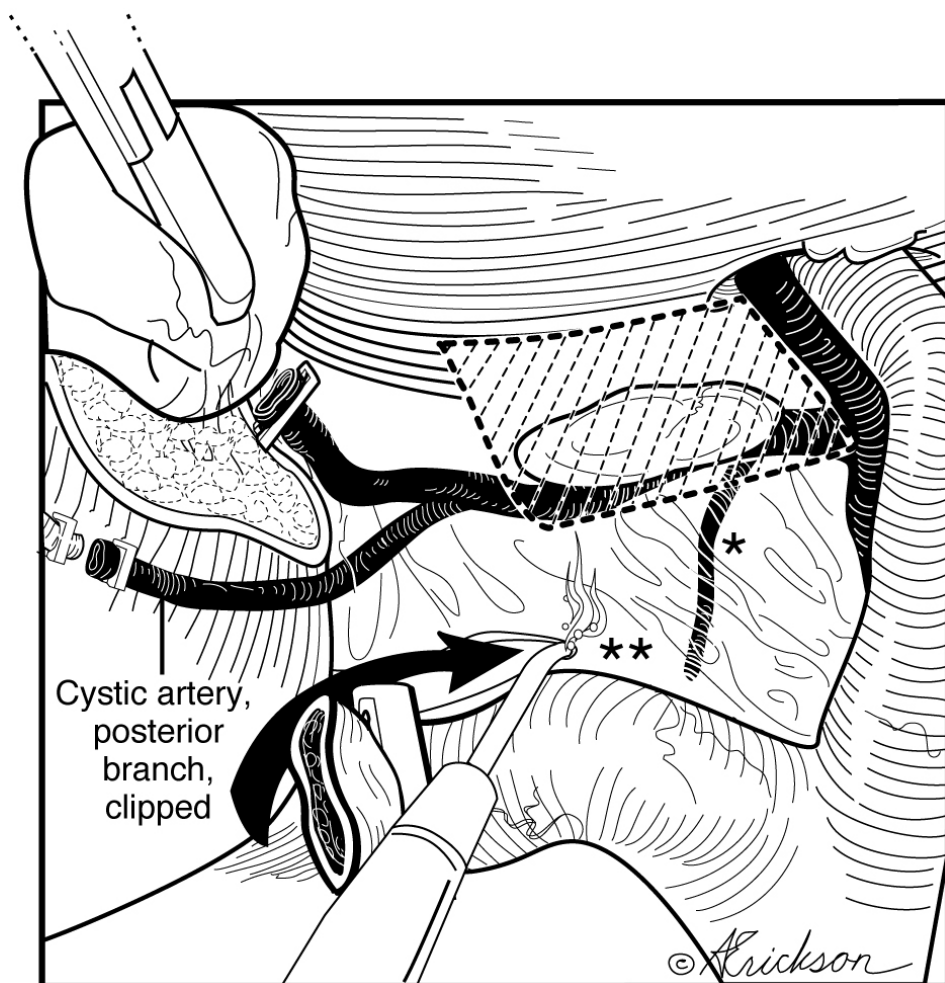
ANATOMIC CONSIDERATIONS:

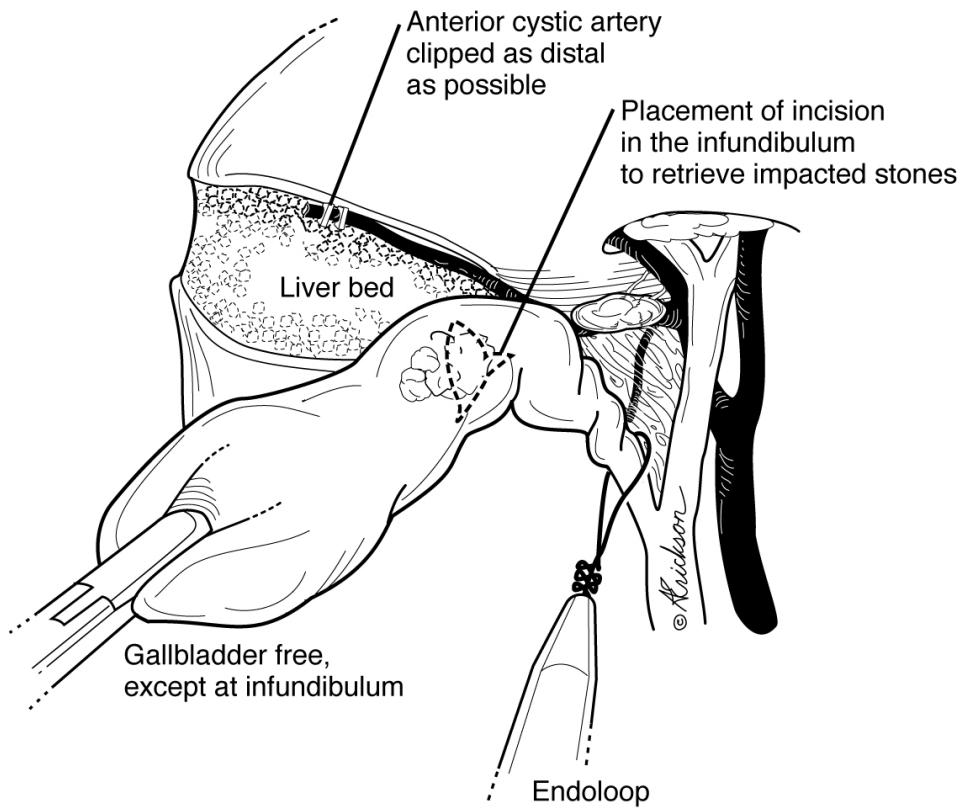


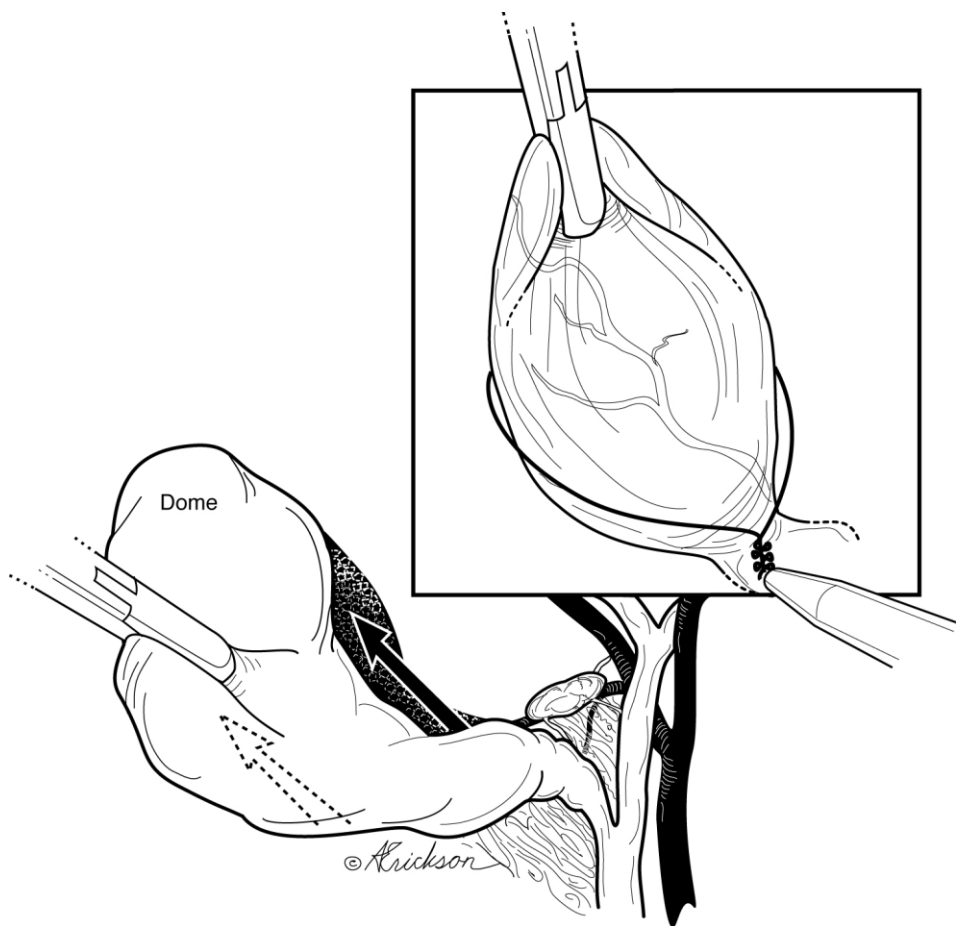




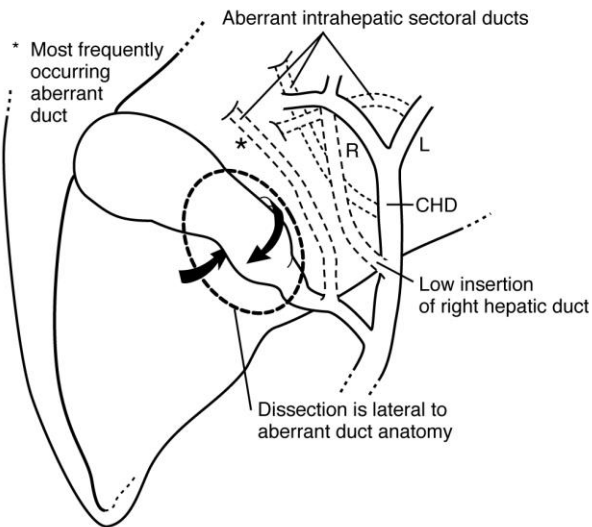




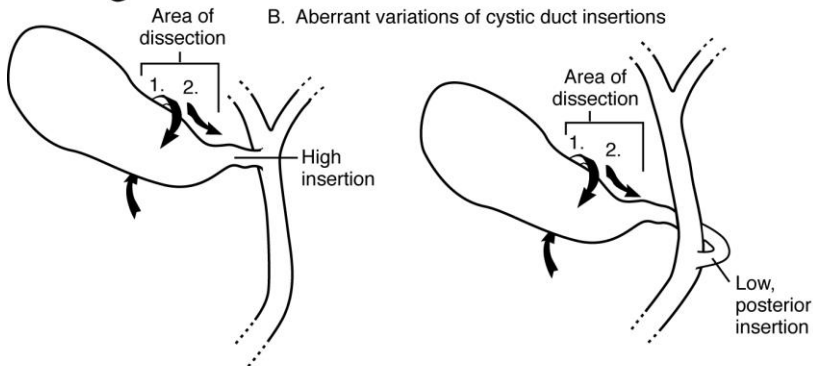




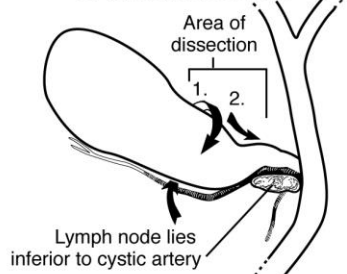
A. Aberrant variations of hepatic ducts



B. Aberrant variations of cystic duct insertions

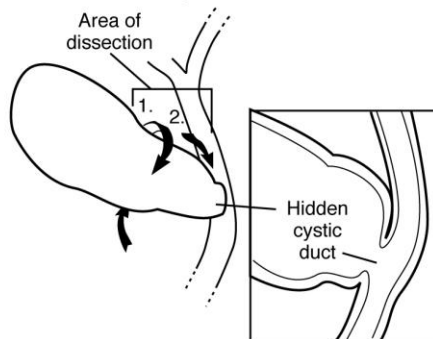


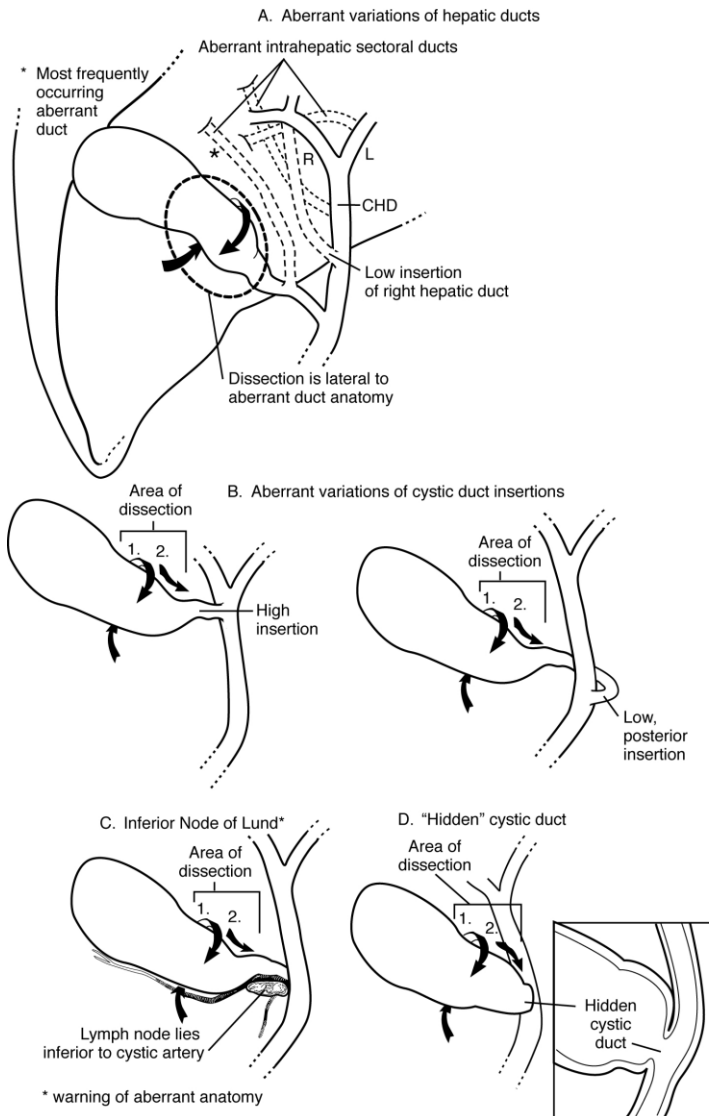
C. Inferior Node of Lund*



* warning of aberrant anatomy

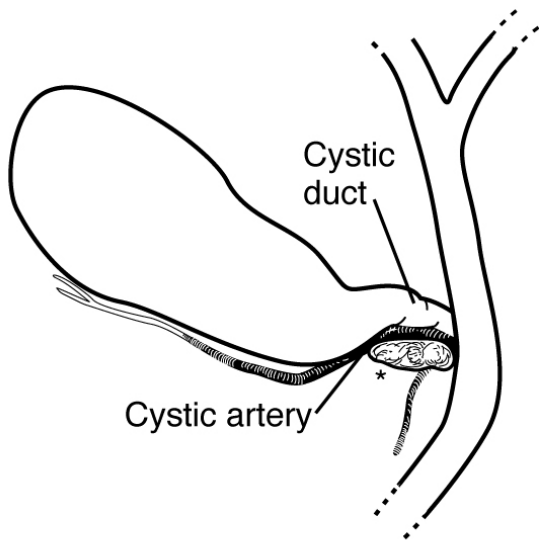
D. "Hidden" cystic duct



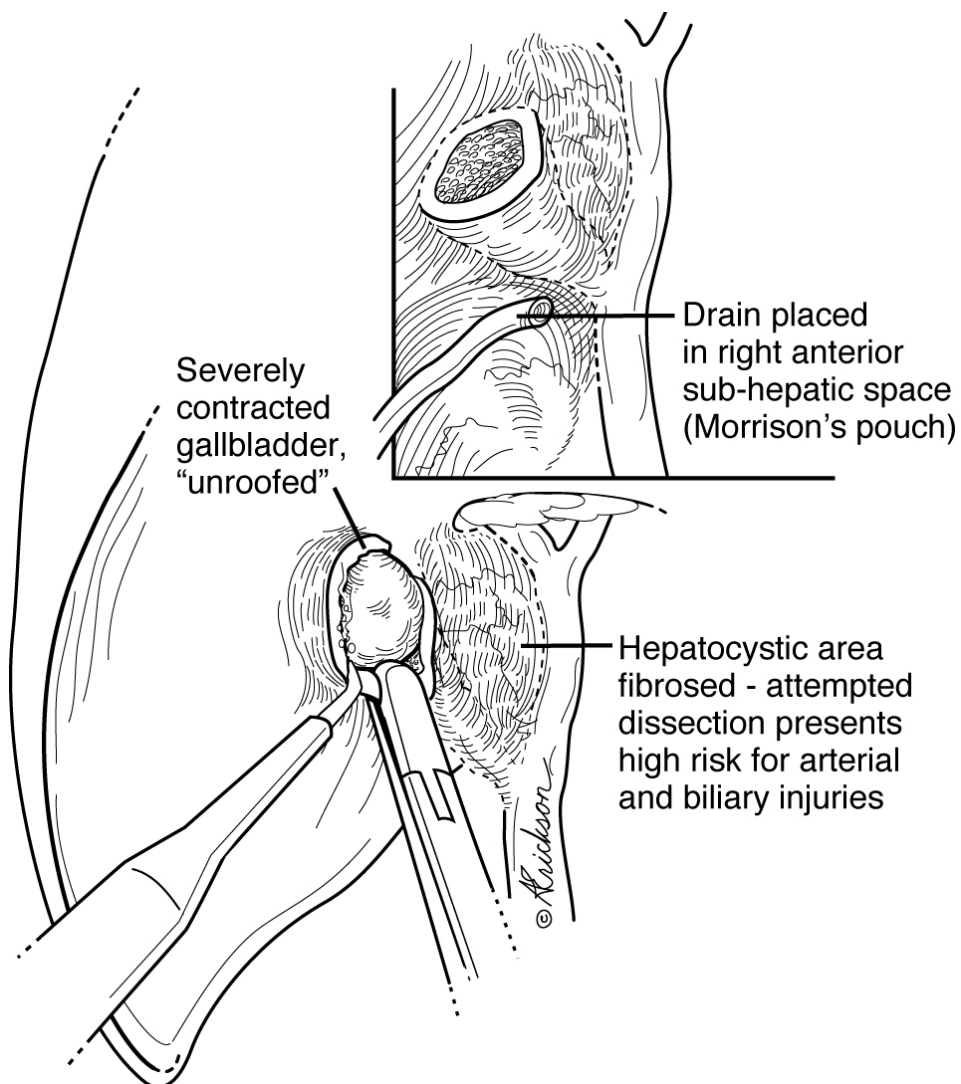


The circumferential dissection of the distal gallbladder/infundibulum must be done only after separation of the arteries (anterior and posterior) from the wall of the gallbladder. This is key to a safe dissection from lateral to medial (towards the hepatocystic triangle).

If this rule is not strictly followed, there will be potential biliary and vascular injuries in inflamed gallbladders or when aberrant anatomy is present. The same applies when the surgeon decides to take the gallbladder from top down. Separating the arterial branches from the gallbladder wall is essential for safe medial dissection. *

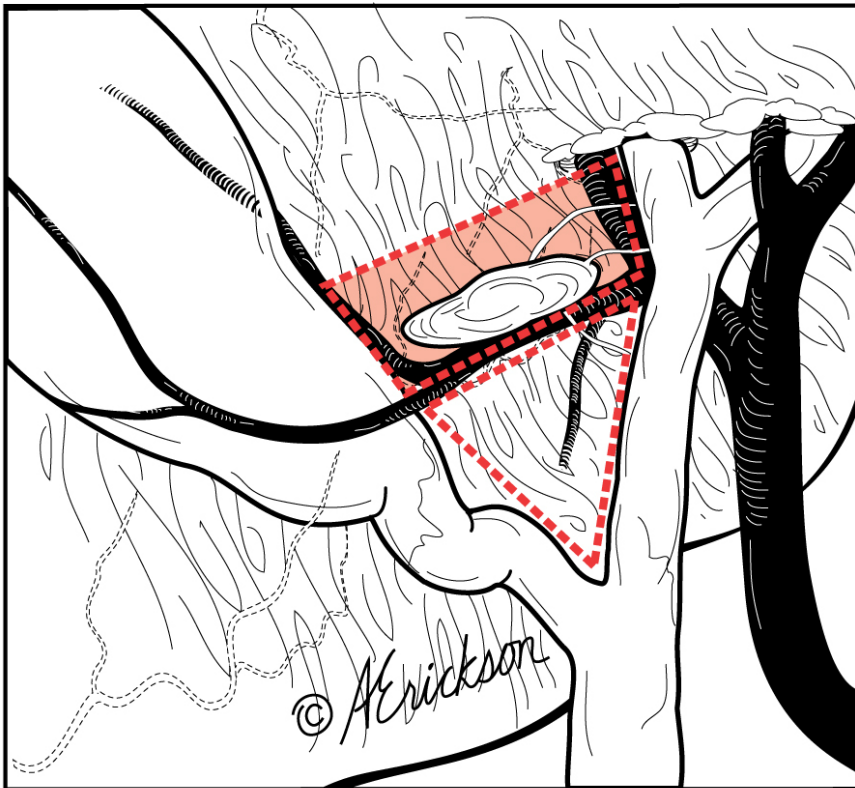


* Inferior Node of Lund-aberrant anatomy



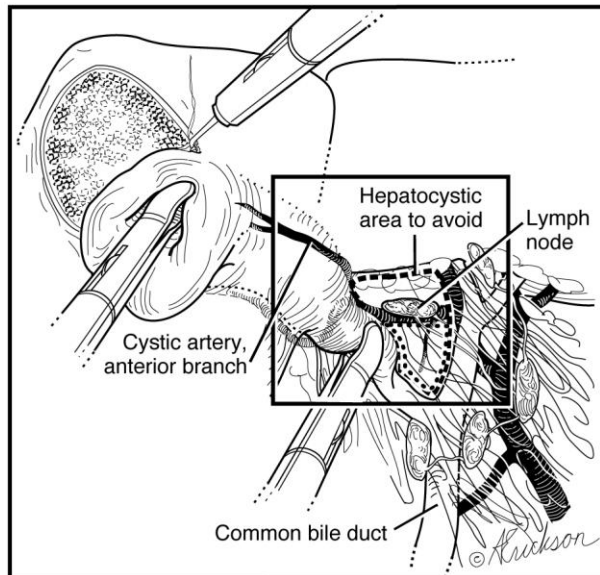


Shield of McElmoyle
Triangle of Calot

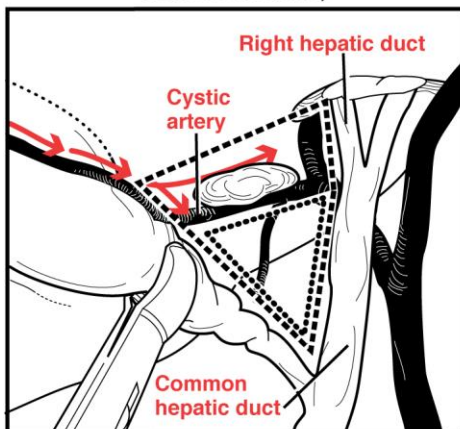


The "Critical View of Safety" (CVS) in
Laparoscopic Cholecystectomy is **WRONG**.
Do not disrupt McElmoyle's shield.

Top-down gallbladder dissection

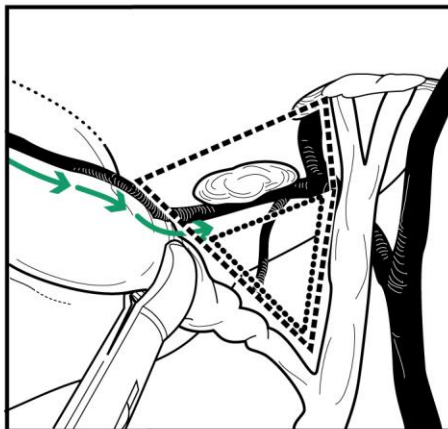


Incorrect (cephalad to cystic artery, anterior branch)



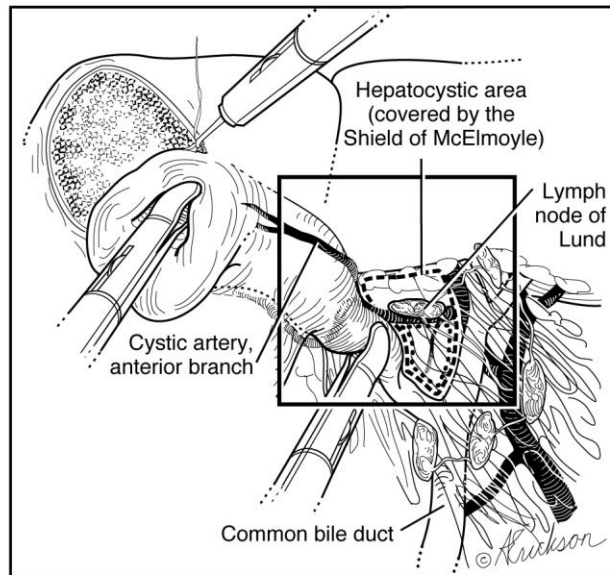
Structures (in red) are easily damaged during top-down gallbladder dissection.

Correct (between cystic artery, anterior branch and gallbladder)

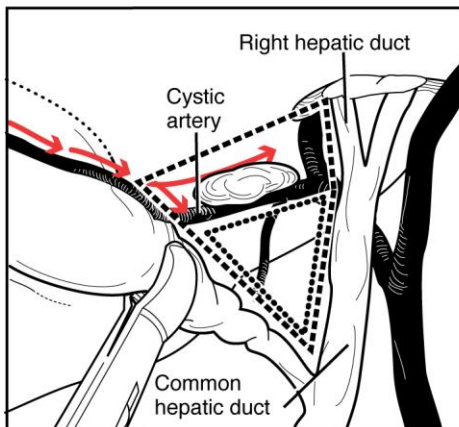


Dissection continues underneath shield, ant. br., cystic artery and other structures preserved.

Top-down gallbladder dissection



Incorrect (cephalad to cystic artery, anterior branch)

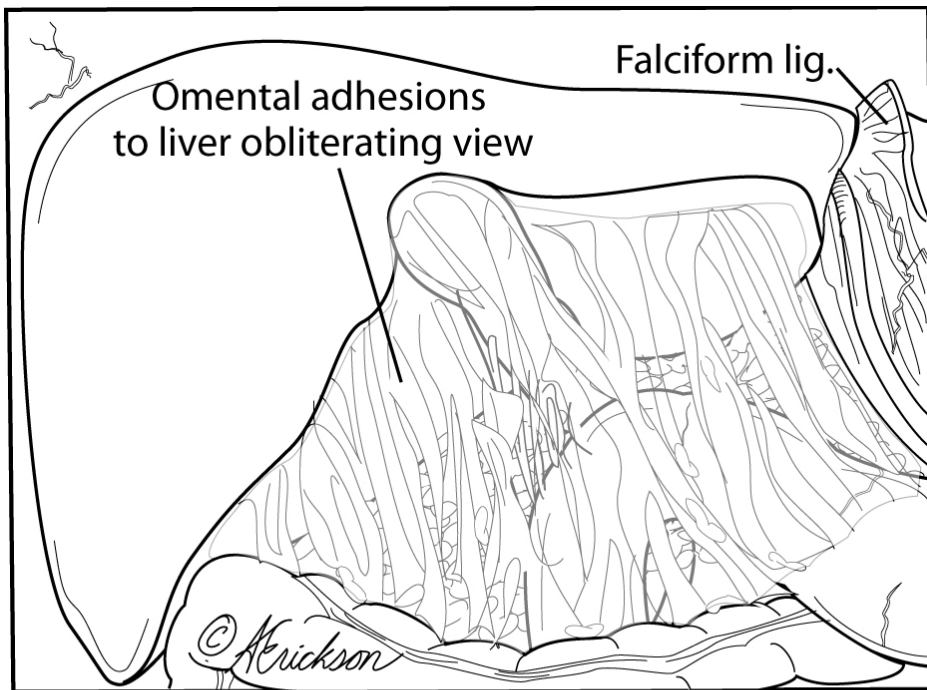


Entering the hepatocystic area and disturbing the Shield of McElmoyle will lead to serious injuries.

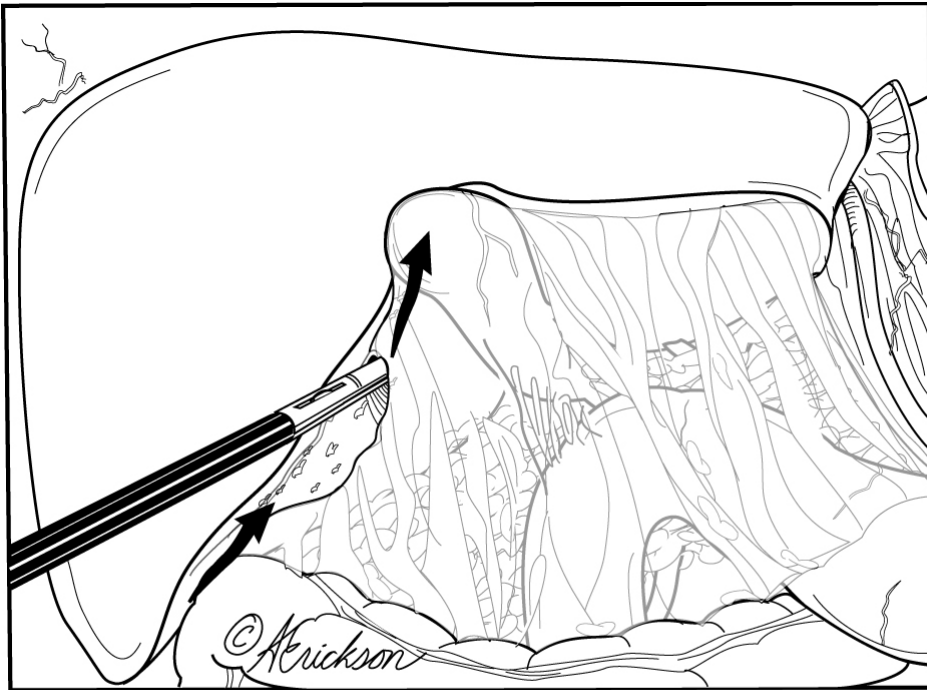
Correct (between cystic artery, anterior branch and gallbladder)



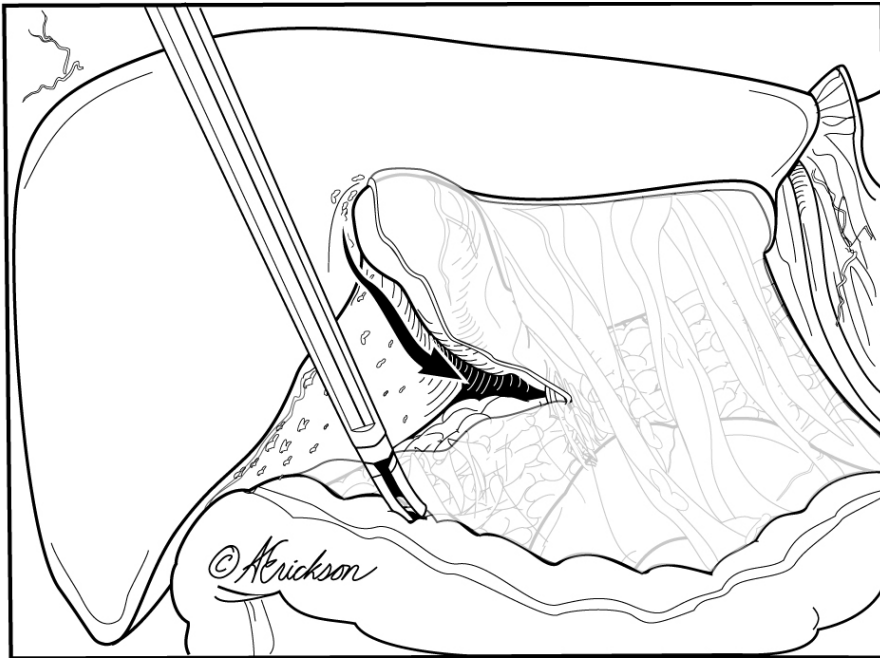
Dissection continues along the gallbladder and cystic duct wall leaving intact, the shield of McElmoyle and Lymph node of Lund.



Duodenum riding over Hartman's pouch; adhesions between duodenum and distal / infundibulum of gallbladder.



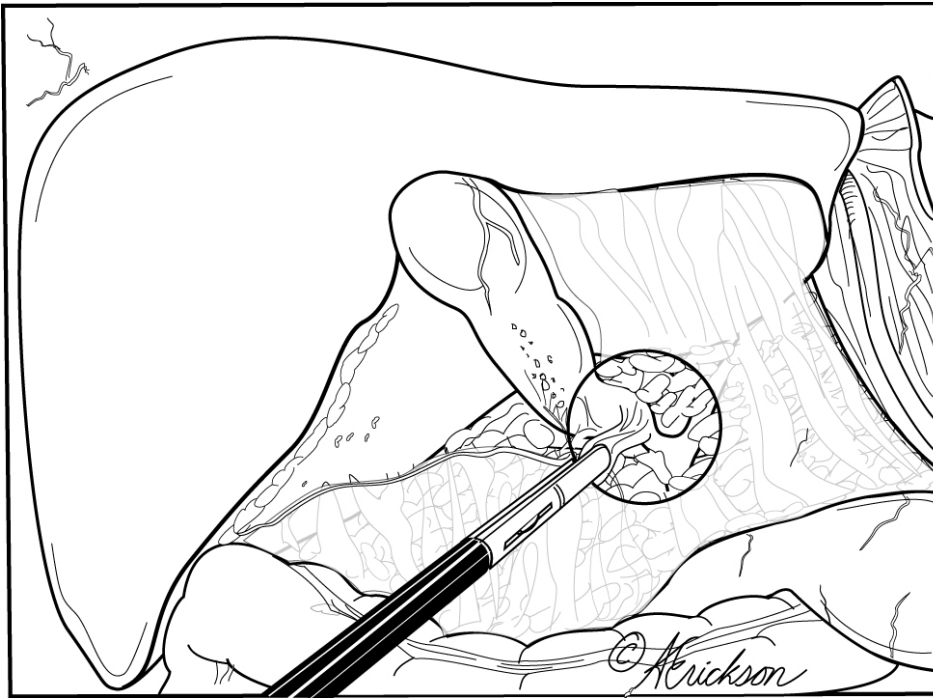
1 - Dissection starts along the inferior lateral edge of the right lobe of the liver until the top of the gallbladder is visualized.



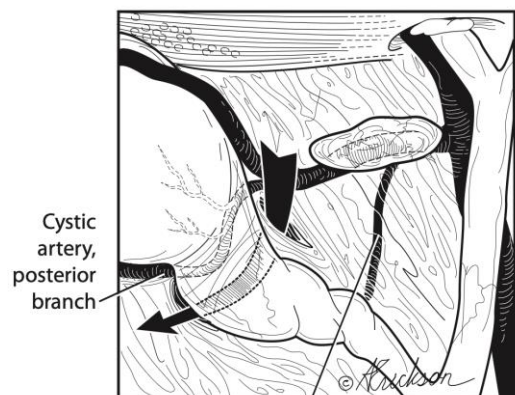
2 - Once the top of the gallbladder is visible, then the dissection proceeds top down along the POSTERIOR and LATERAL aspect of the gallbladder and the undersurface of the liver until the hepatorenal recess (Morrison's pouch) is reached and the postero-lateral aspect of the infundibulum is well visible and defined. ***Safeguard the transverse colon.***



3 - Back to the top of the gallbladder and staying flush with the gallbladder wall the dissection continues gingerly towards the Hartman's pouch where the duodenum often will be seen adherent to the distal gallbladder and care should be taken to avoid using energy devices. At this point the duodenum is dissected free sharply and very prudently from lateral to medial. ***Safeguard the duodenum.***

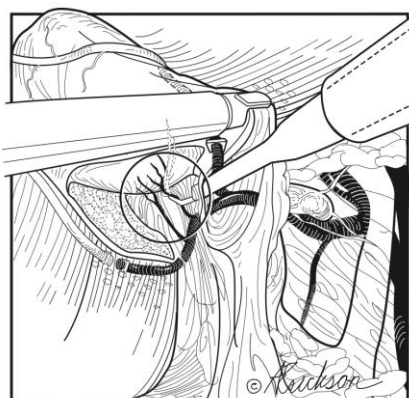


4 - The porta hepatis is then accessed by lysing the medial adhesions overlying it. ***Safeguard the porta hepatis.***

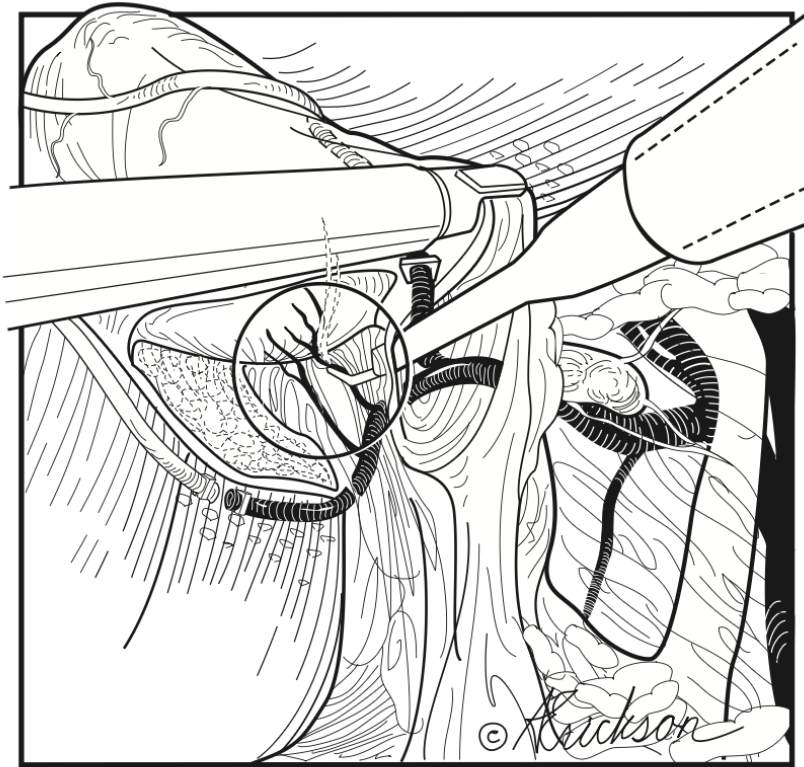


Cystic artery,
posterior
branch

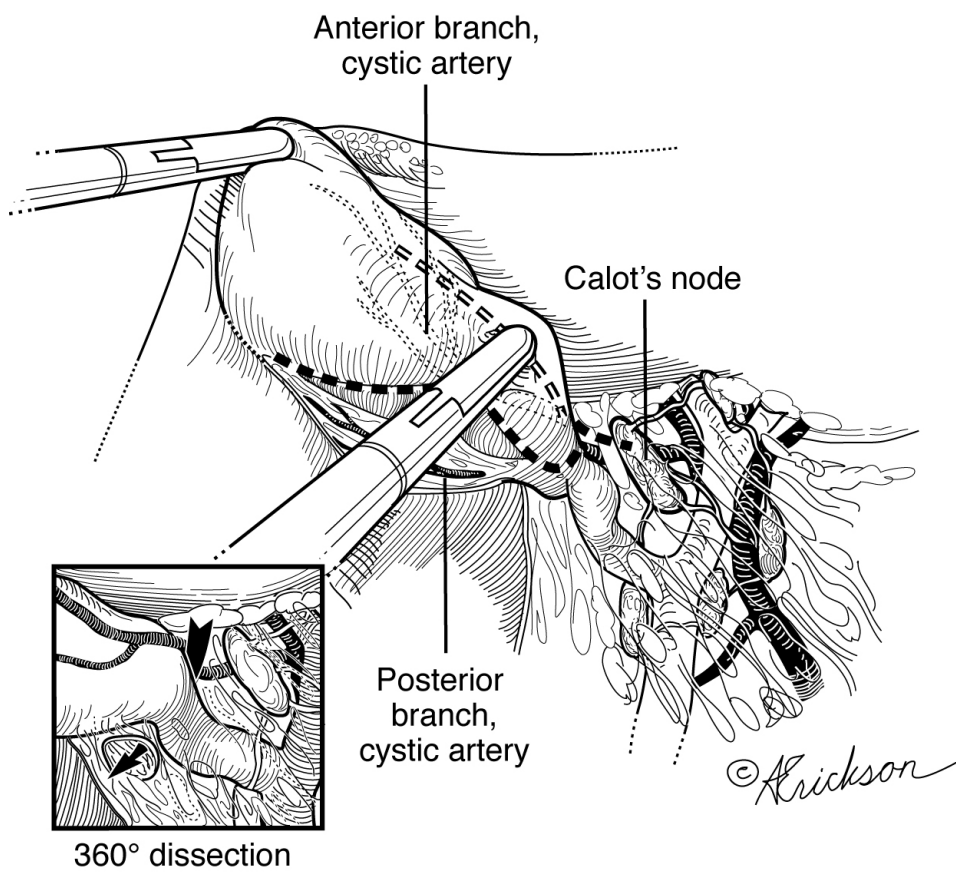
"H" artery- branch
off of cystic artery

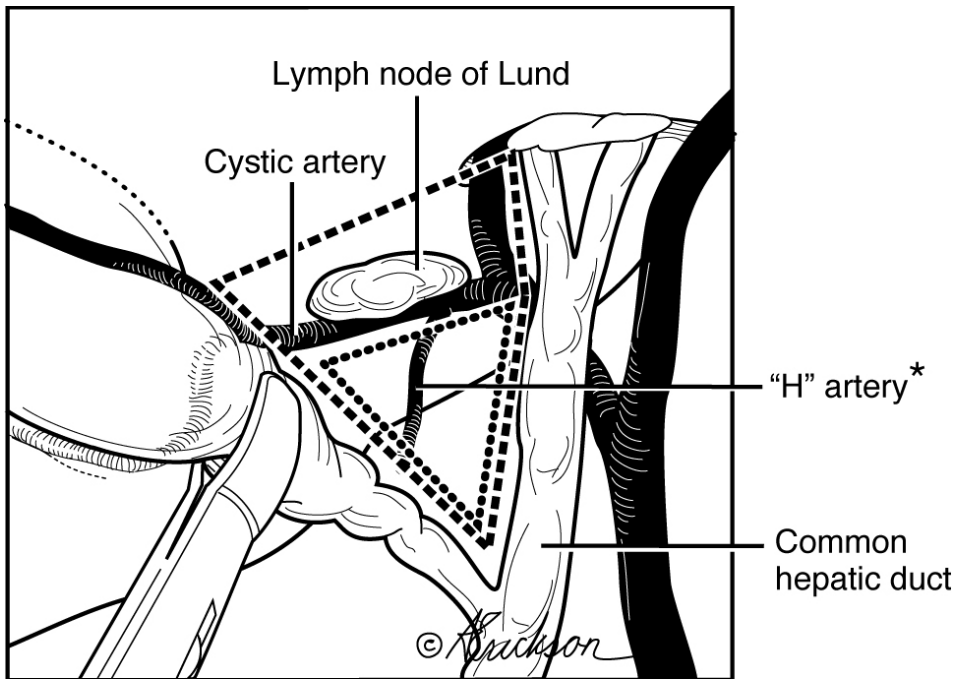


"Perpendicular" posterior cystic artery
branches



"Perpendicular" posterior cystic artery branches





* Identification of the "H" artery is critical – continued dissection medially, will result in damage to the common bile duct.

Shield of McElmoyle =
Hepatocystic area of no-dissection



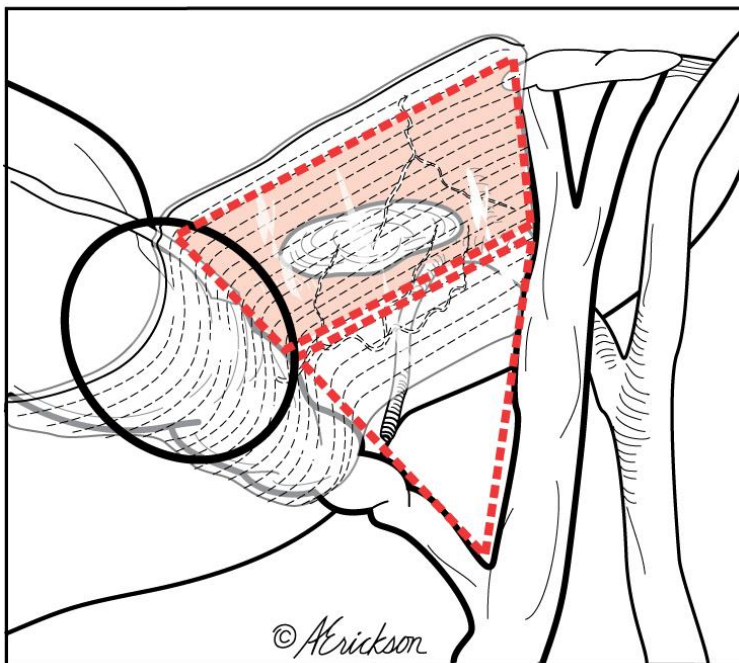
Shield of McElmoyle (visceral
peritoneum)



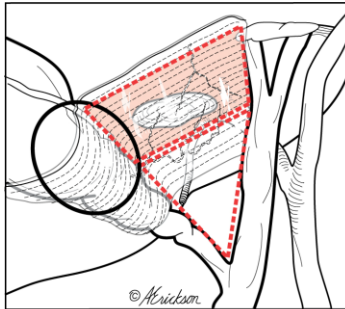
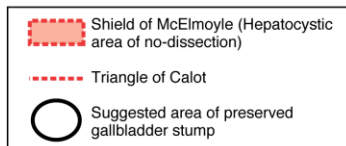
Triangle of Calot



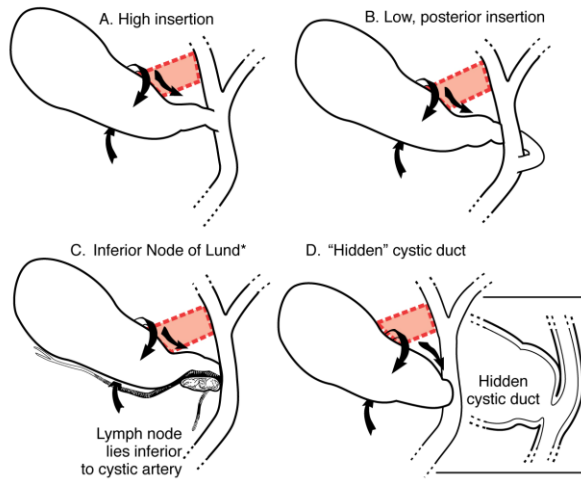
Suggested area of preserved
gallbladder stump

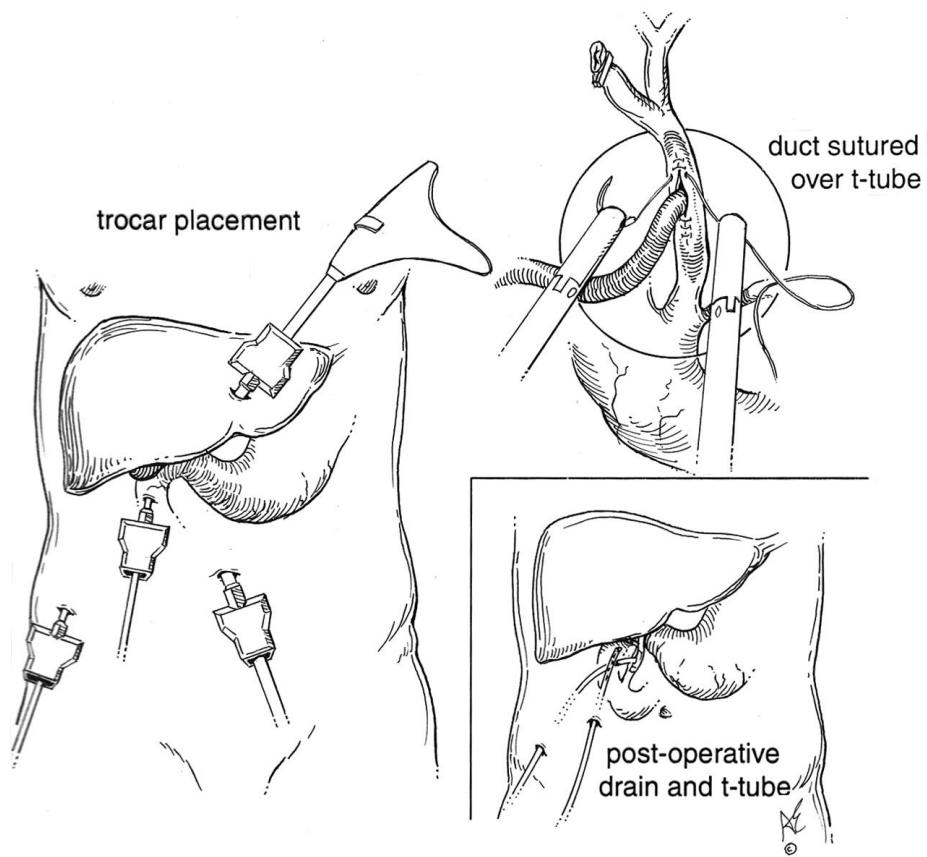


Shield of McElmoyle
(visceral peritoneum covering gallbladder and hepatocystic area)

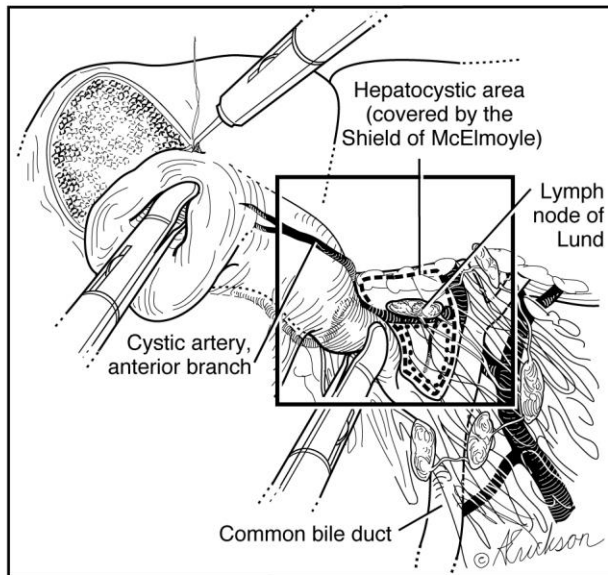


Aberrant anatomy:

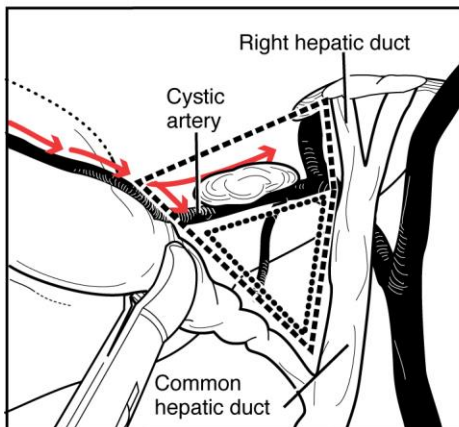




Top-down gallbladder dissection



Incorrect (cephalad to cystic artery, anterior branch)



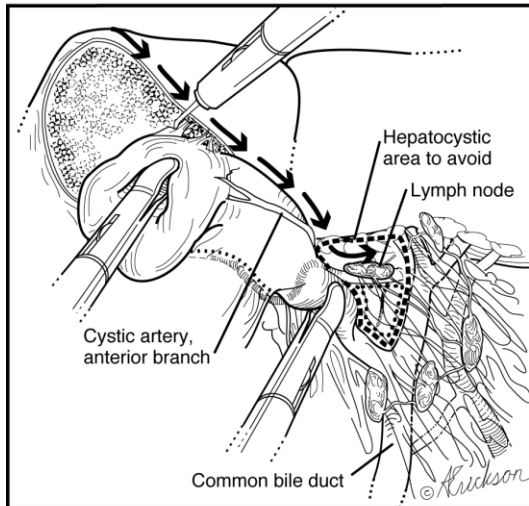
Entering the hepatocystic area and disturbing the Shield of McElmoyle will lead to serious injuries.

Correct (between cystic artery, anterior branch and gallbladder)

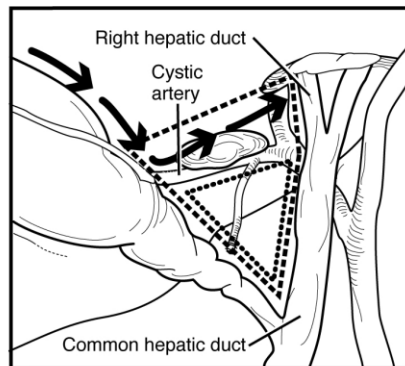


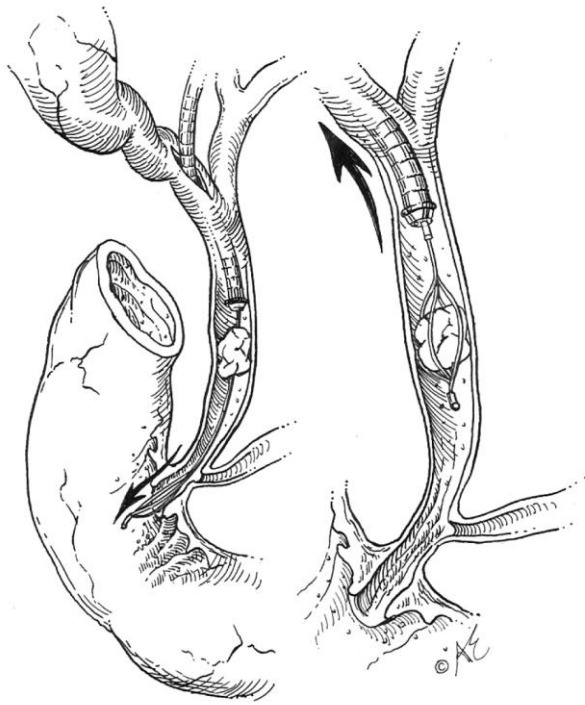
Dissection continues along the gallbladder and cystic duct wall leaving intact, the shield of McElmoyle and Lymph node of Lund.

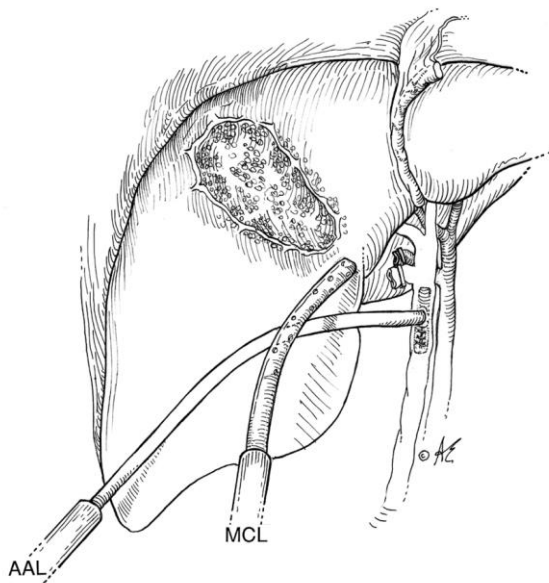
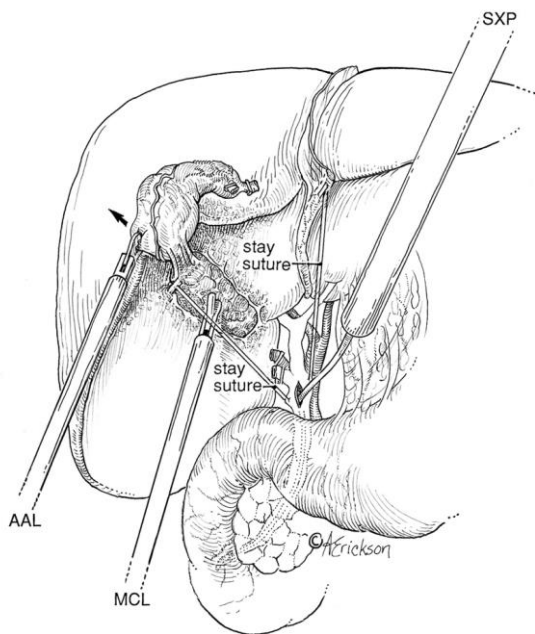
Top-down gallbladder dissection

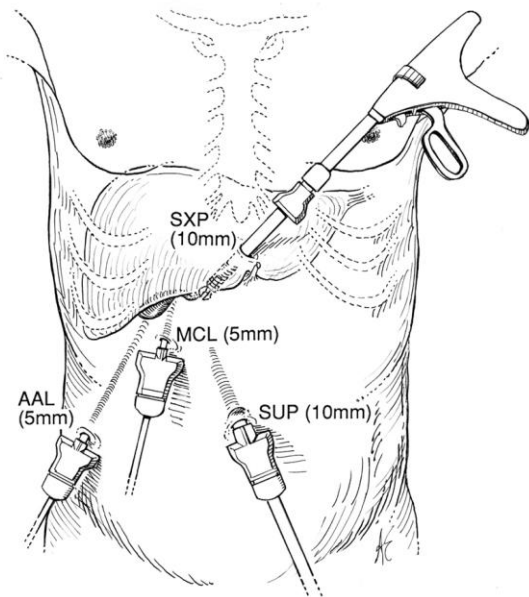
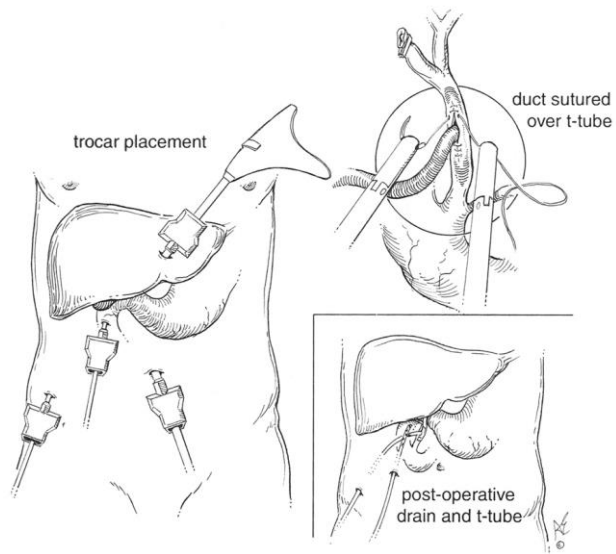


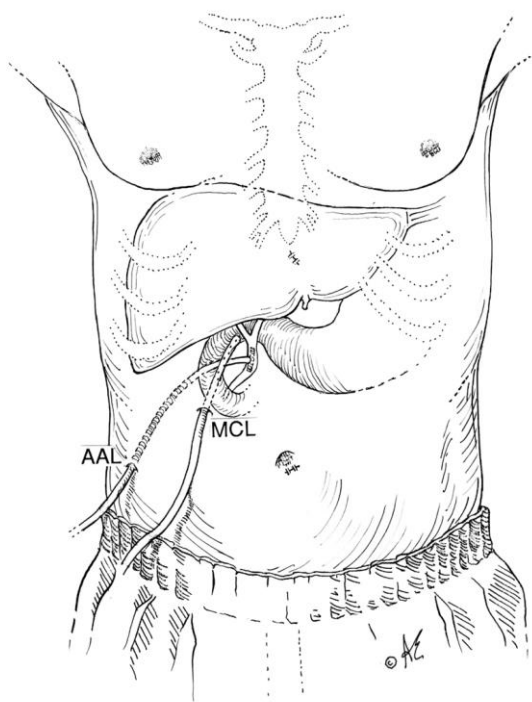
Structures easily damaged by the top - down gallbladder dissection

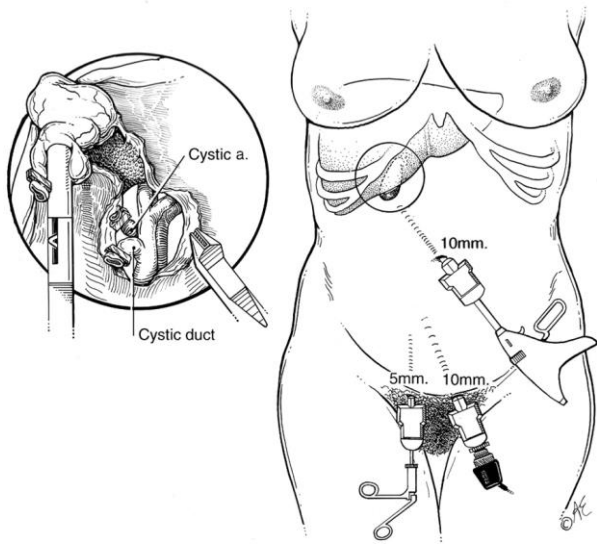






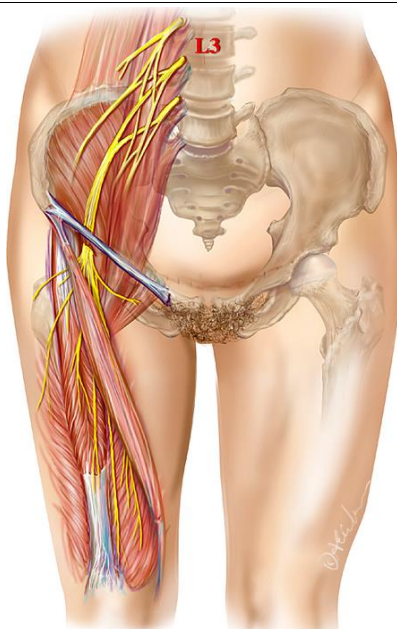
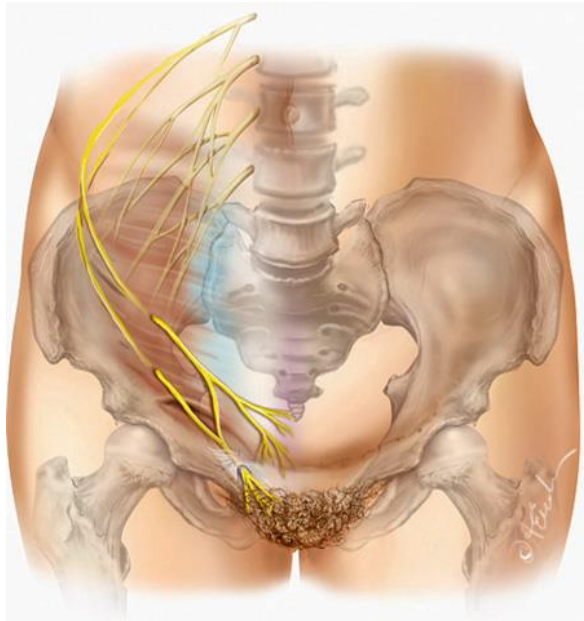






Groin





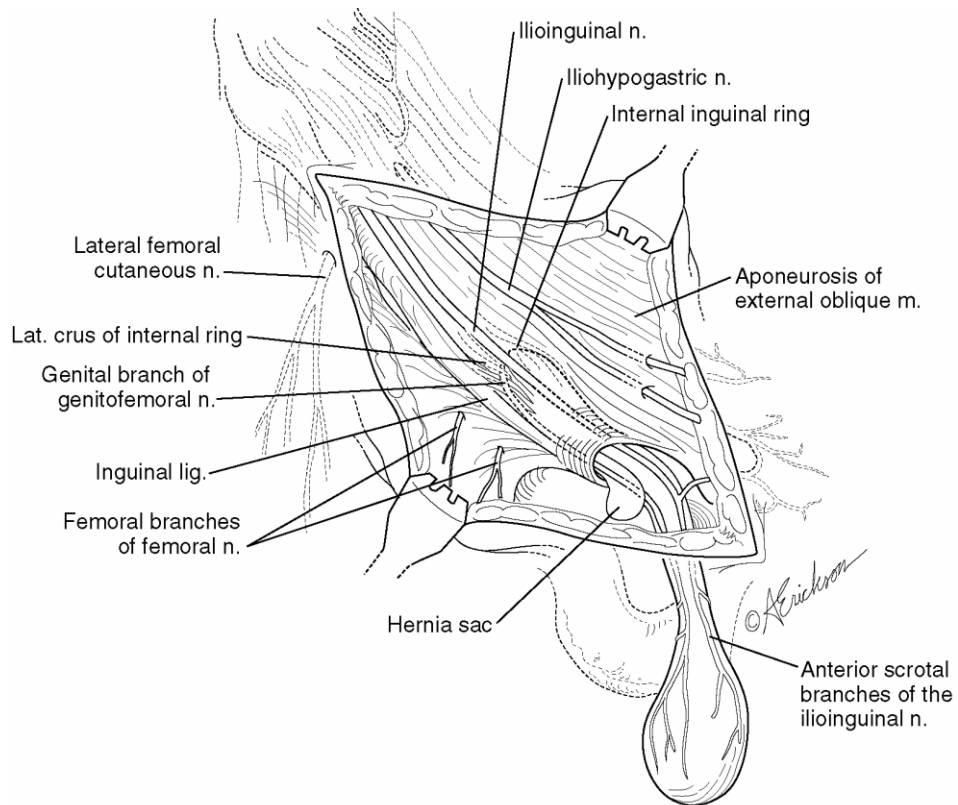


Figure 1. Nerves encountered during the anterior inguinal herniorrhaphy approach.
 With permission from Anne Erickson.

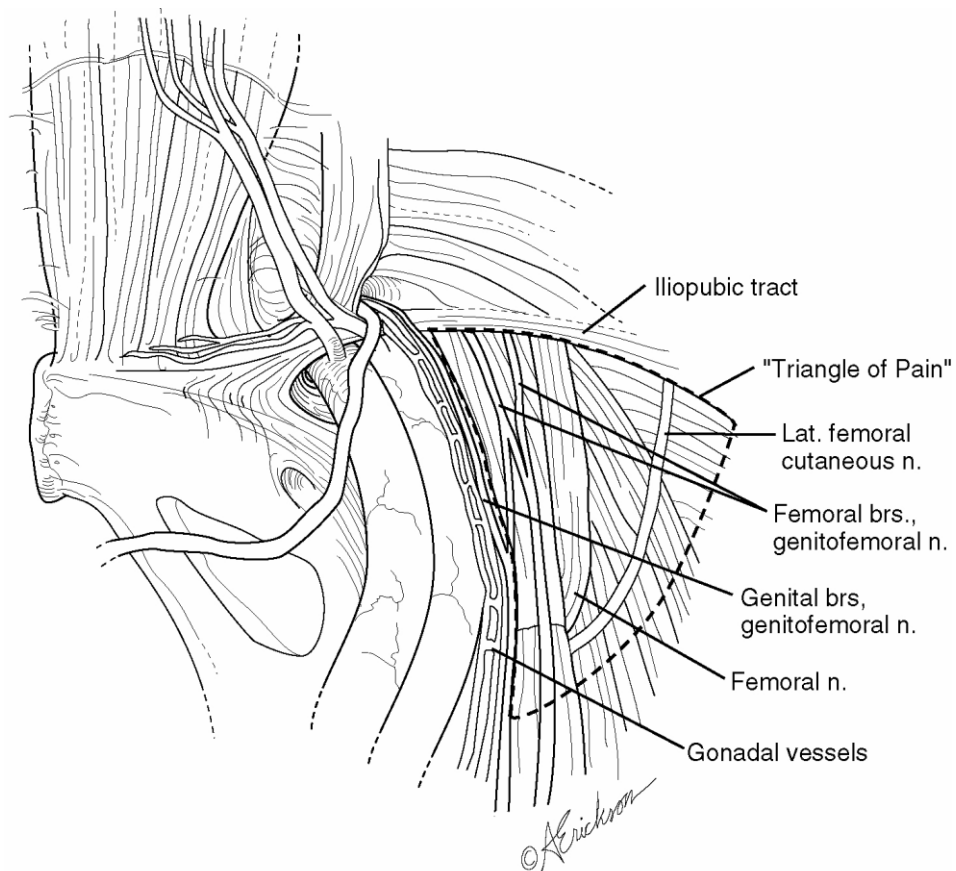


Figure 2. Nerves prone to injury during laparoscopic inguinal herniorrhaphy.
With permission from Anne Erickson.

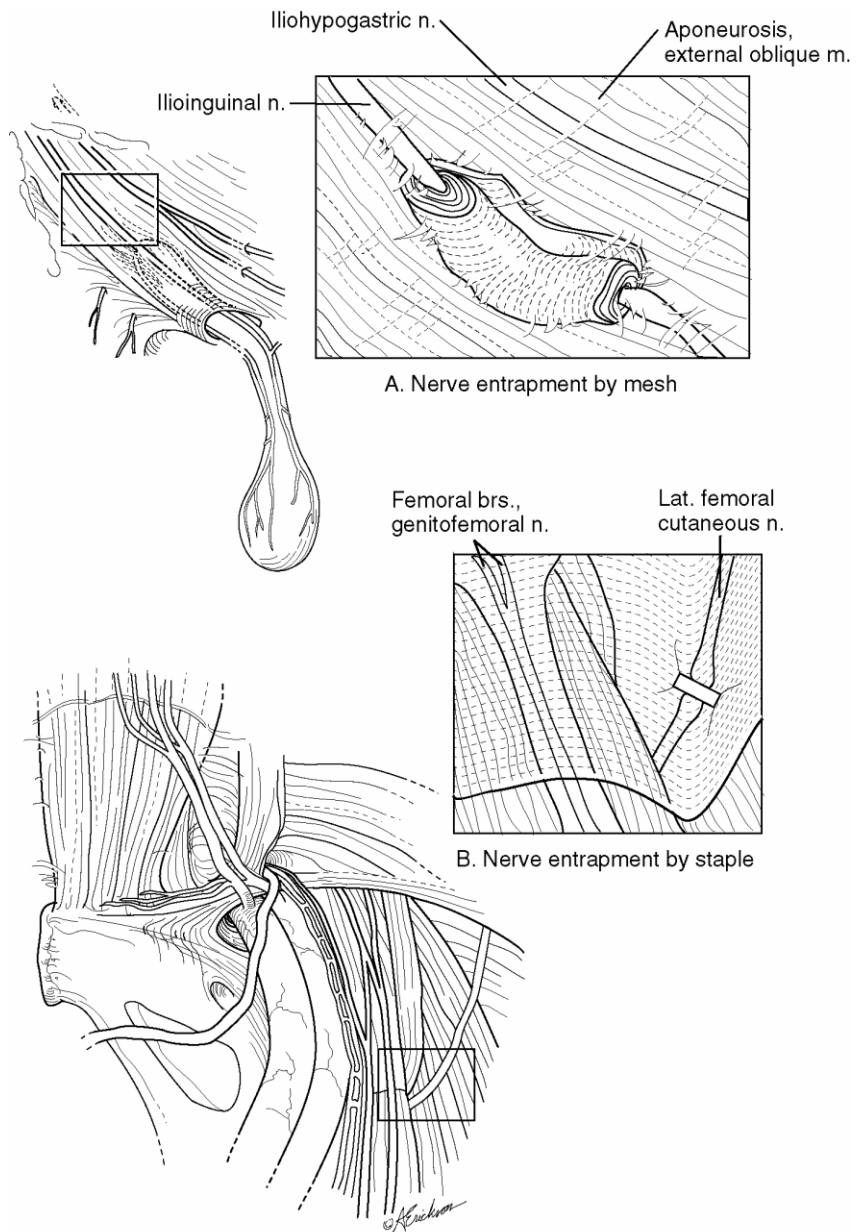
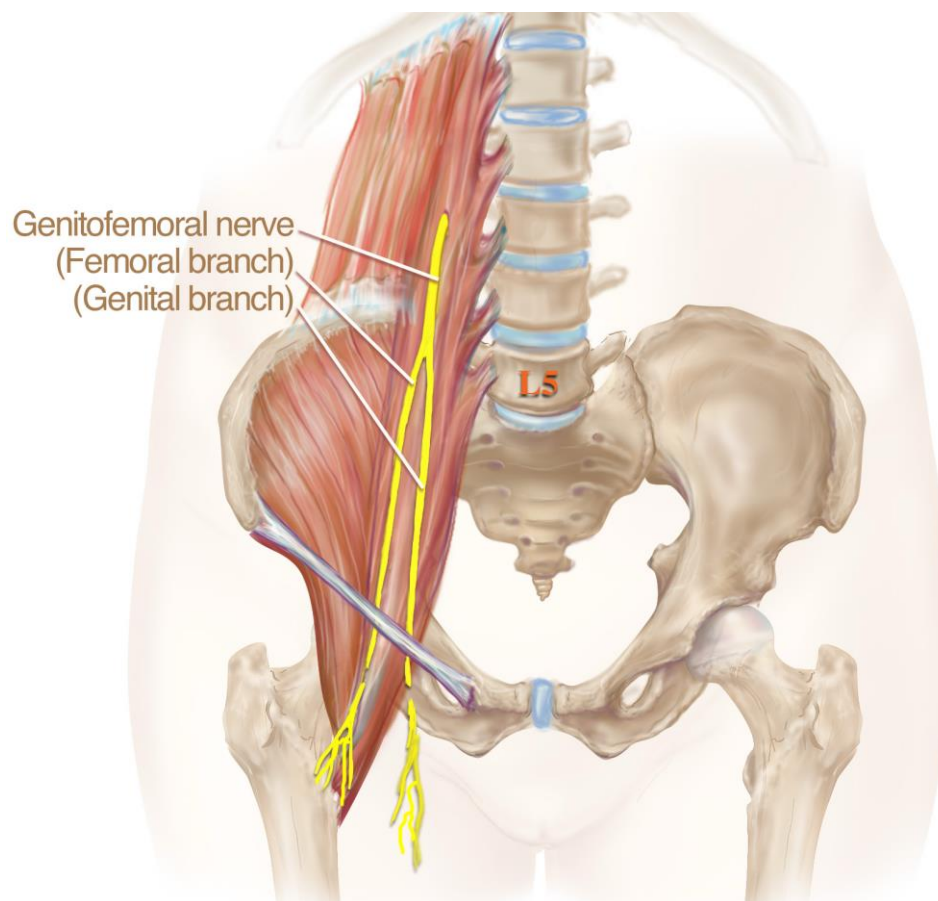
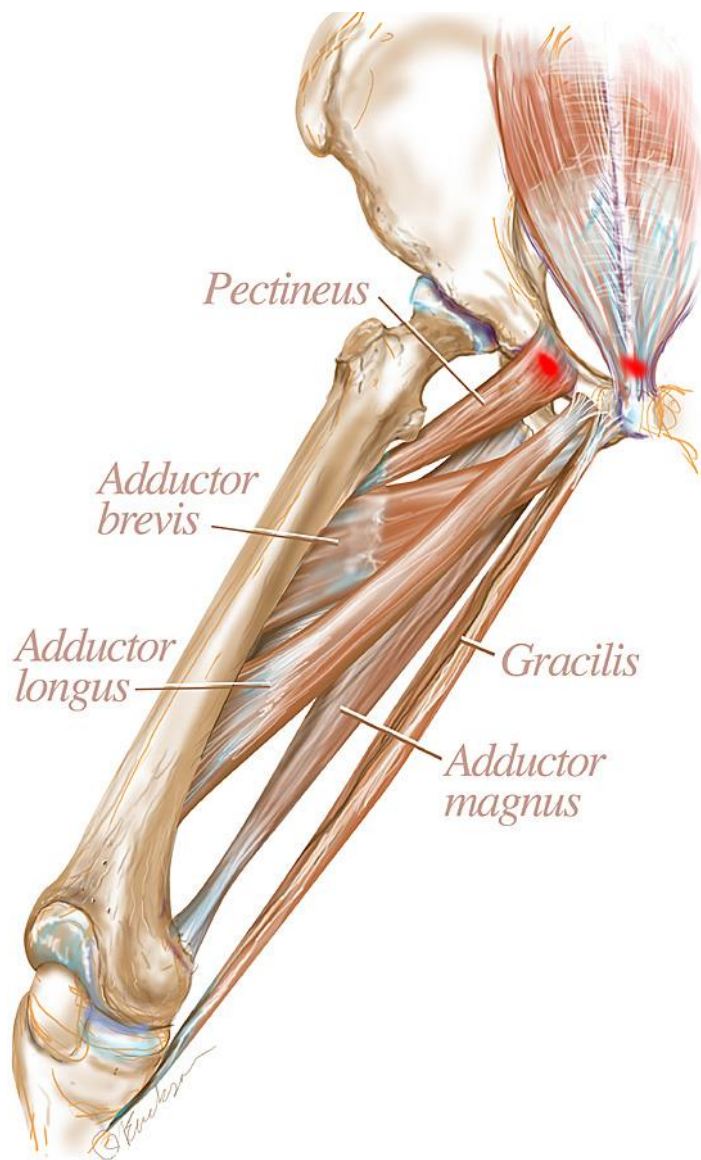
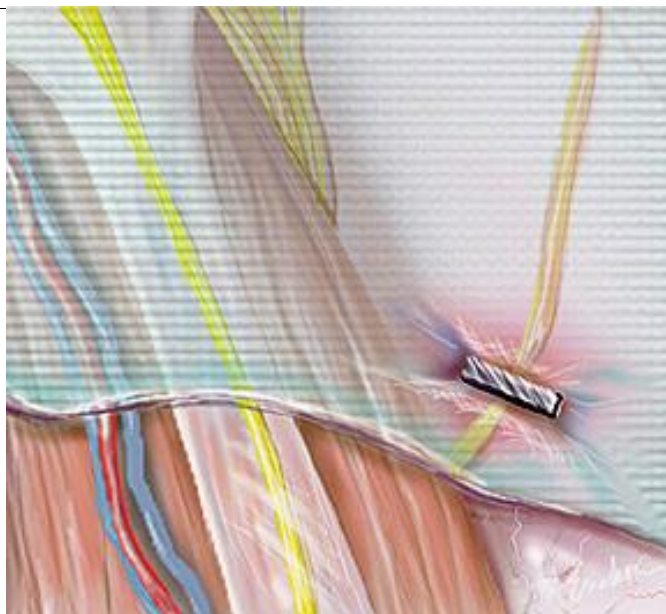
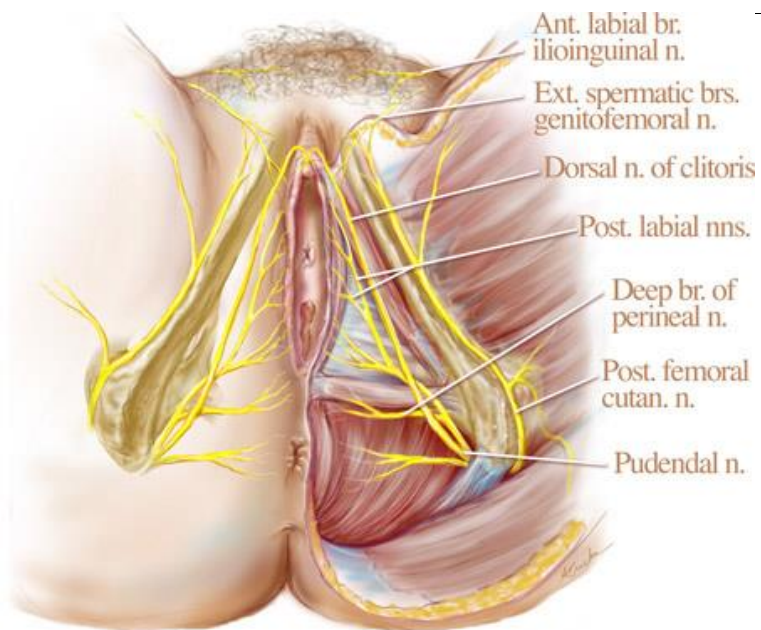


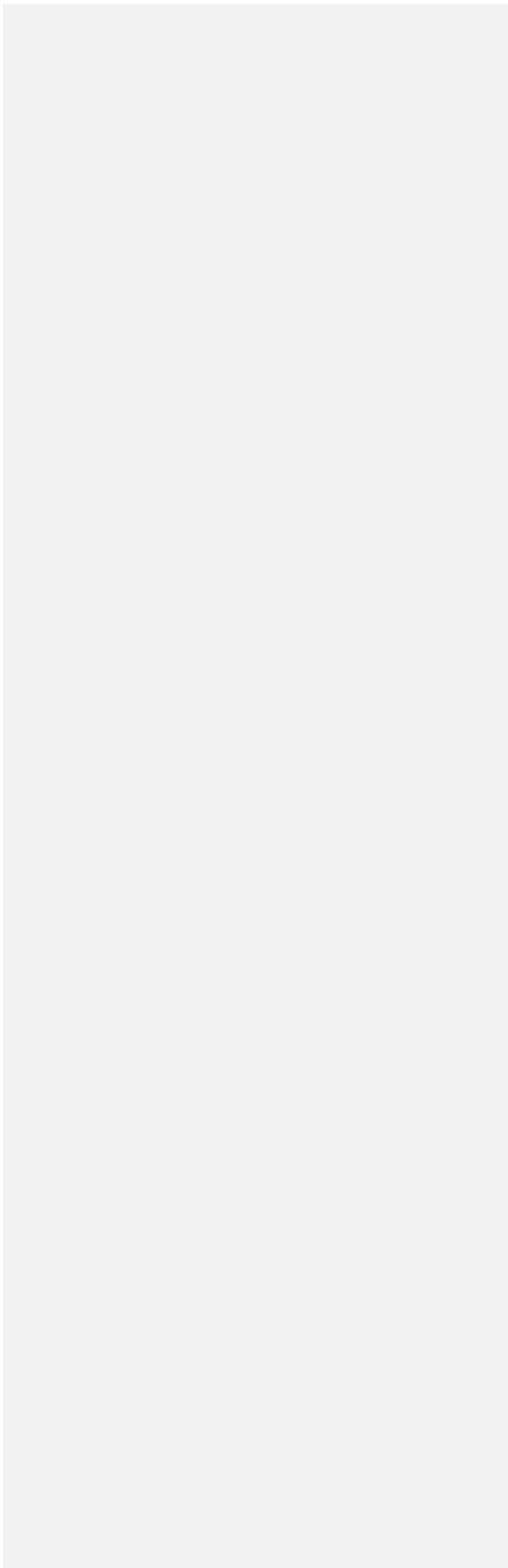
Figure 3. Neuropathic etiologies of post herniorrhaphy groin pain.
 With permission from Anne Erickson.

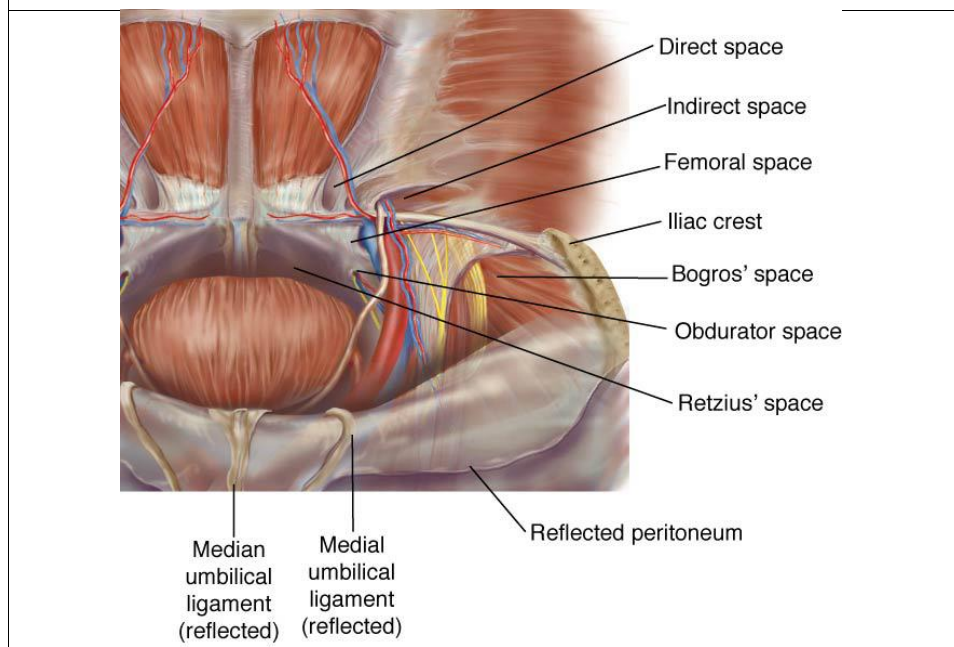
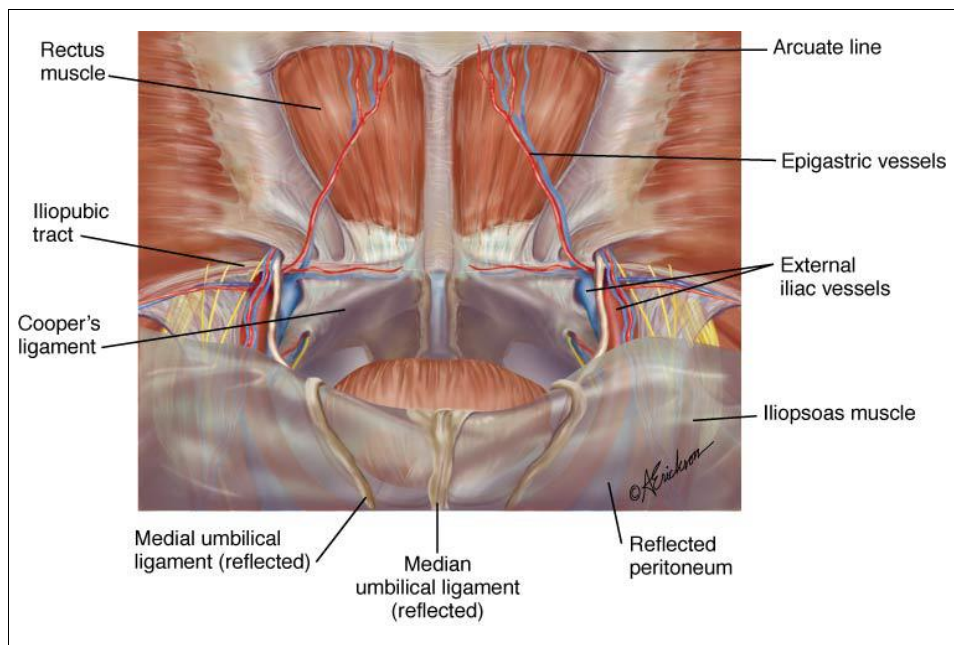


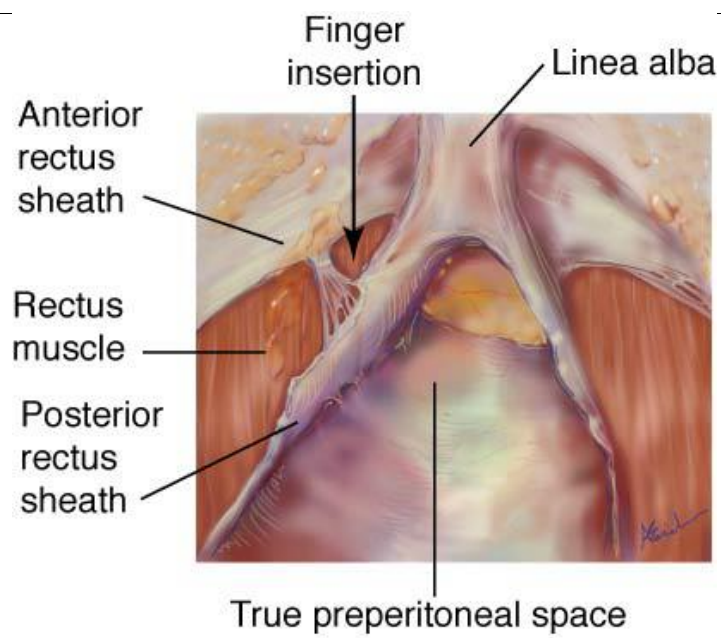
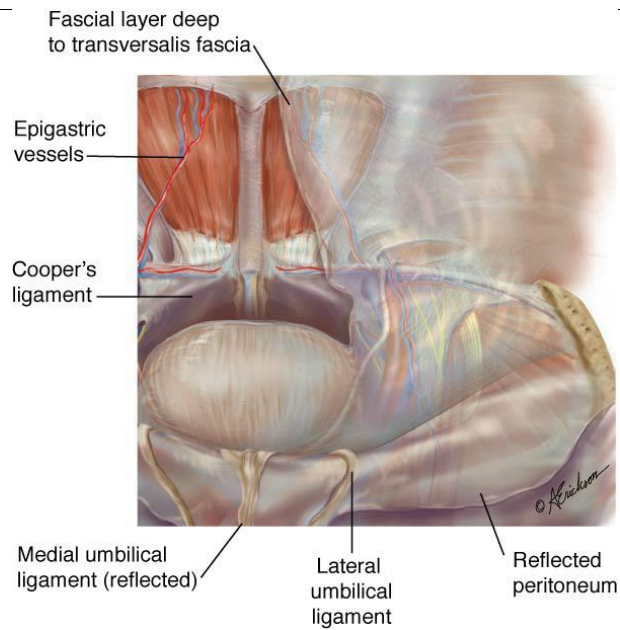


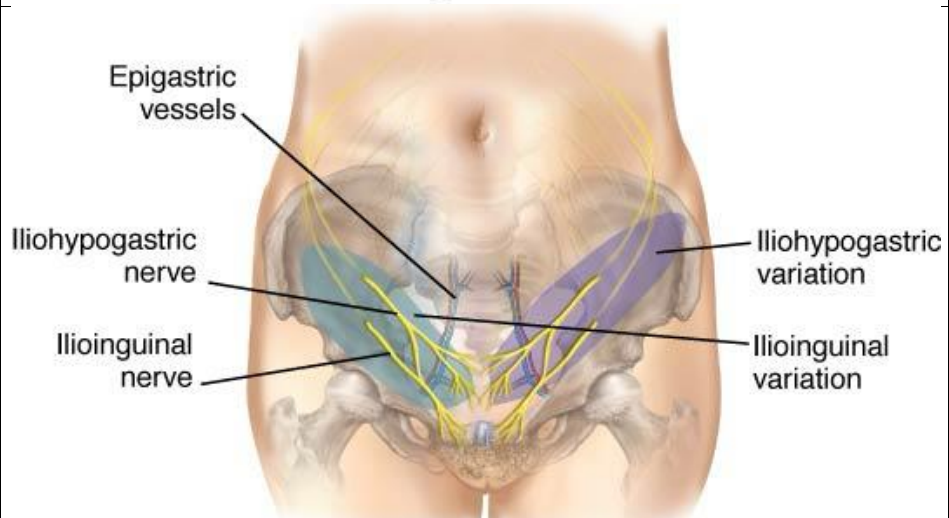
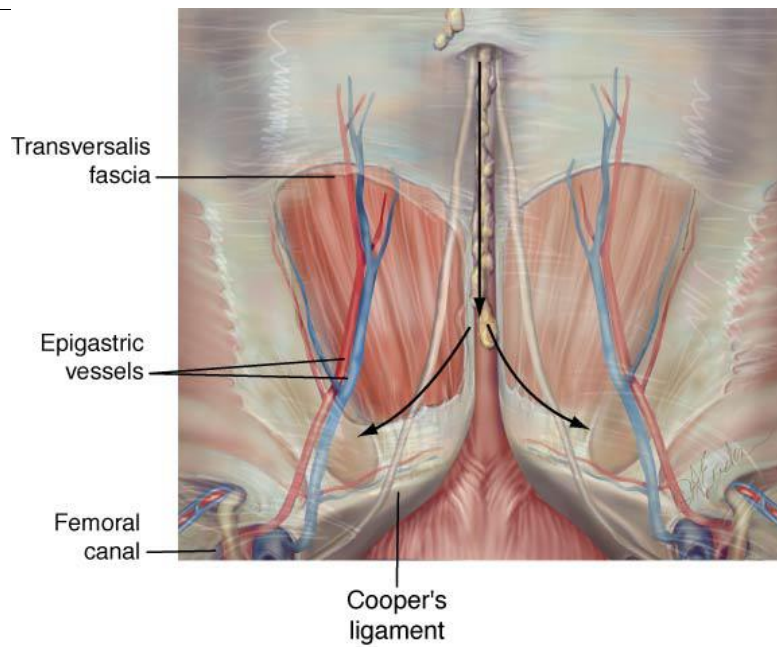


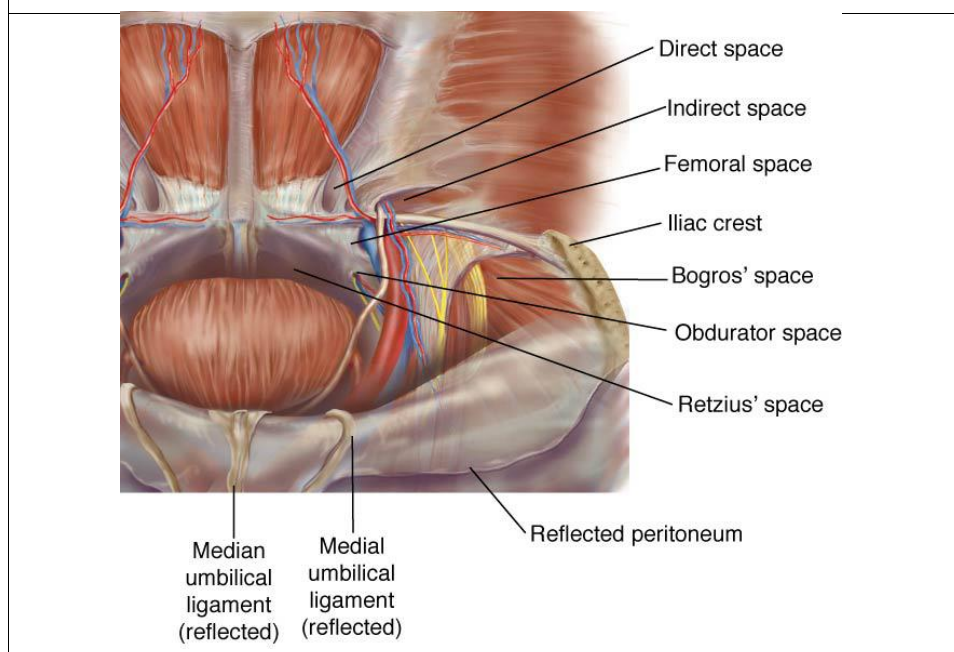
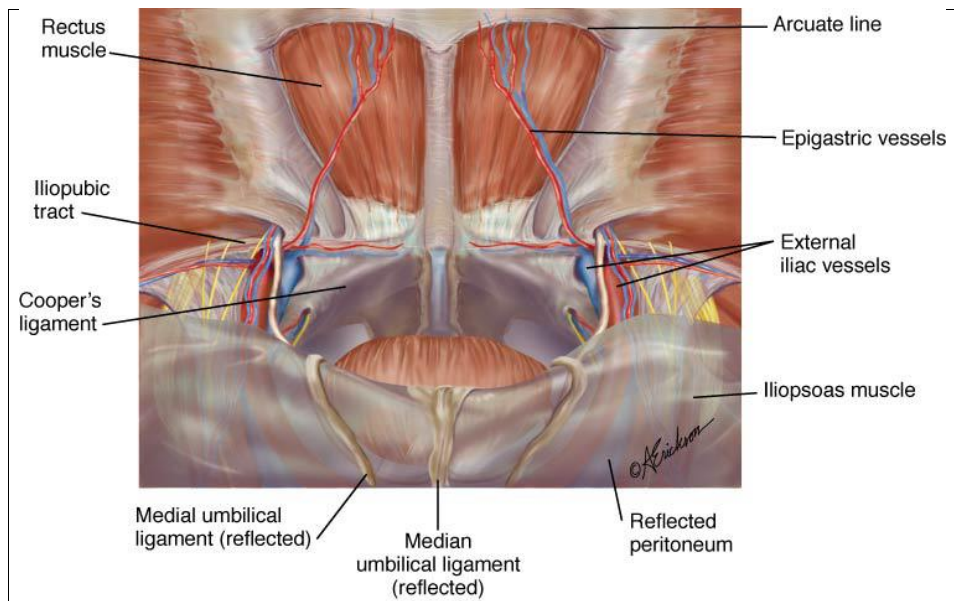
Hernia

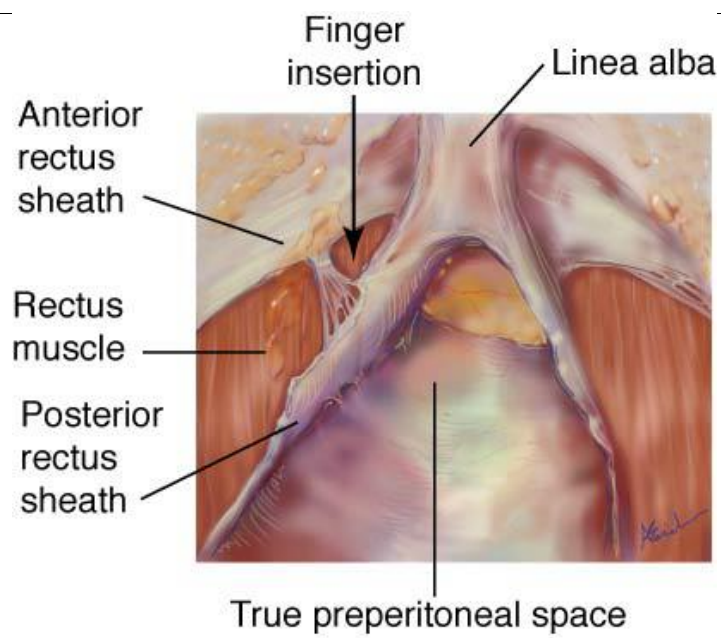
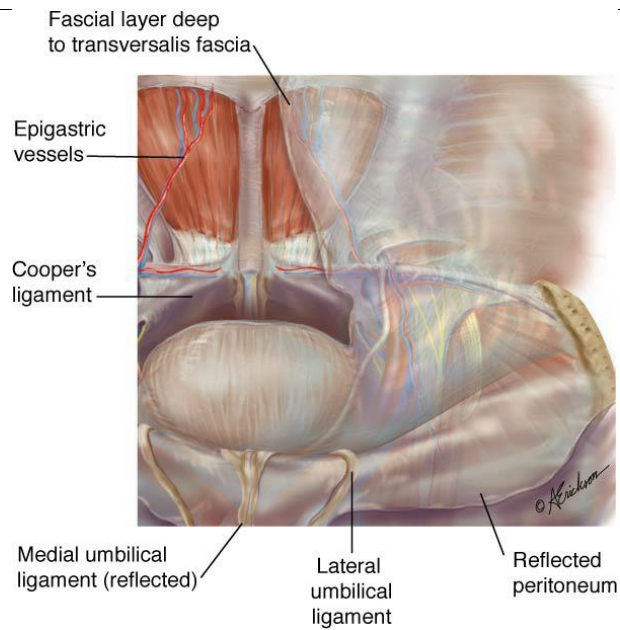


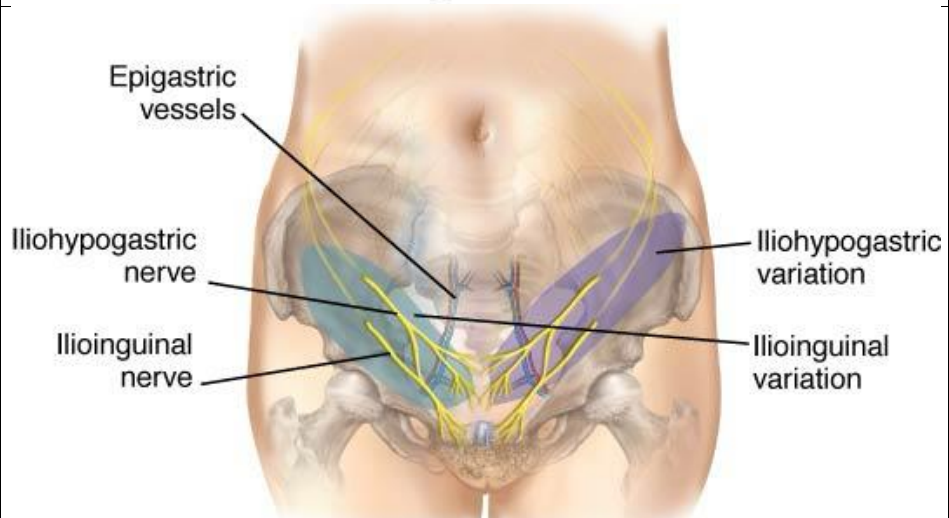
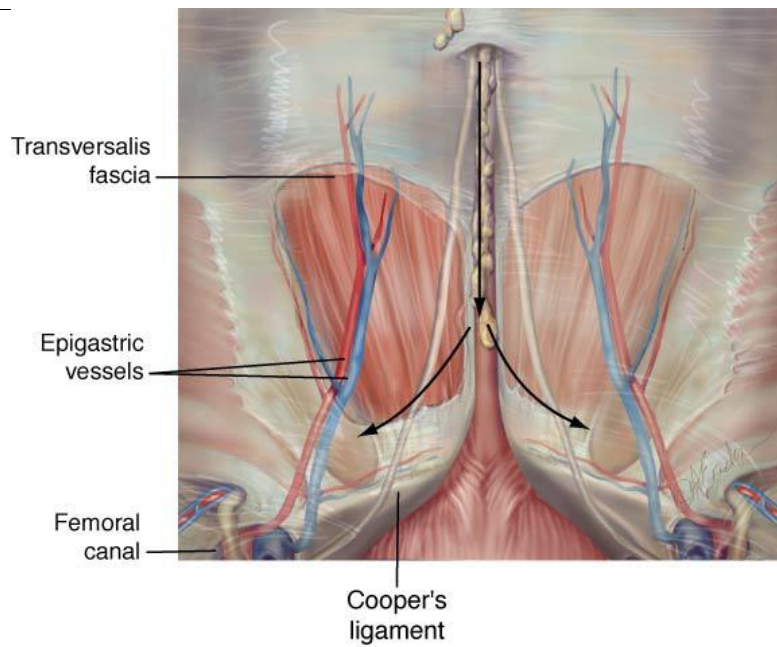


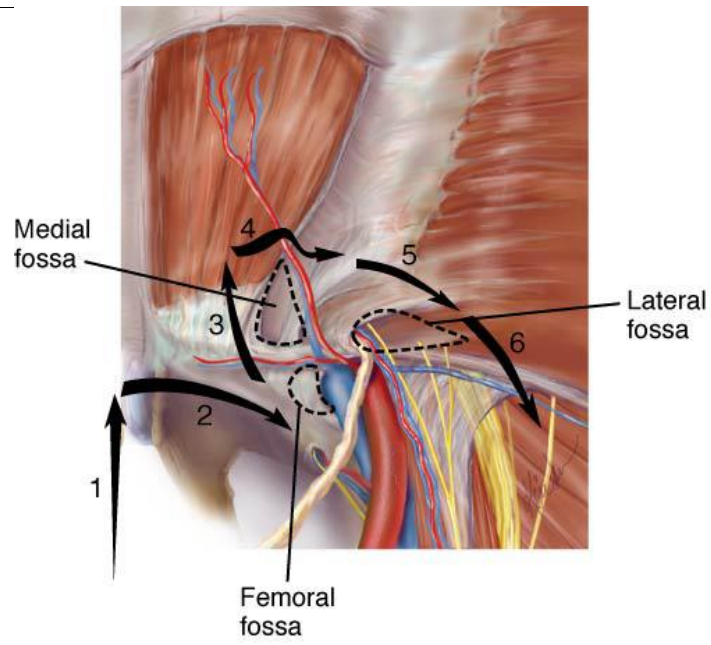


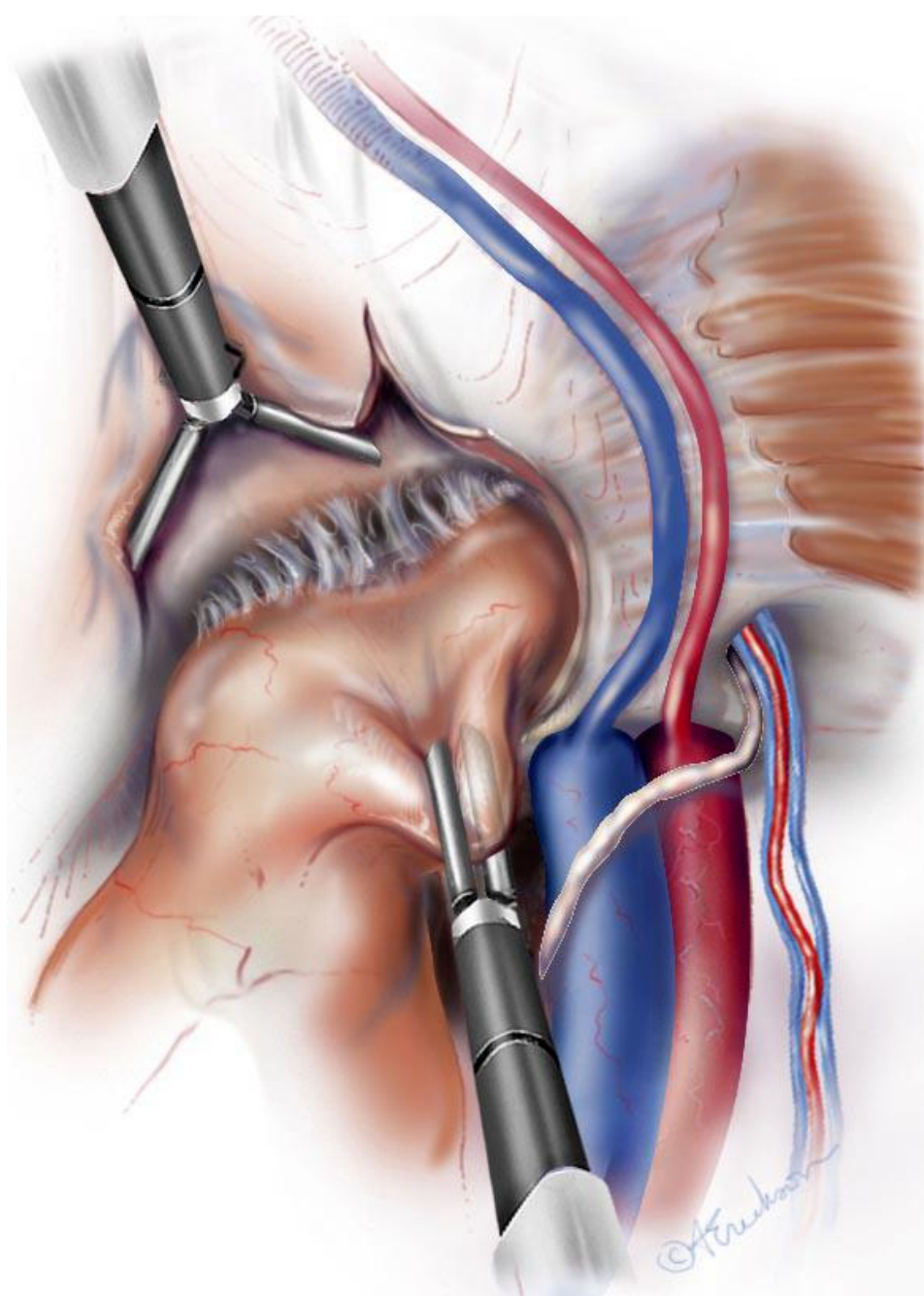


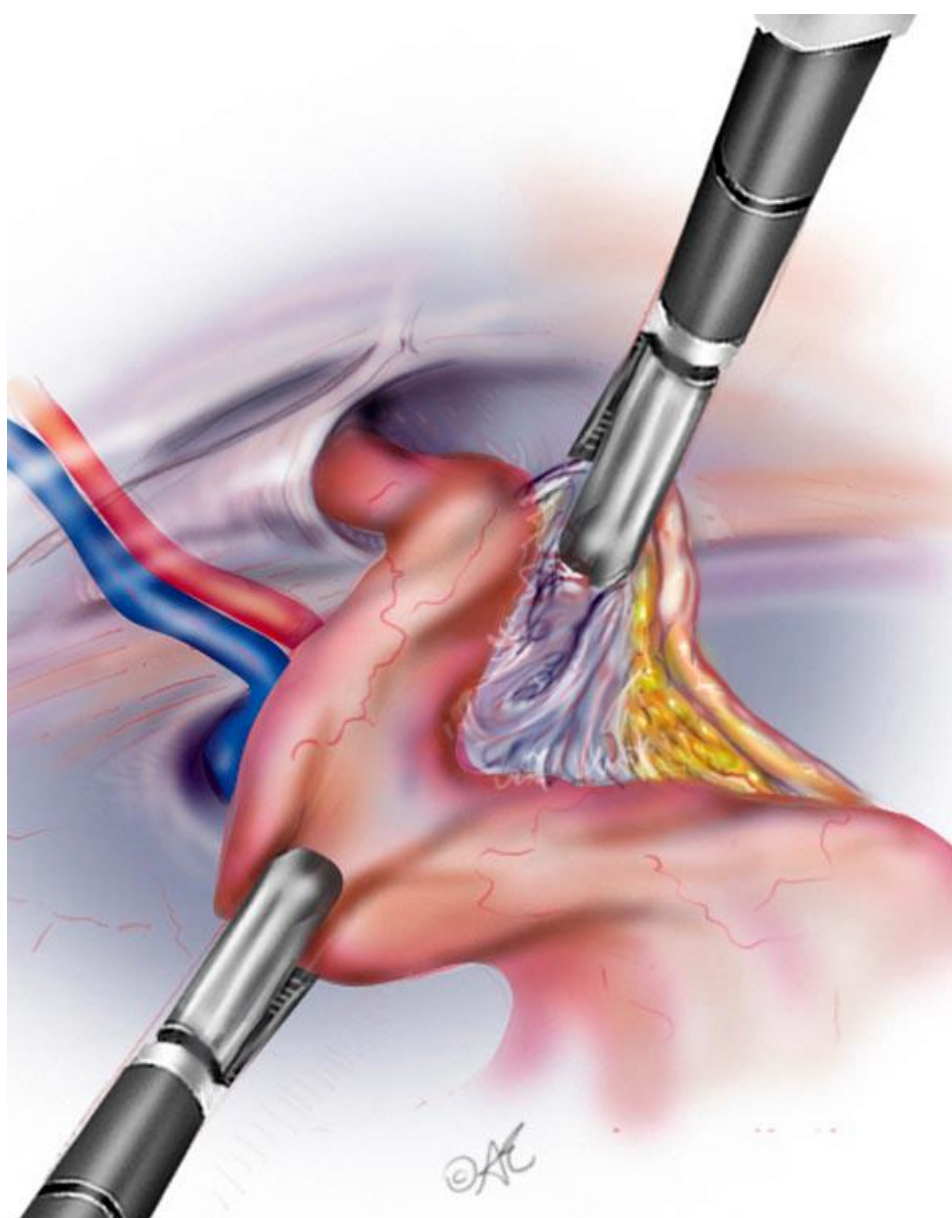


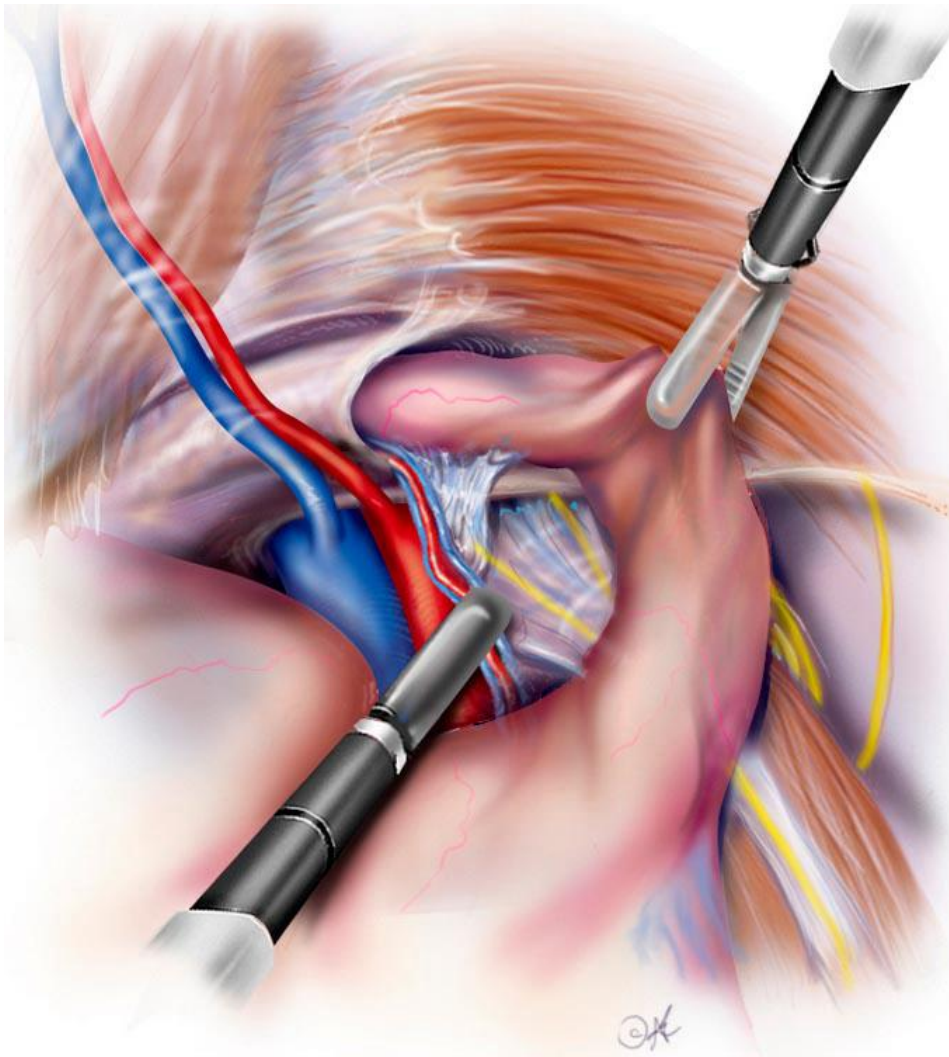


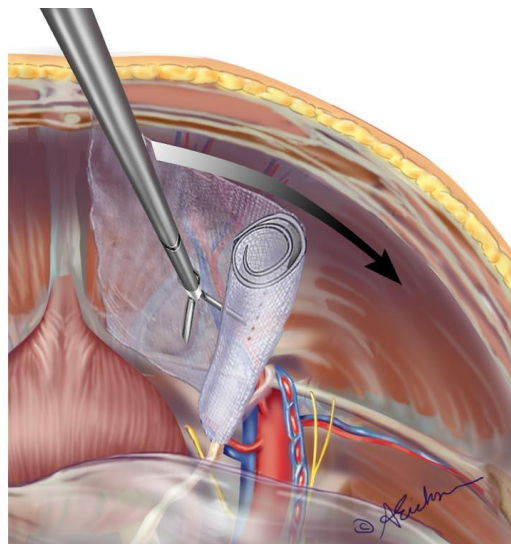
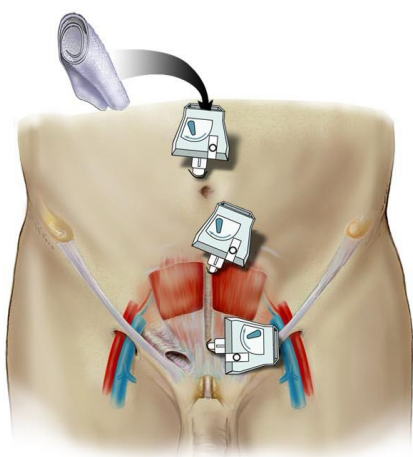


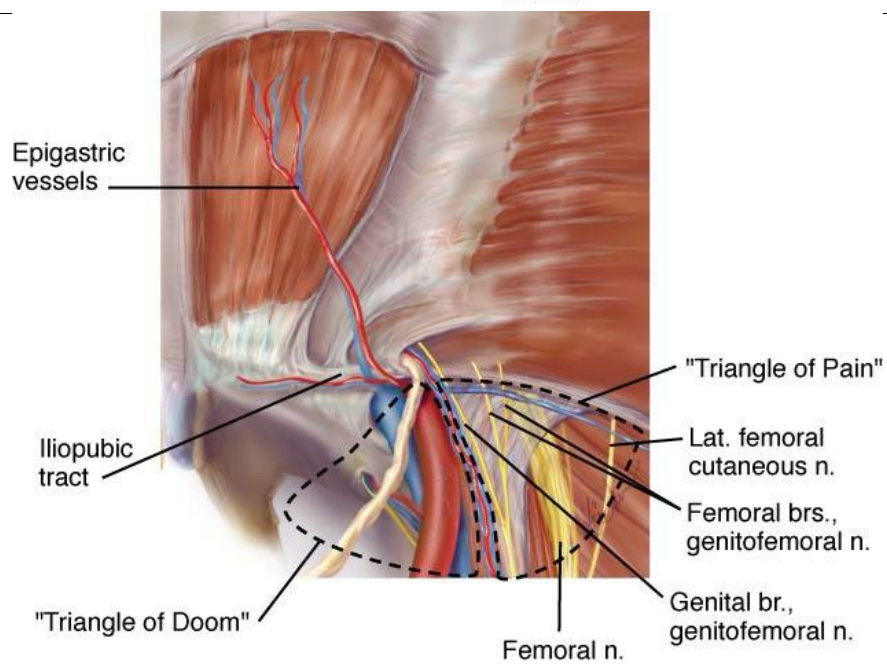
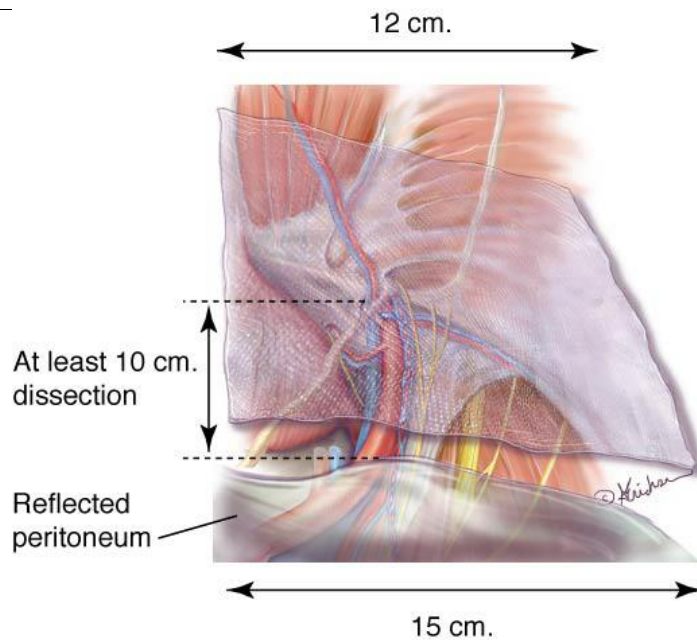


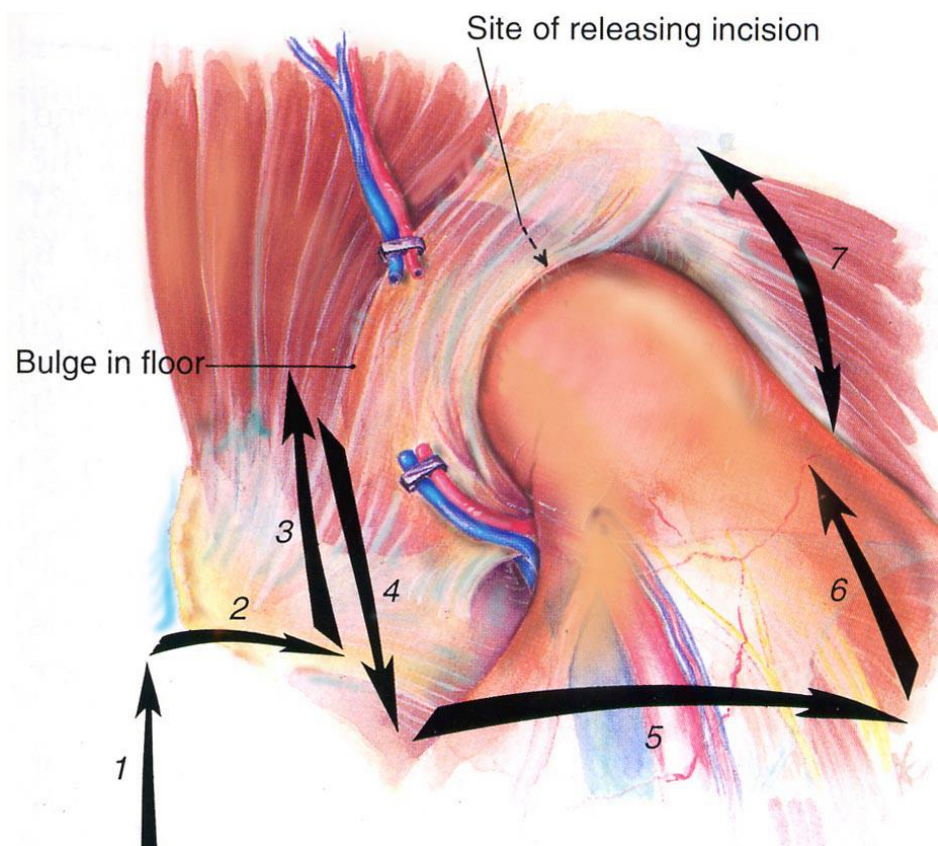




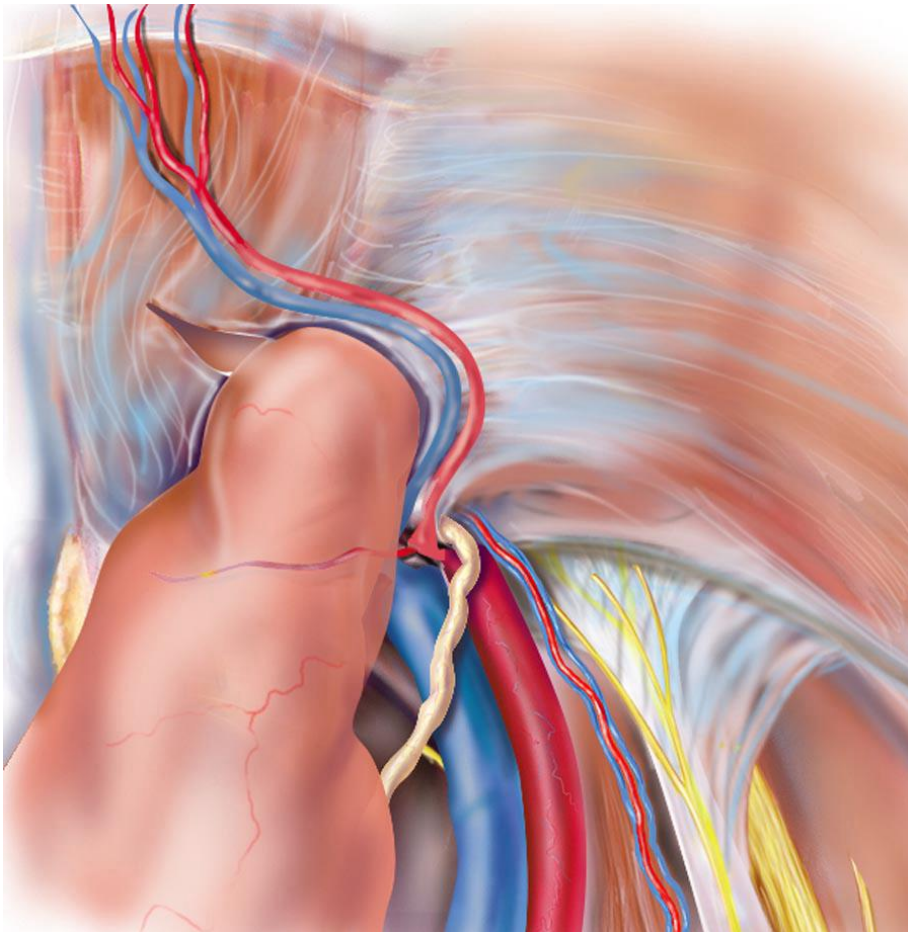


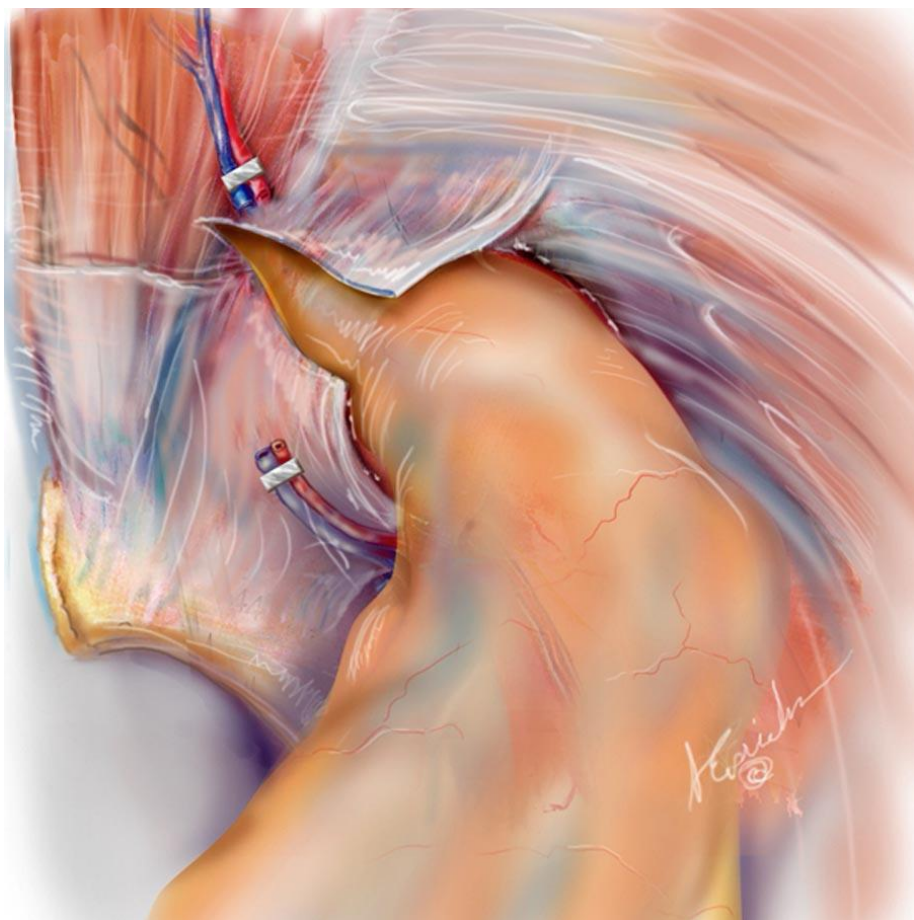


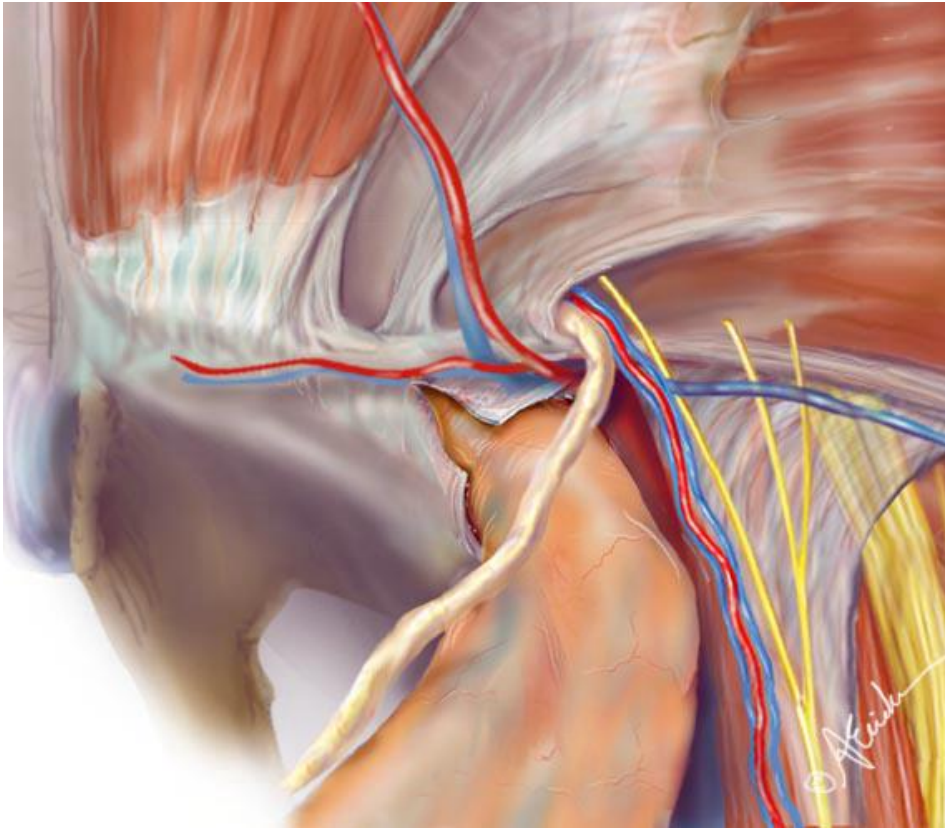


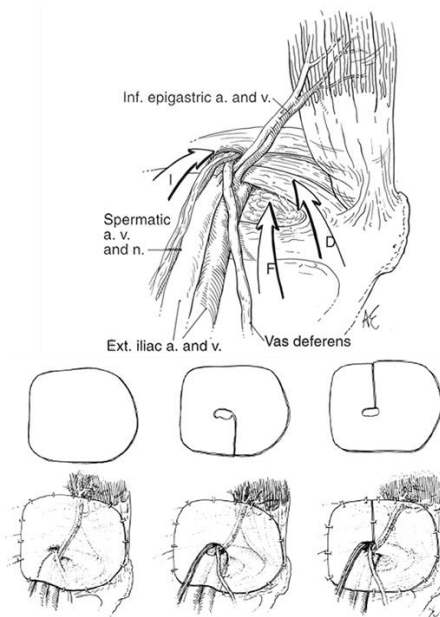
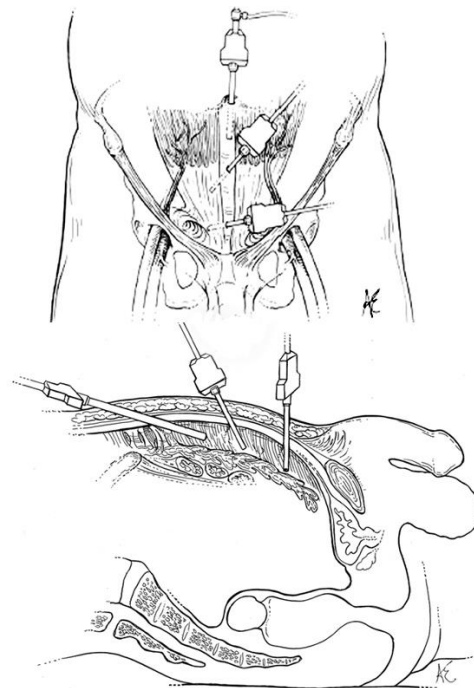


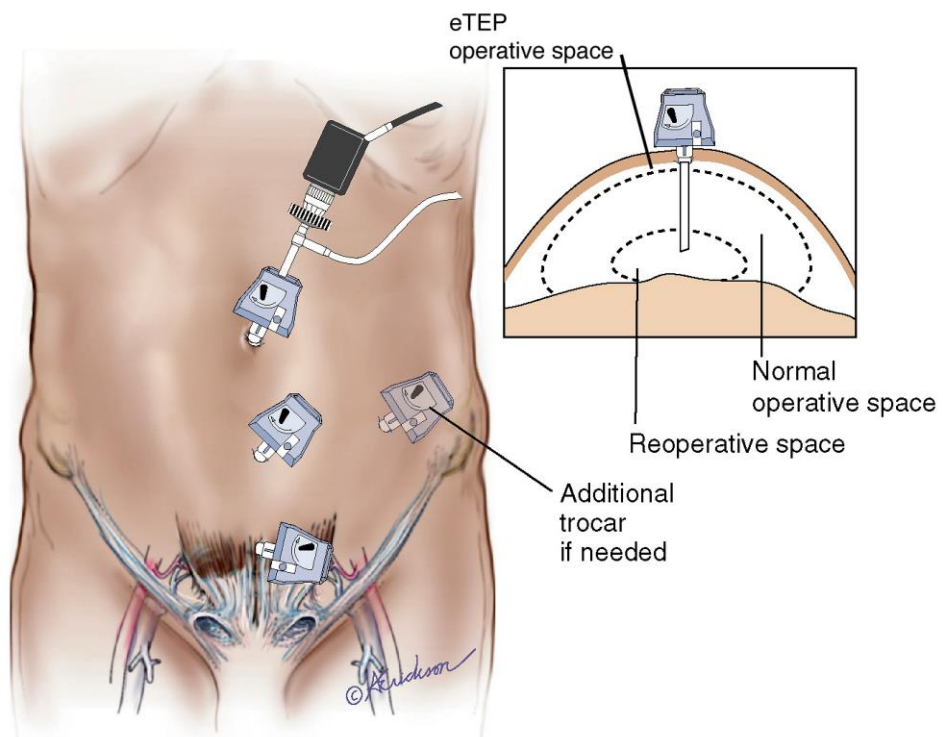


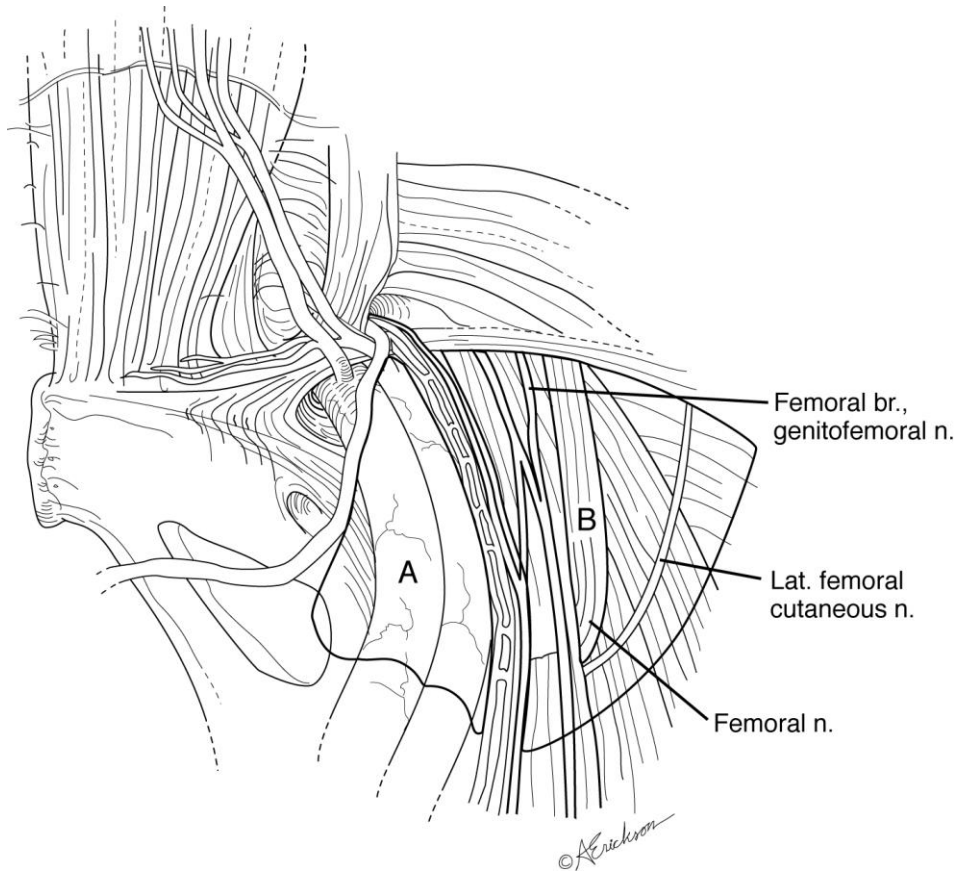


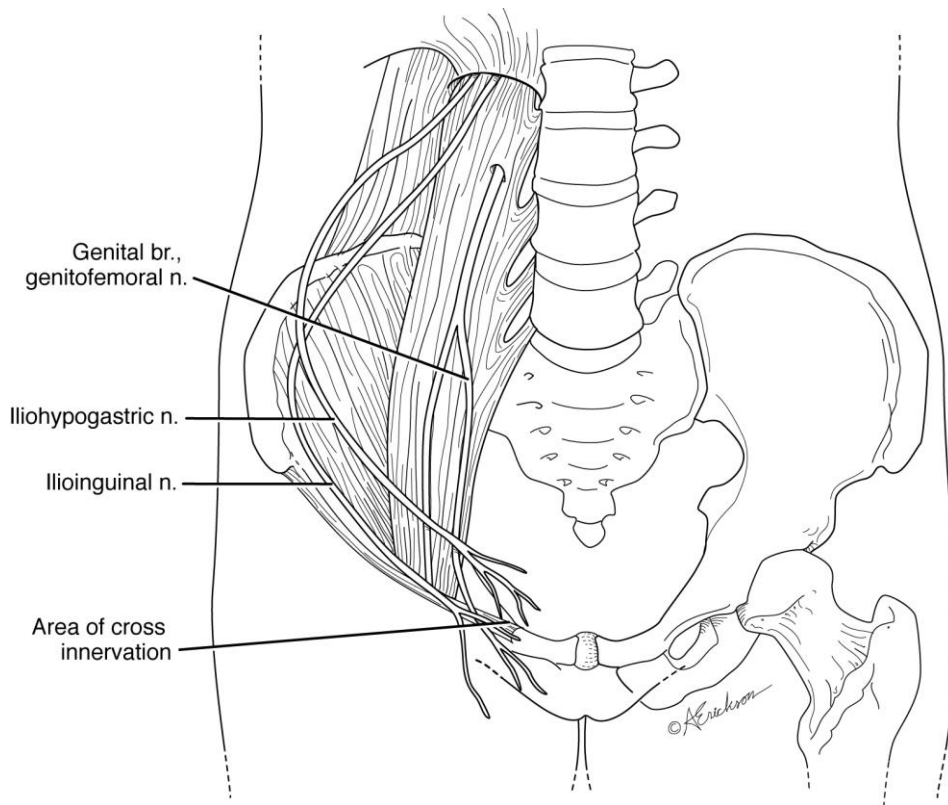


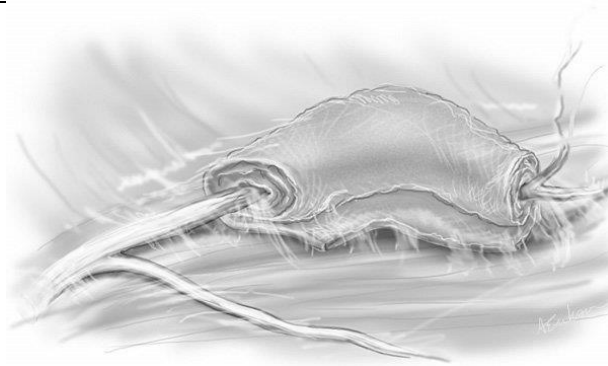
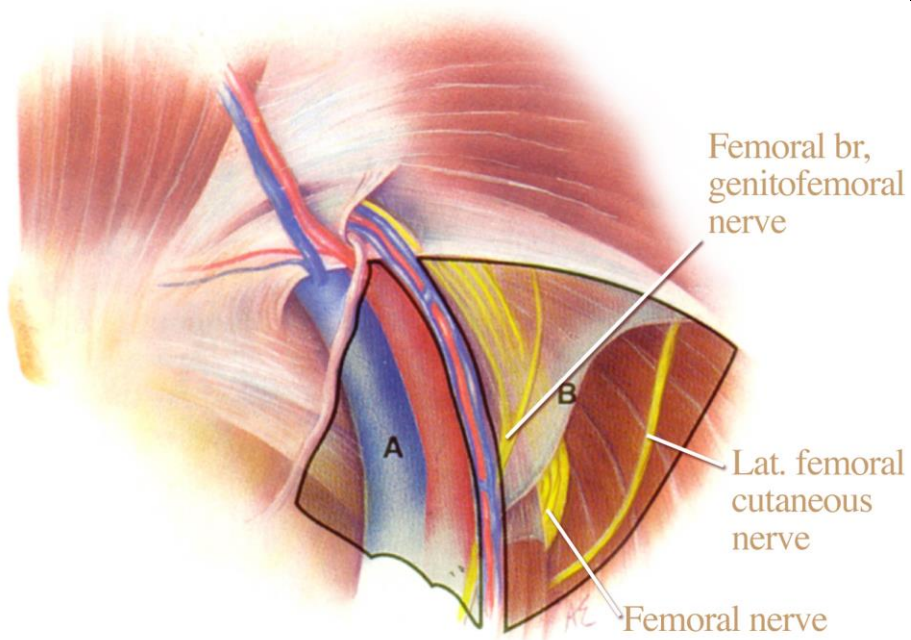




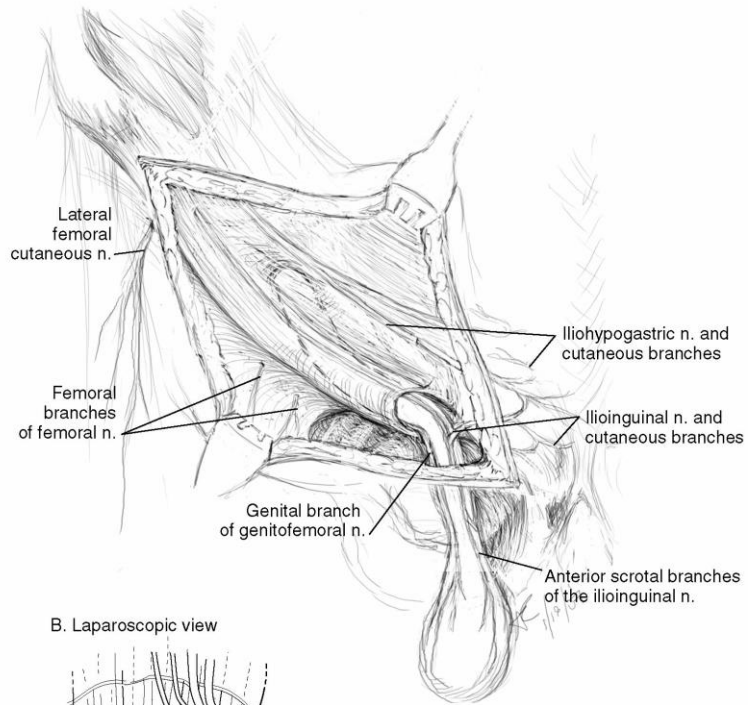








A. Open view



B. Laparoscopic view

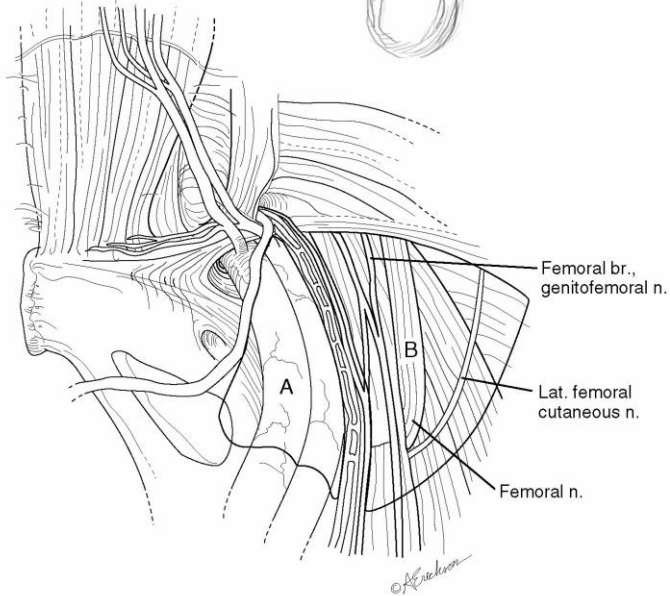
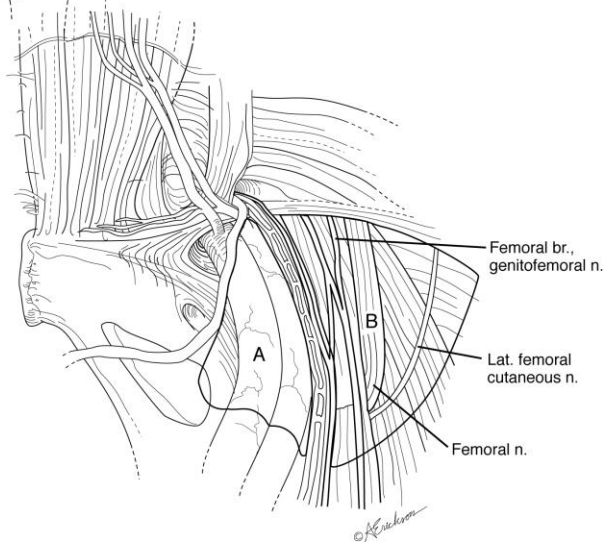
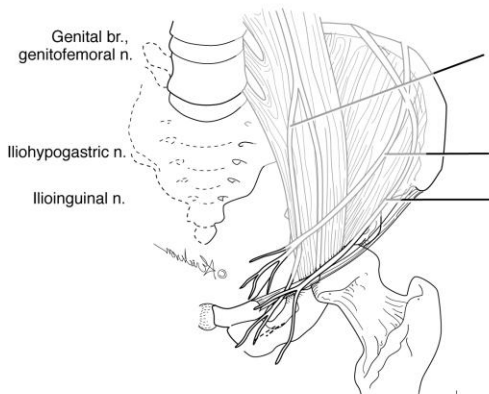
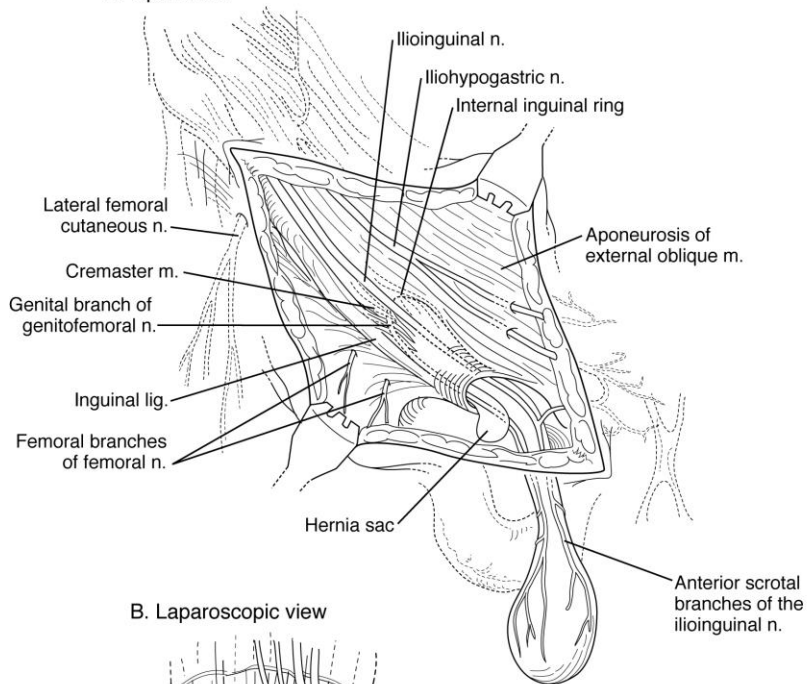


Figure 1. Look and identify the nerves – avoid the so-called minimal dissection for completing the operation faster

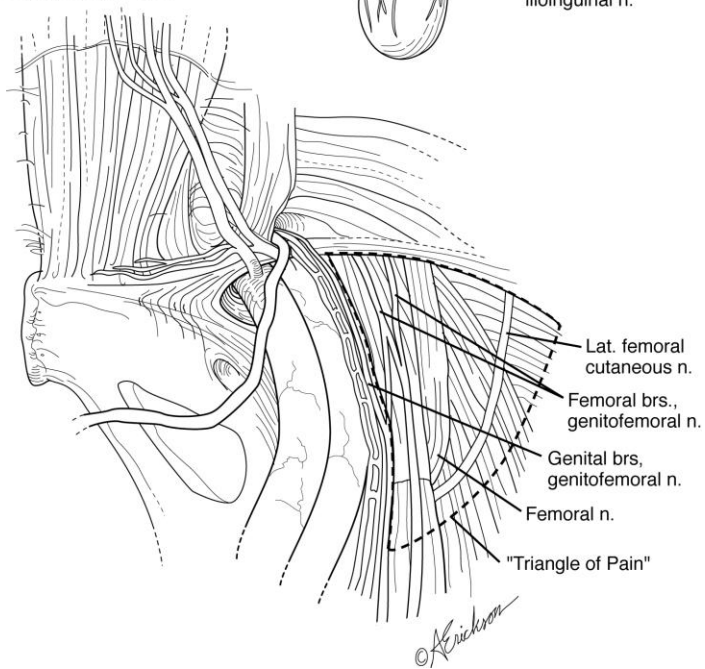
A.

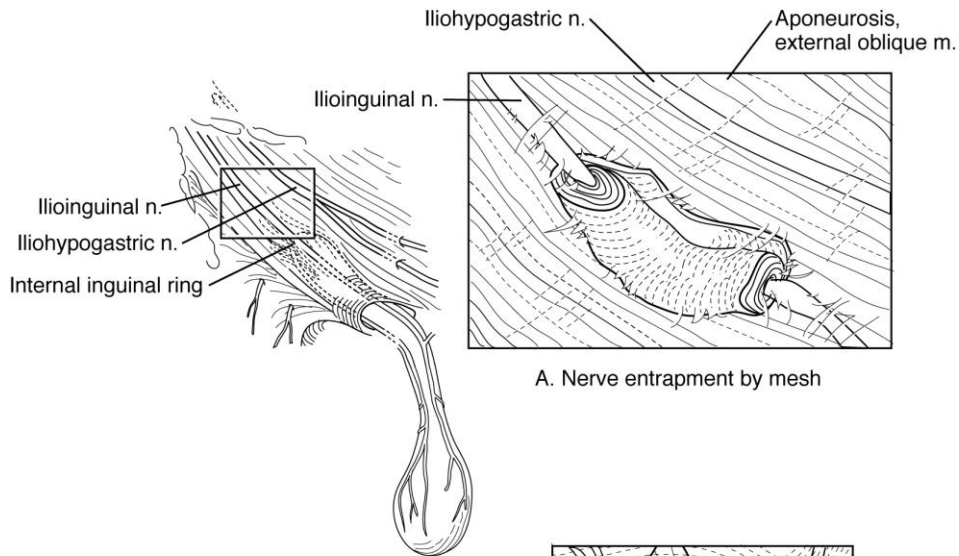


A. Open view

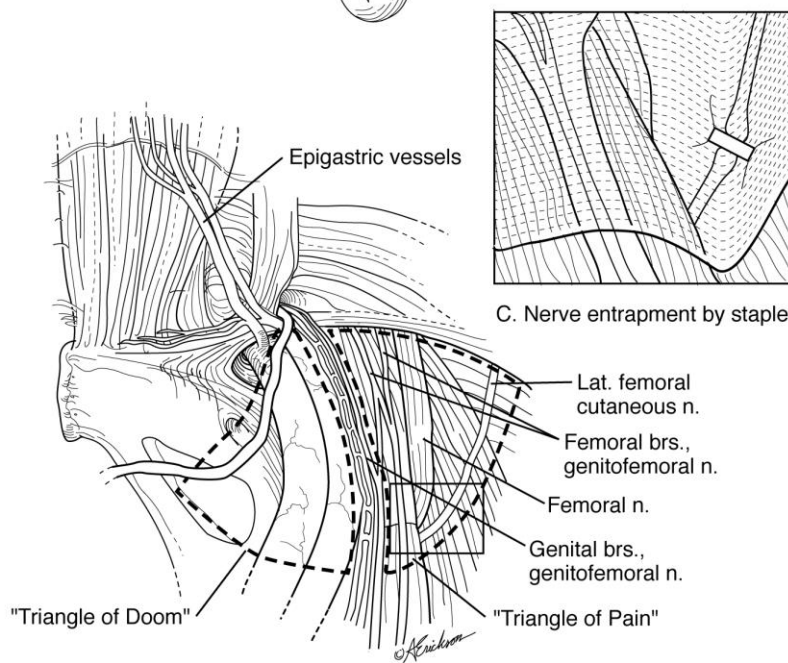


B. Laparoscopic view

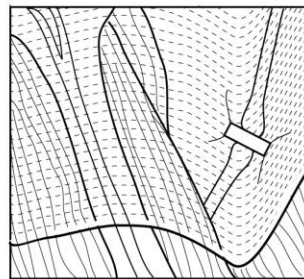




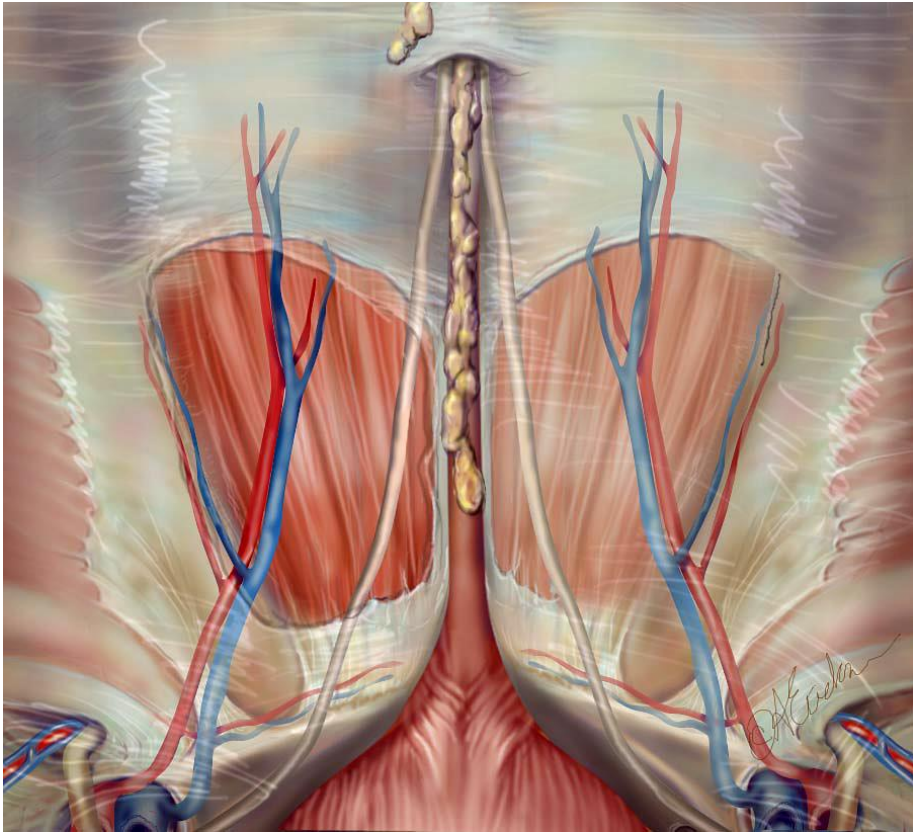
A. Nerve entrapment by mesh

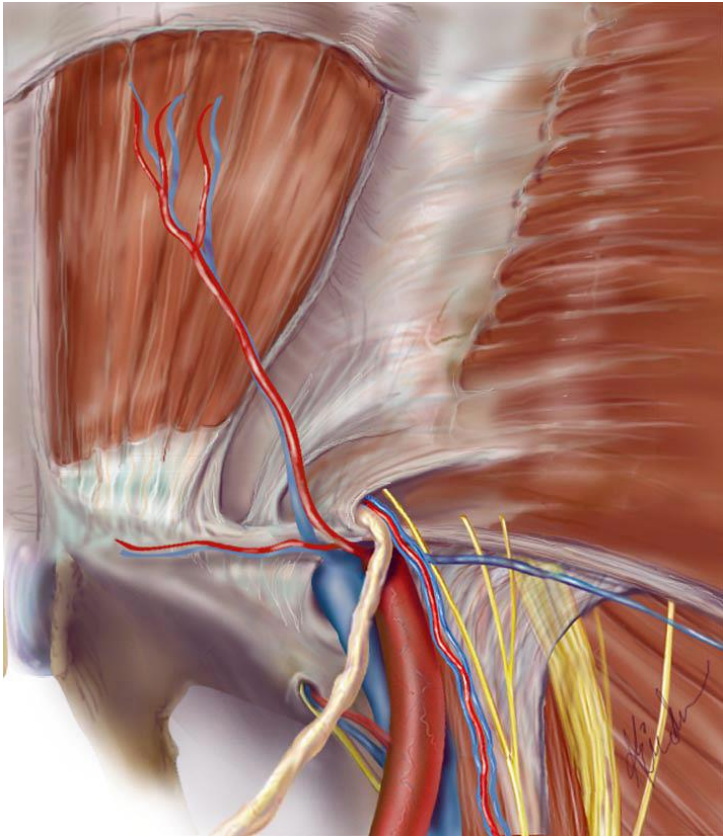


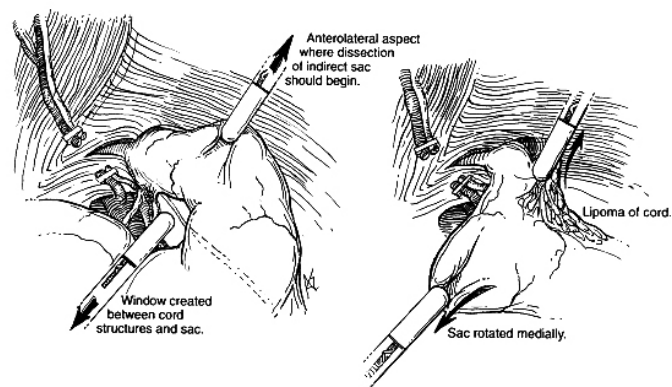
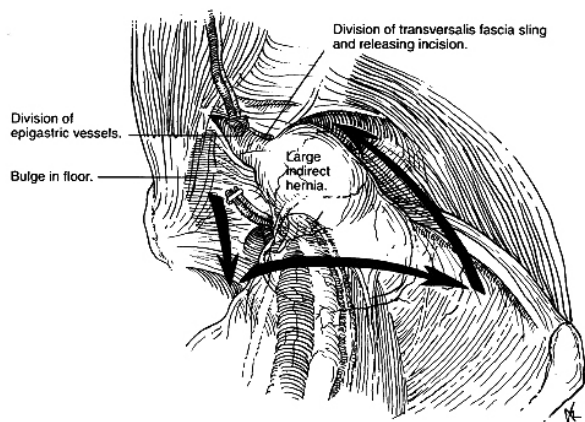
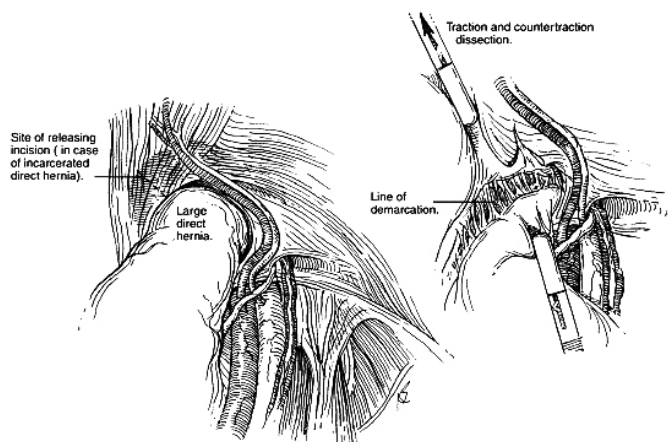
B. Areas to avoid stapling include the "Triangle of Doom" and the "Triangle of Pain".

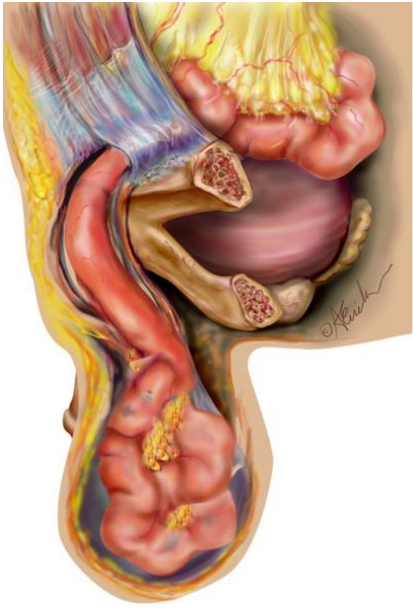


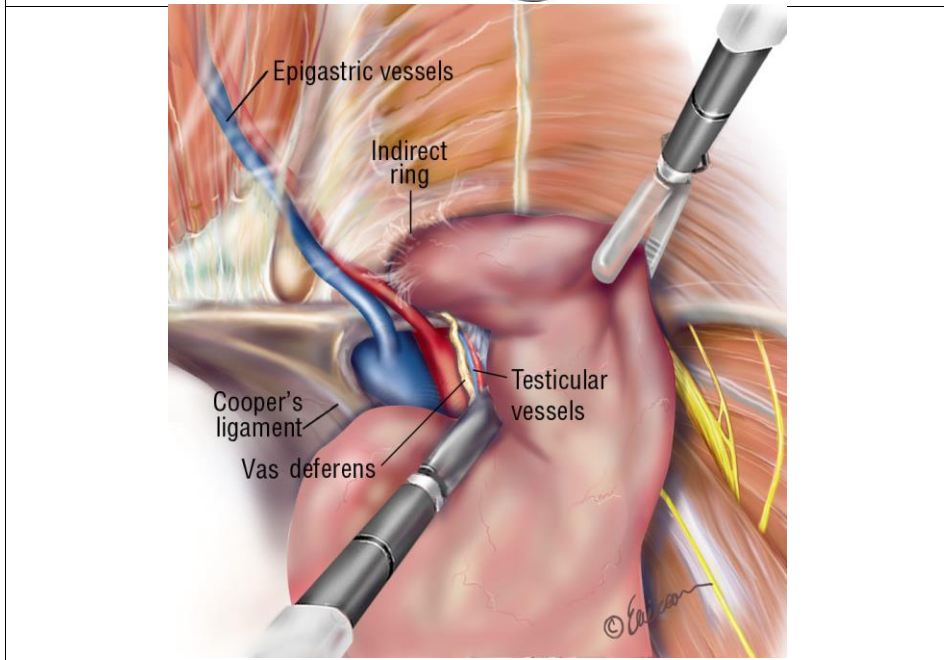
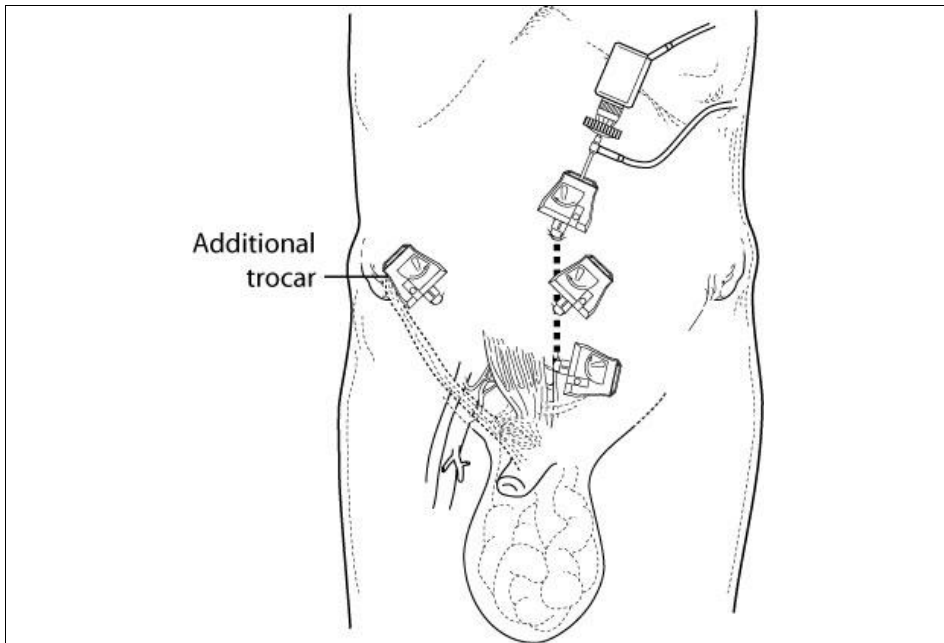
C. Nerve entrapment by staple

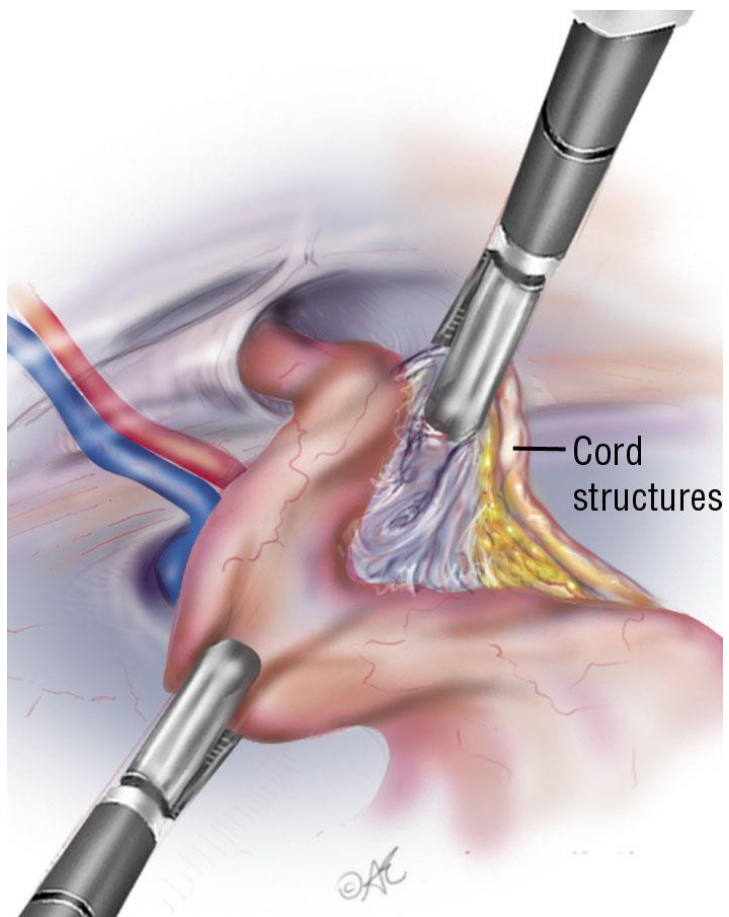


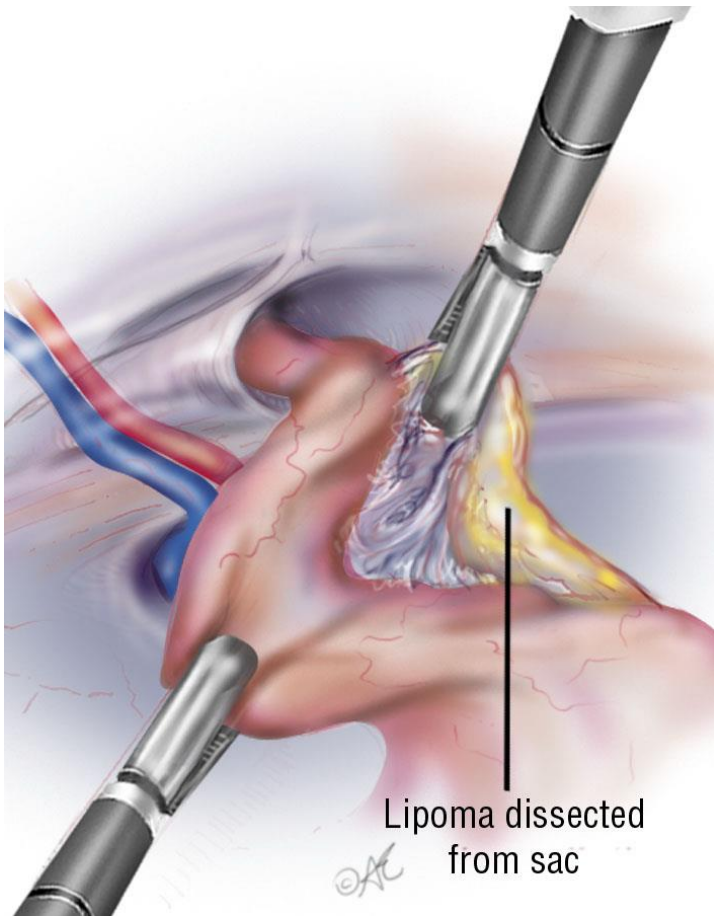




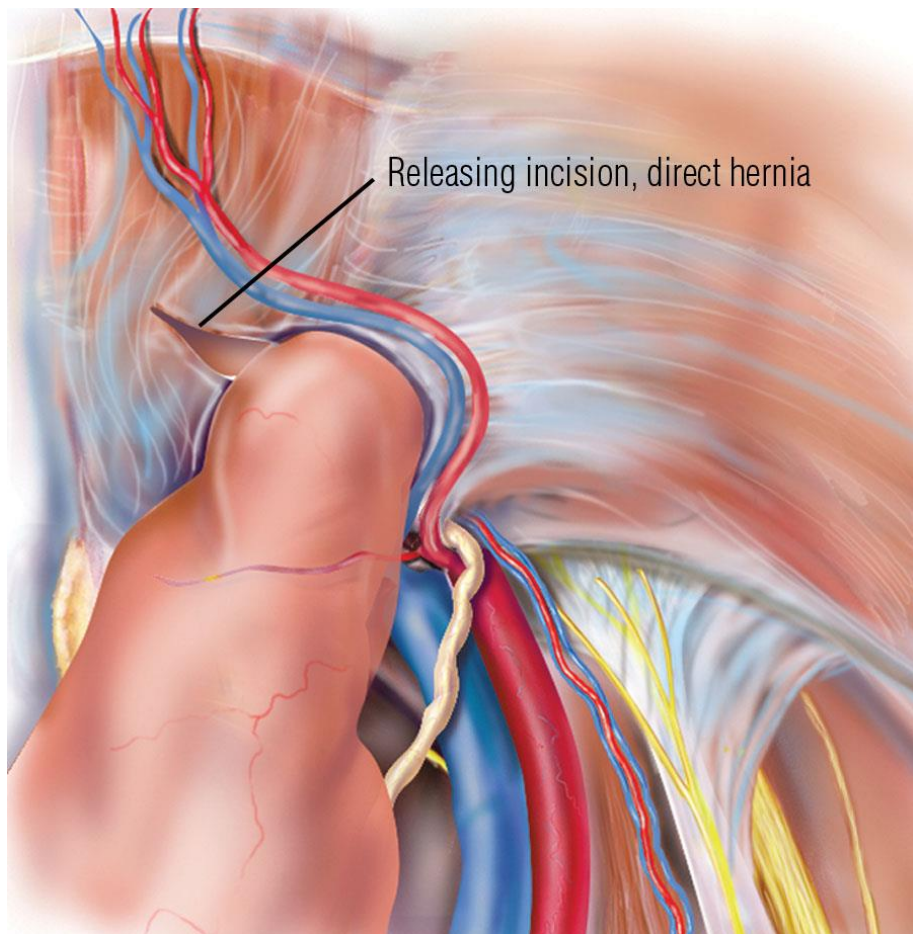


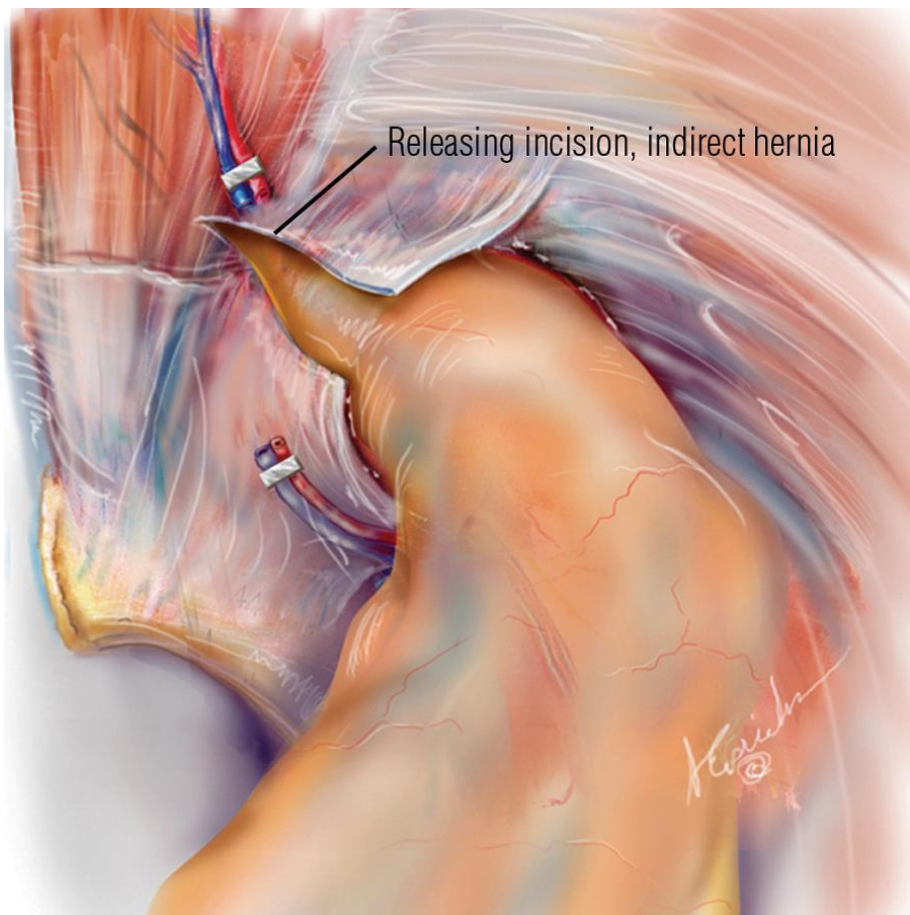


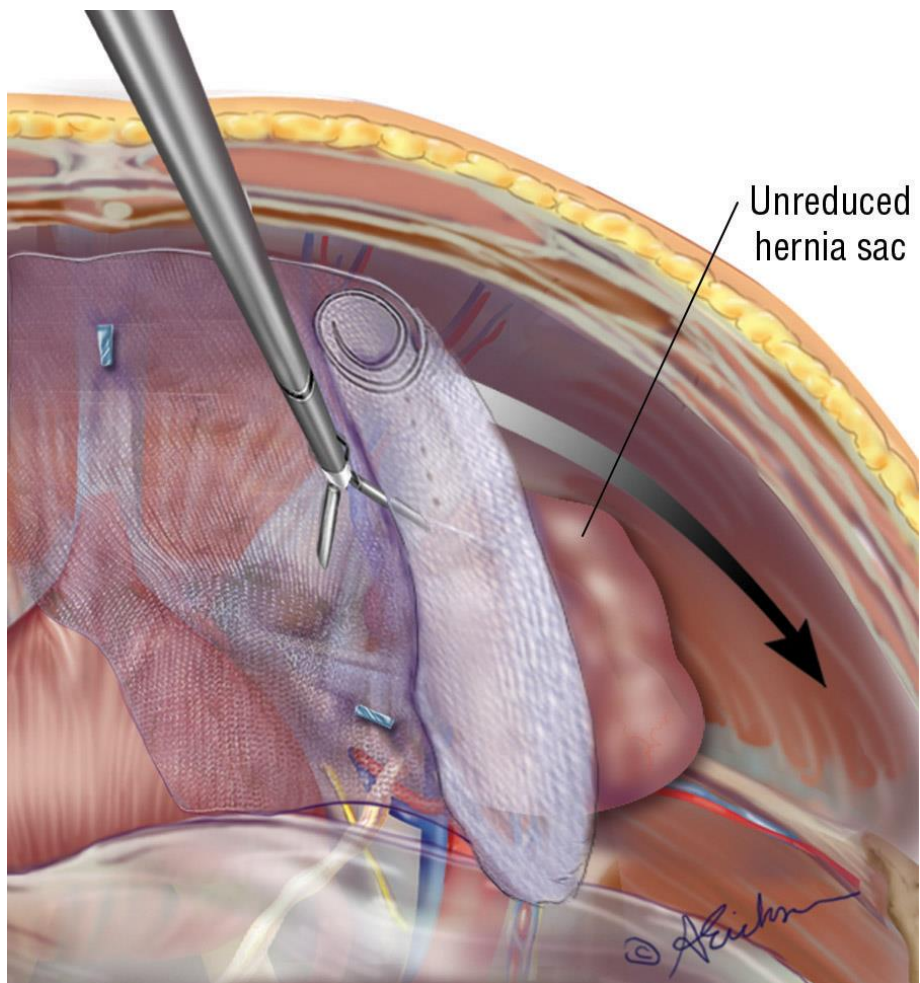


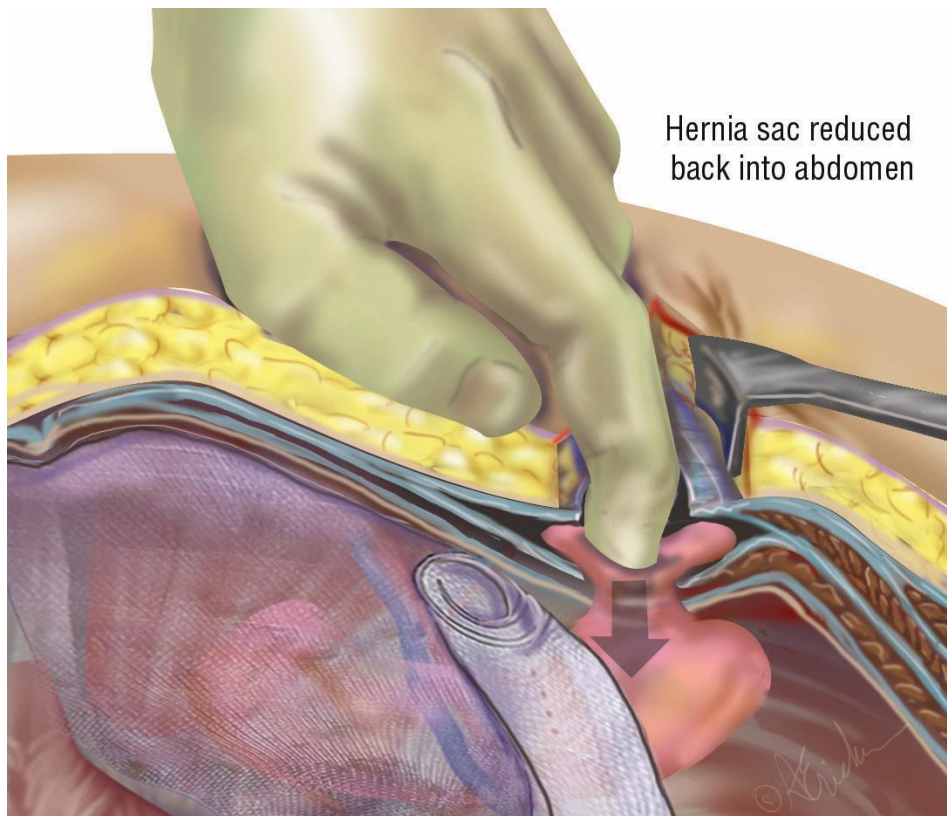


Lipoma dissected
from sac

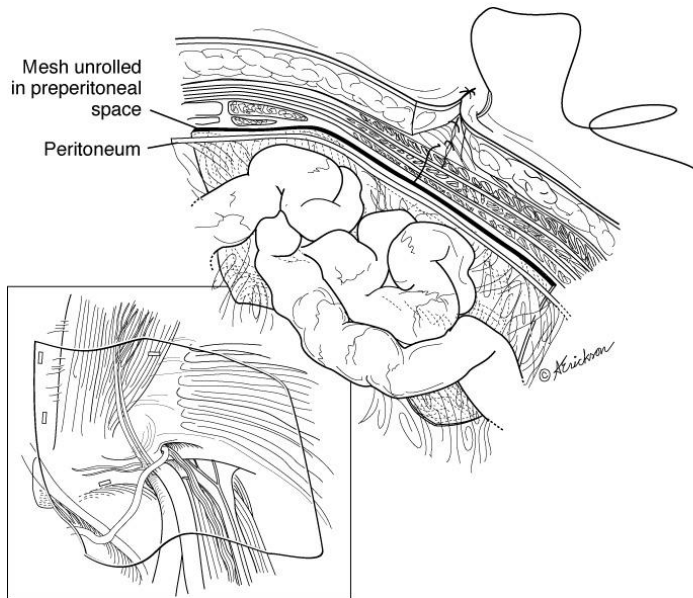
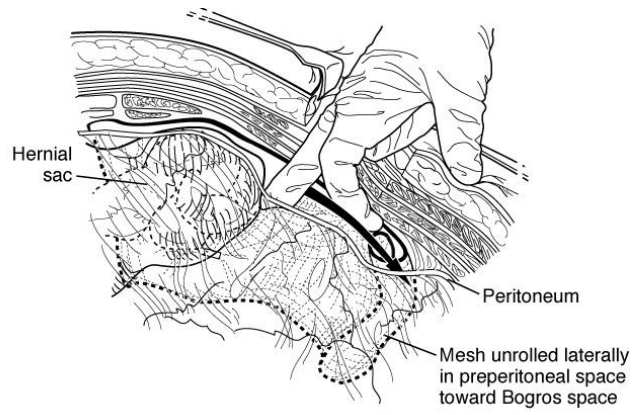




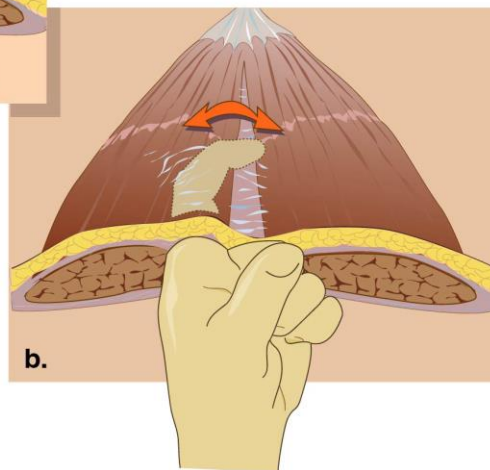
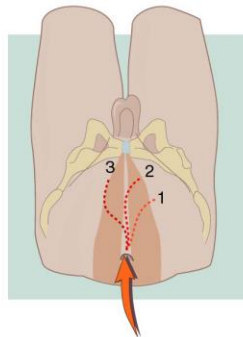
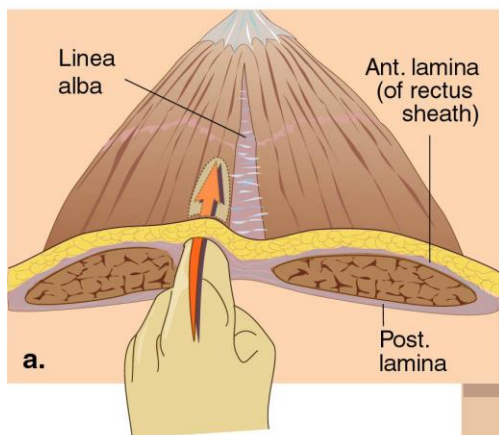


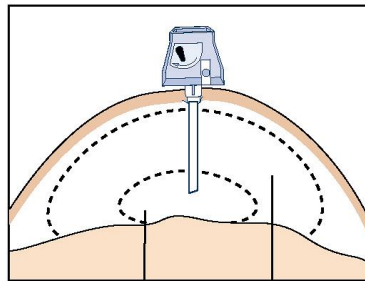
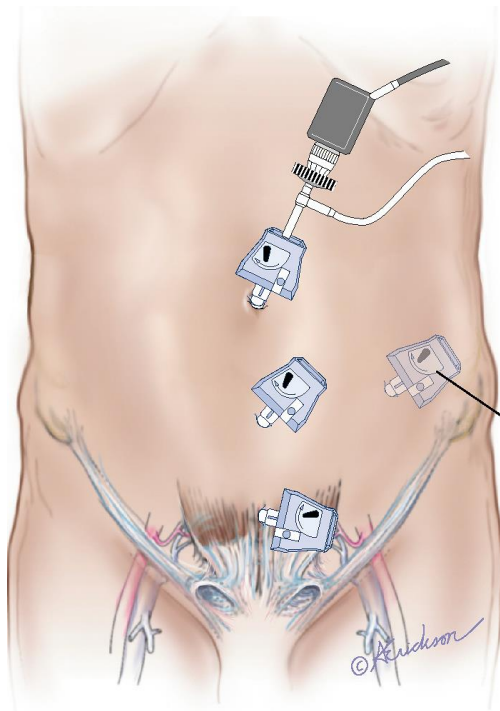


Hernia sac reduced
back into abdomen



Finger dissection of pre-peritoneal space

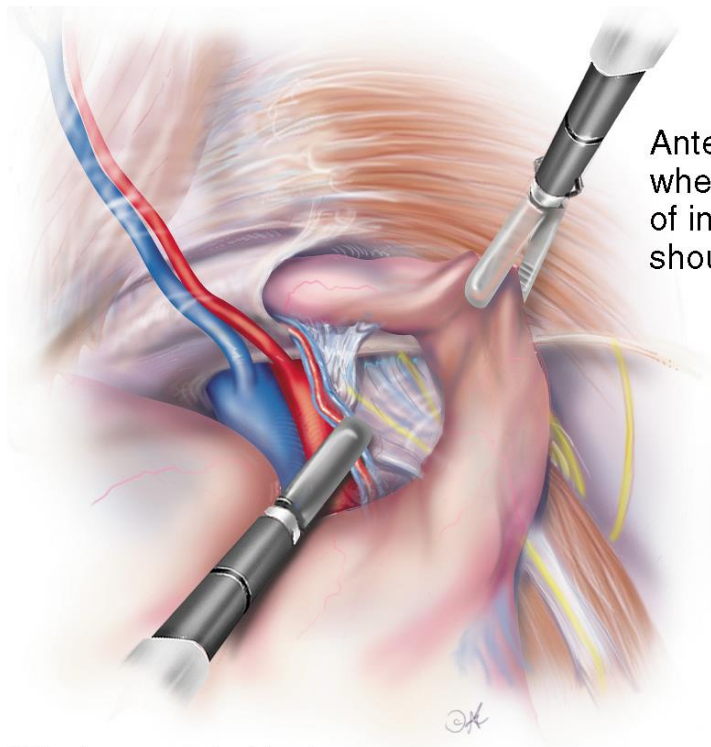




Normal
operative space

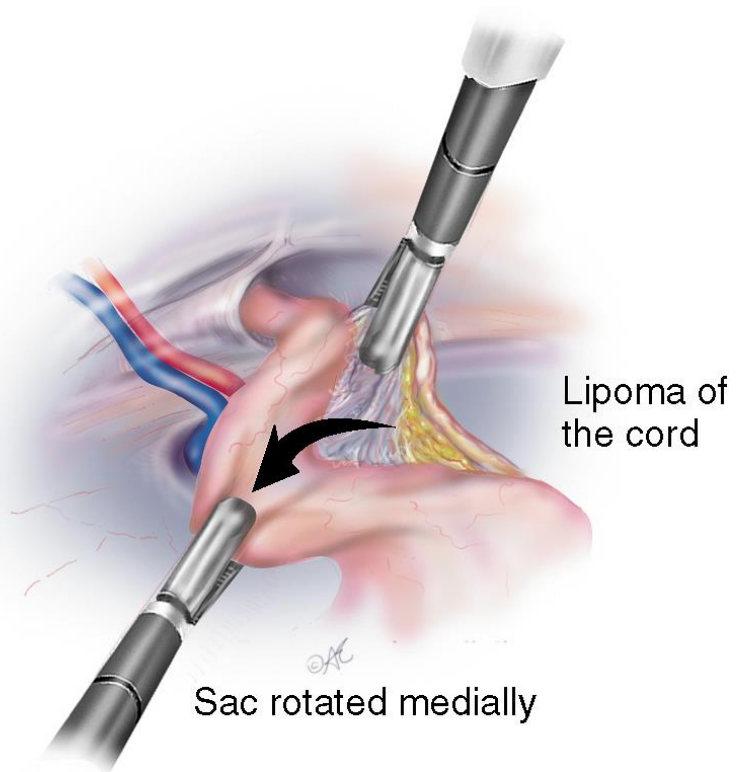
Reoperative space

Additional
trocar
if needed

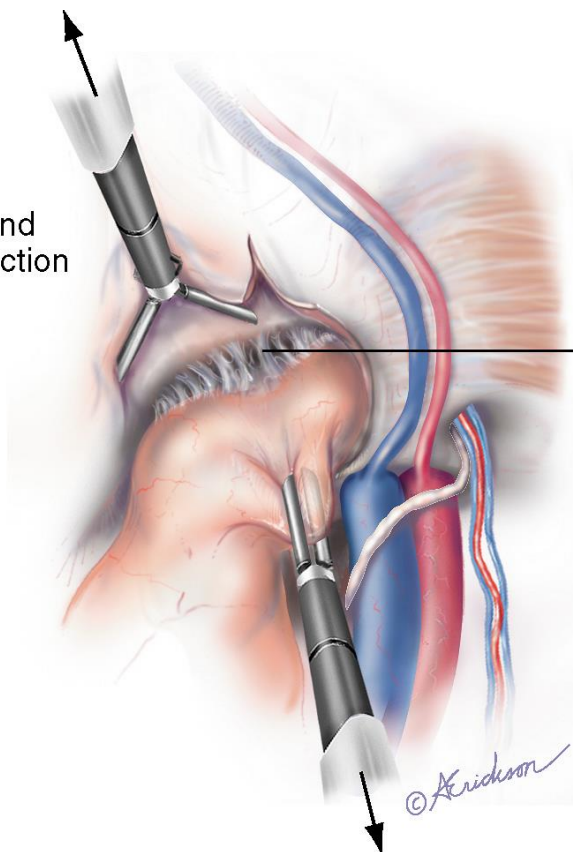


Anterolateral aspect
where dissection
of indirect sac
should begin

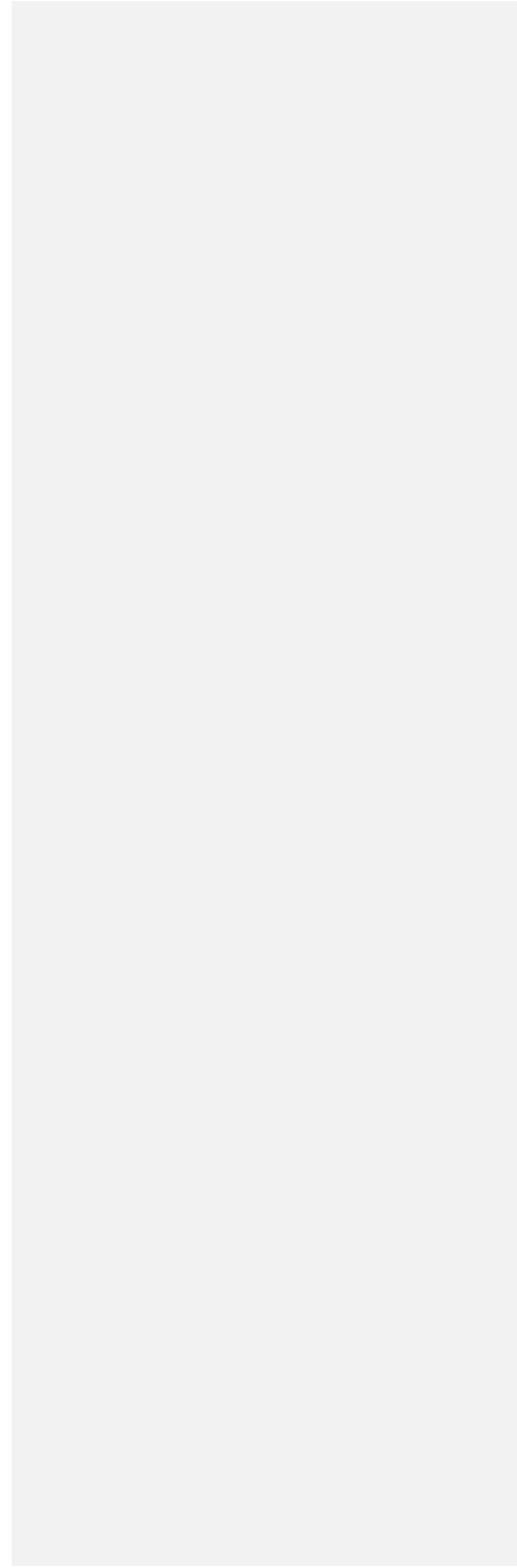
Window created between
cord structures and sac

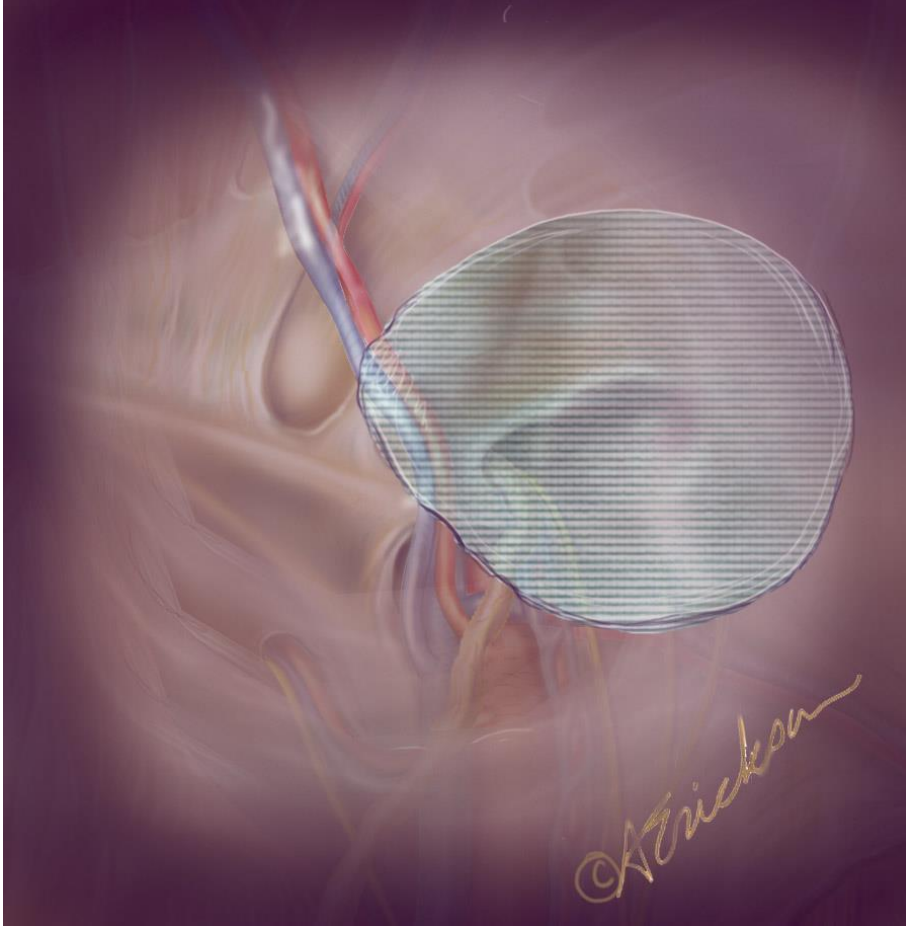


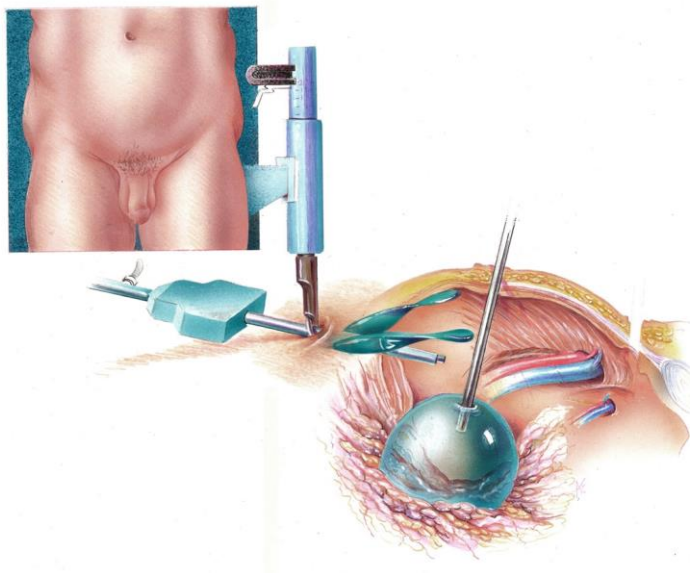
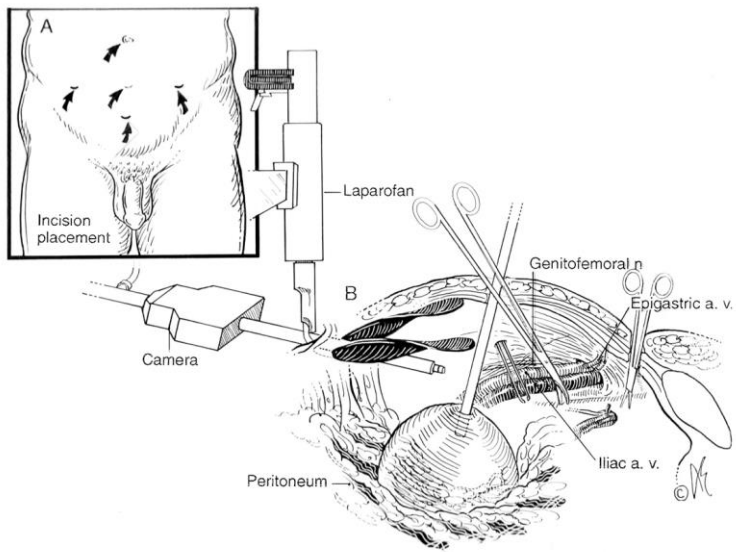
Traction and
countertraction
dissection

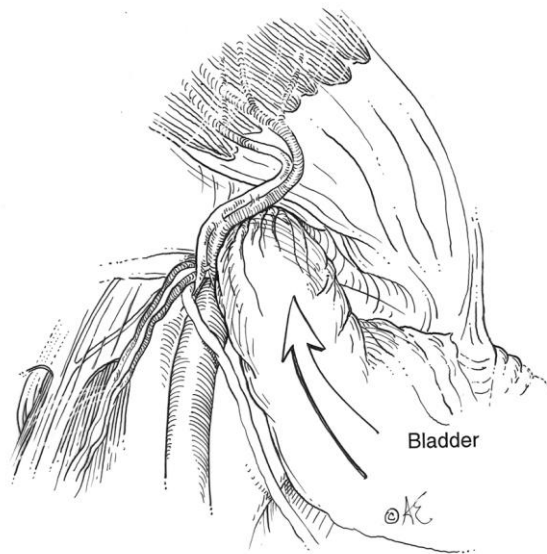
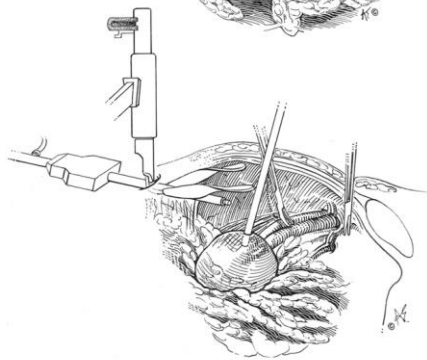
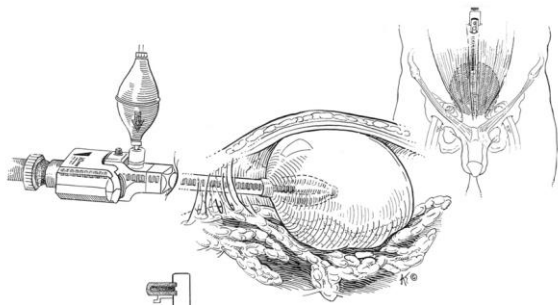


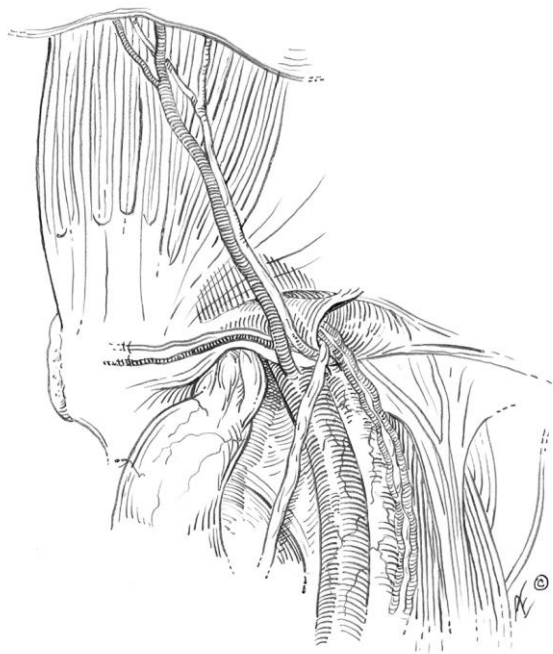
Line of
demarcation

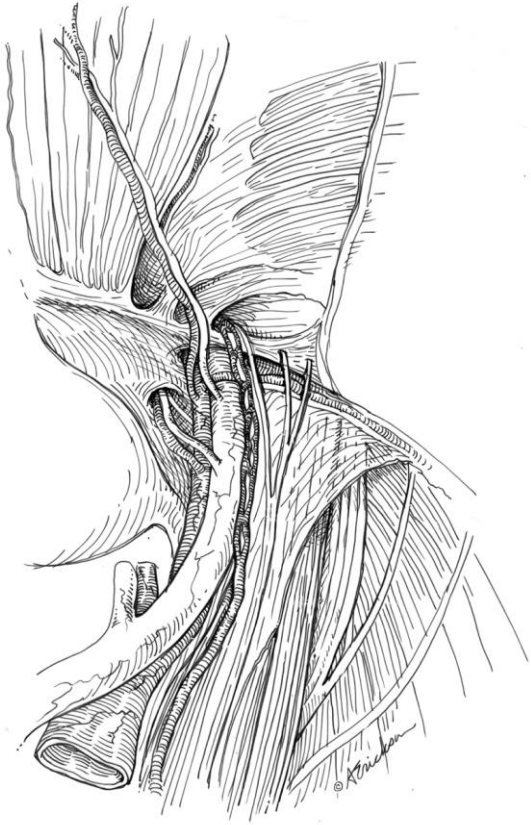


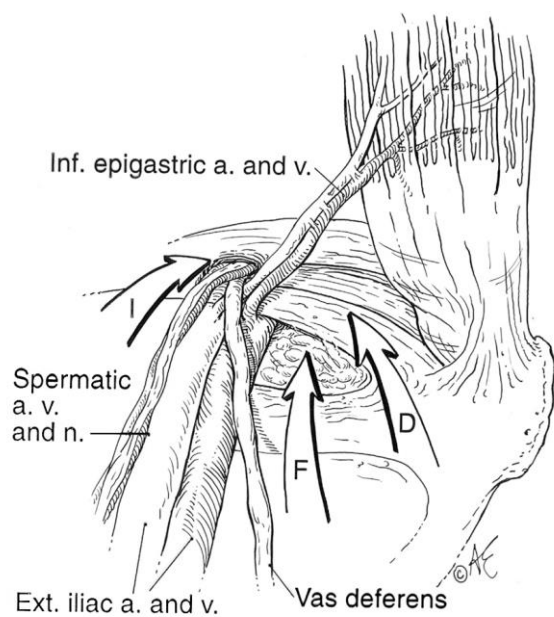


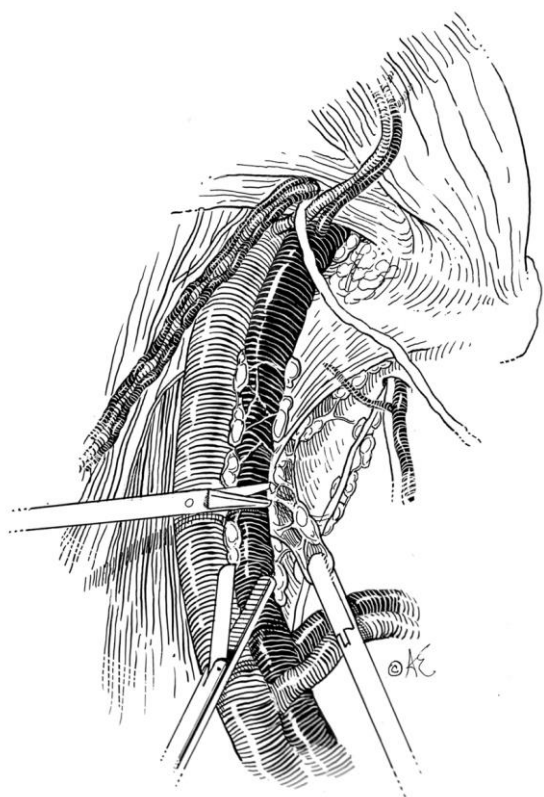


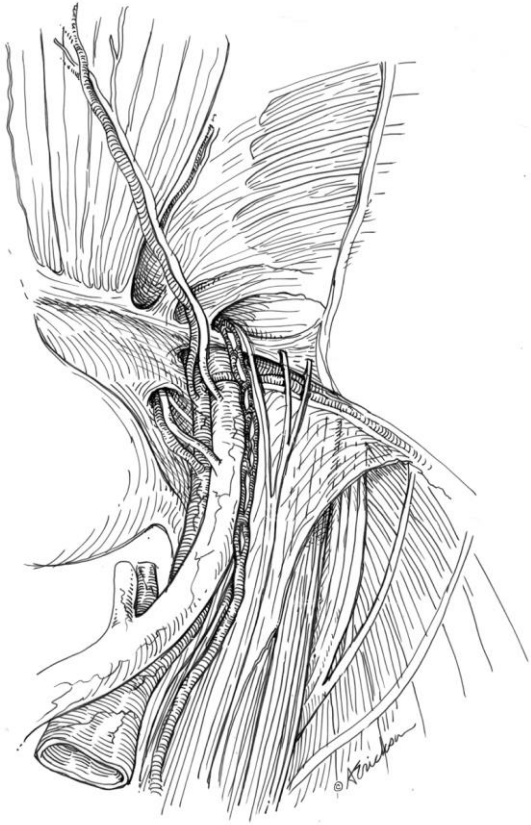


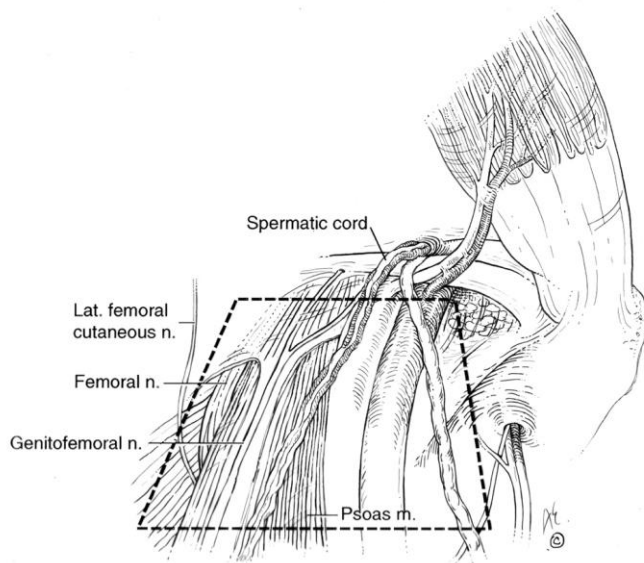


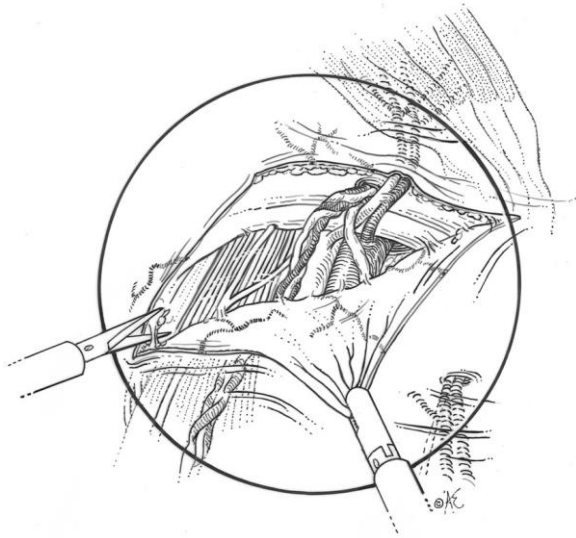
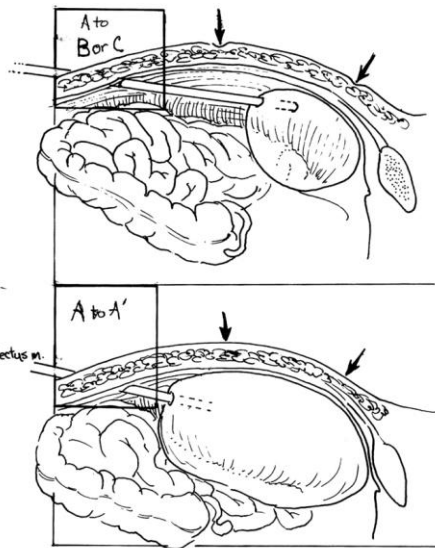
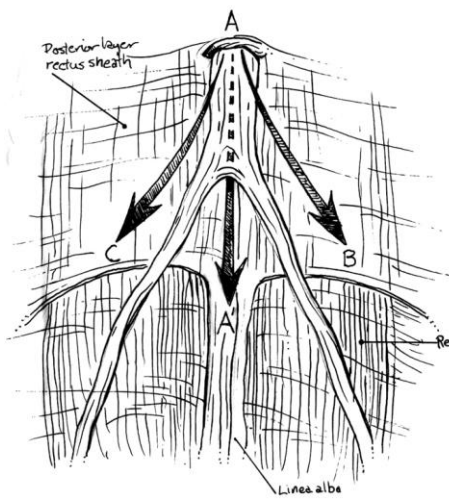


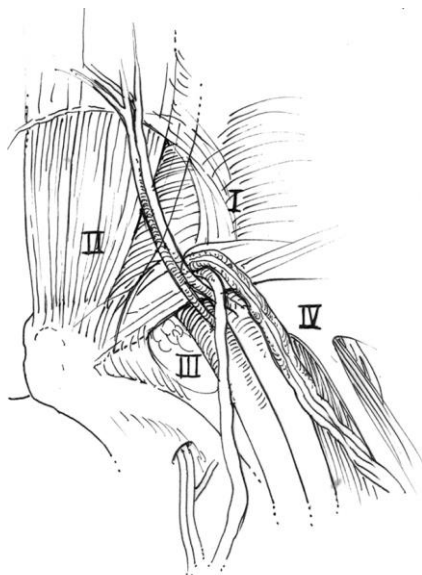
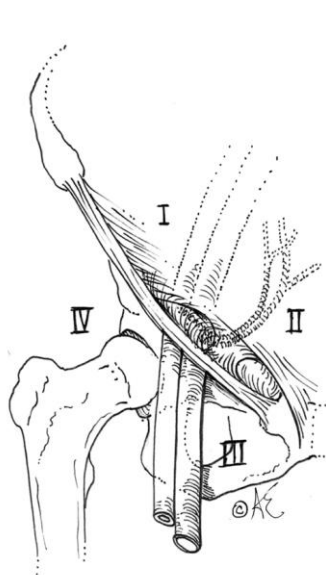
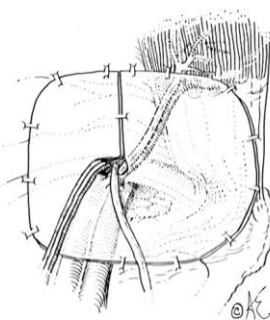
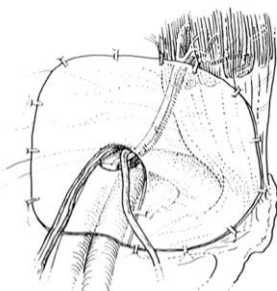
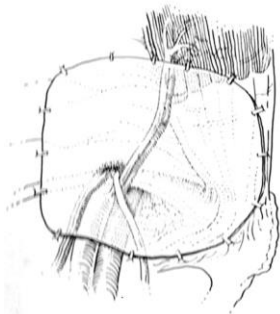
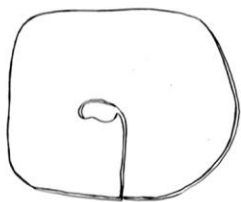
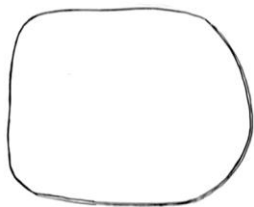


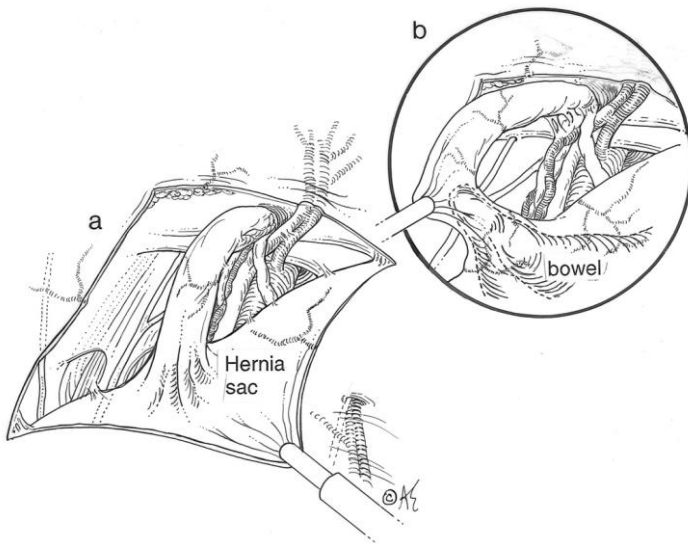


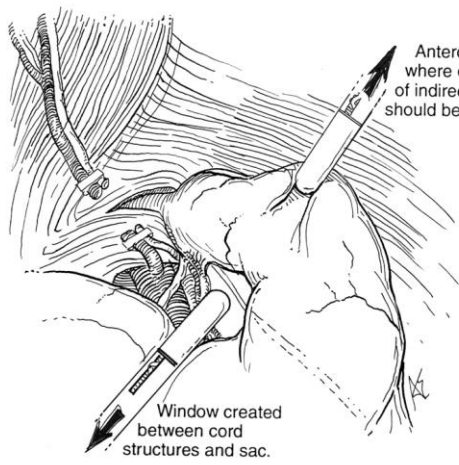




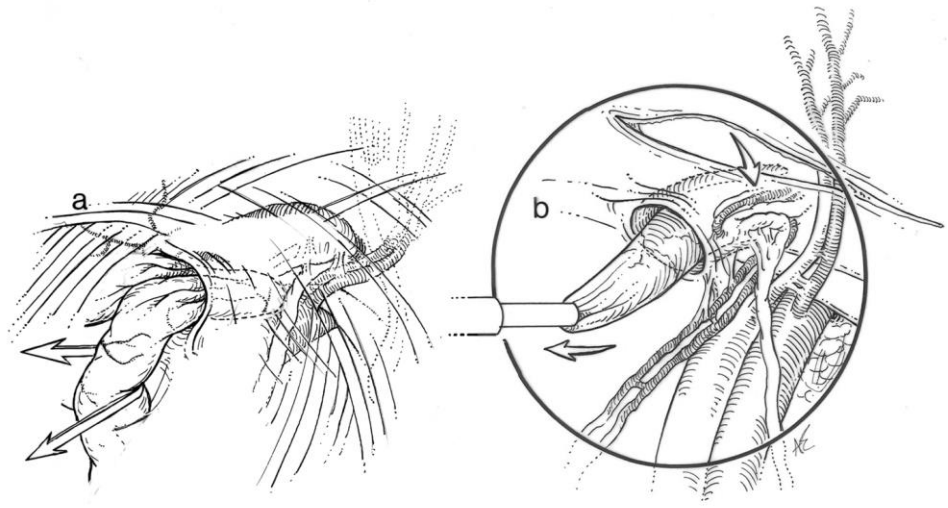
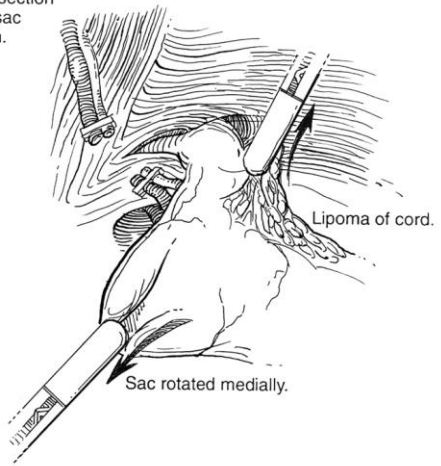


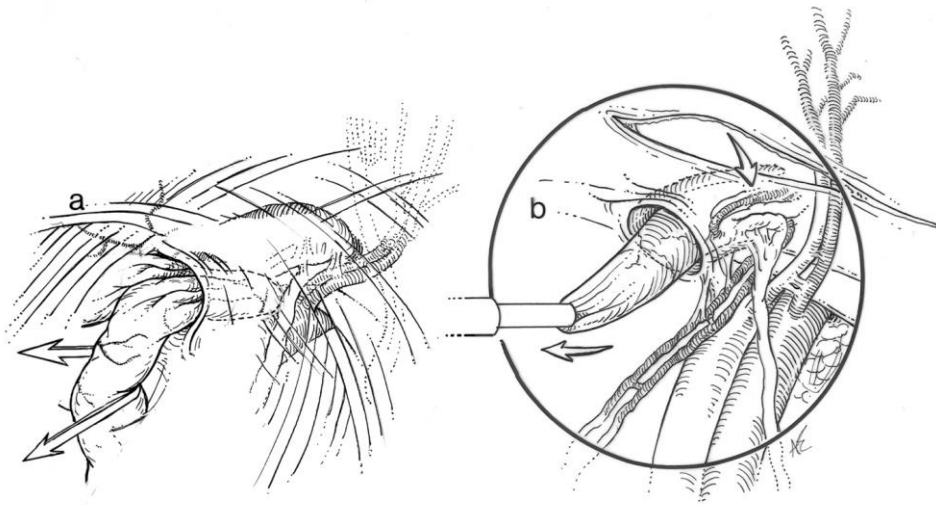


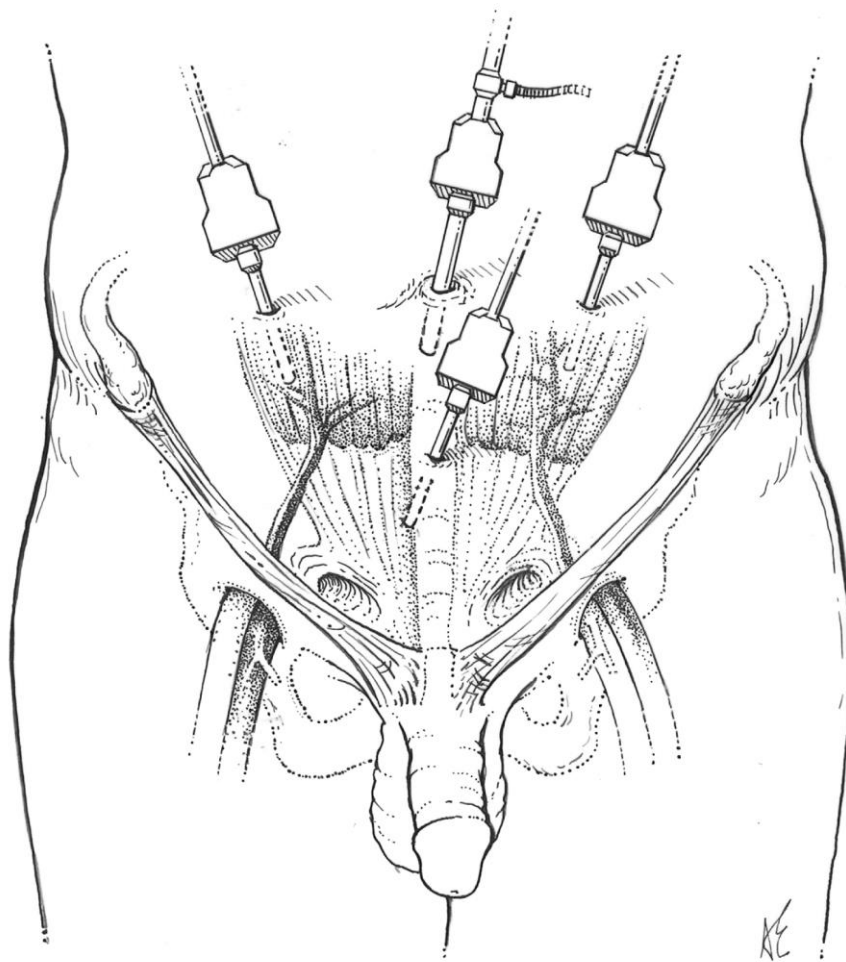


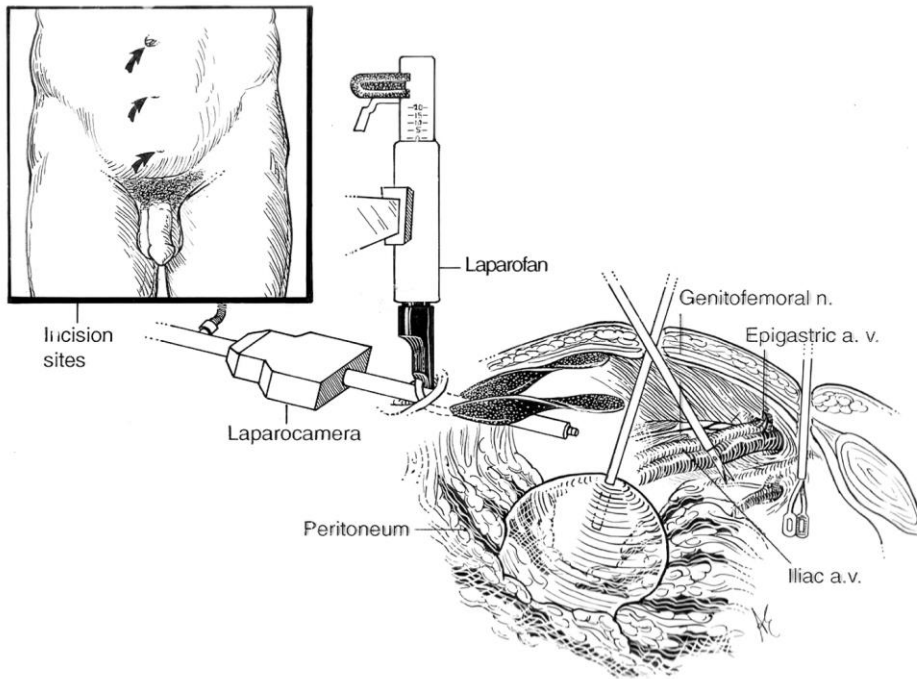
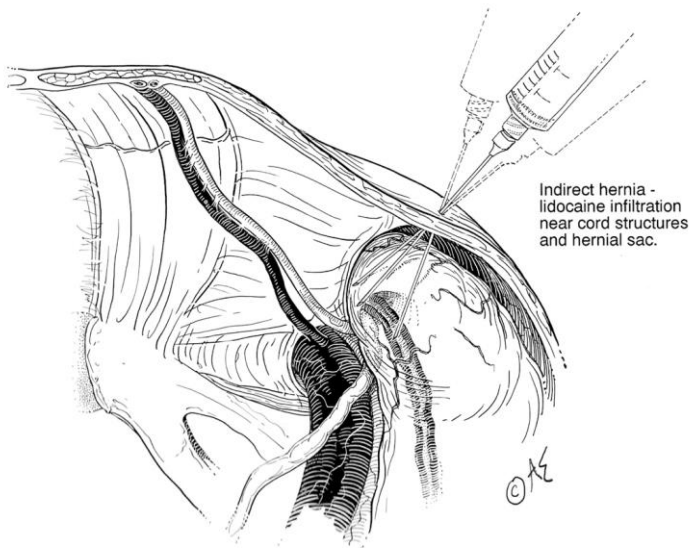


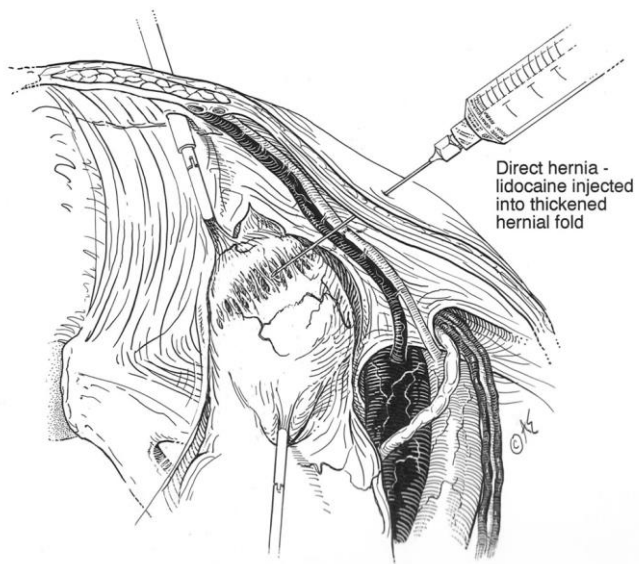
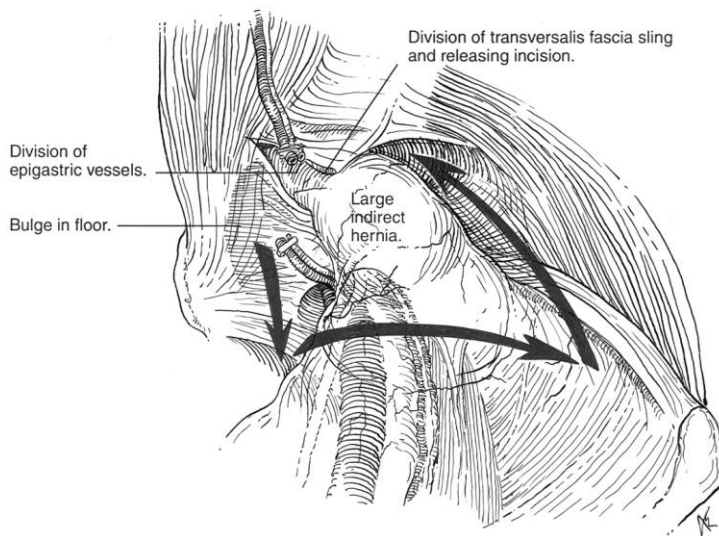
Anterolateral aspect where dissection of indirect sac should begin.

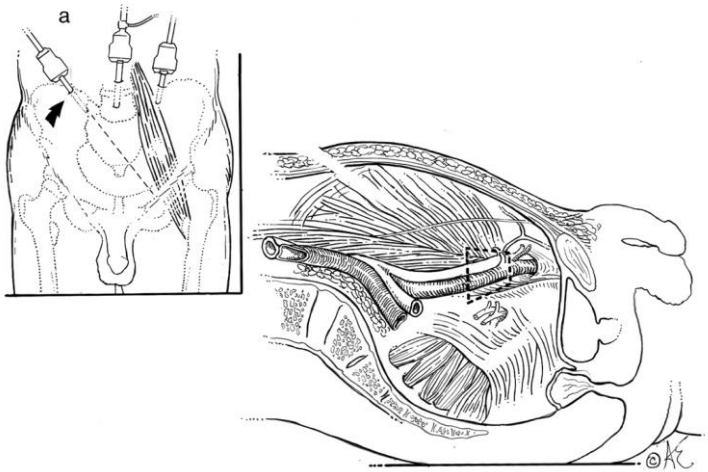
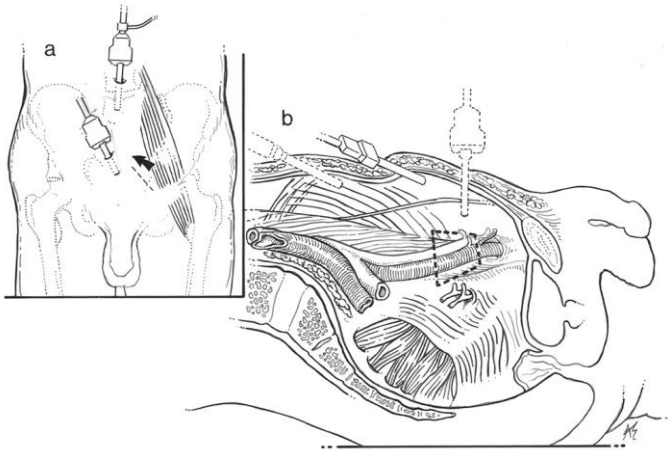


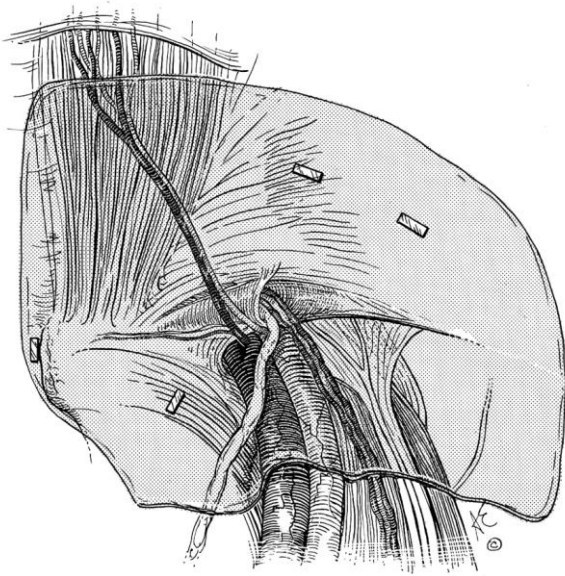
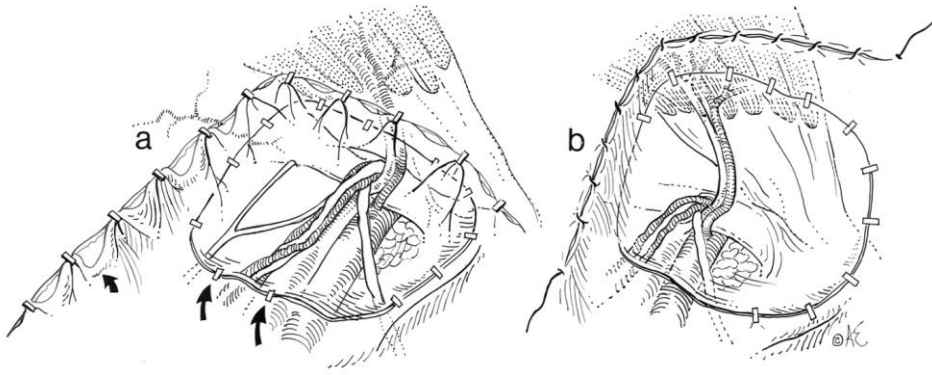


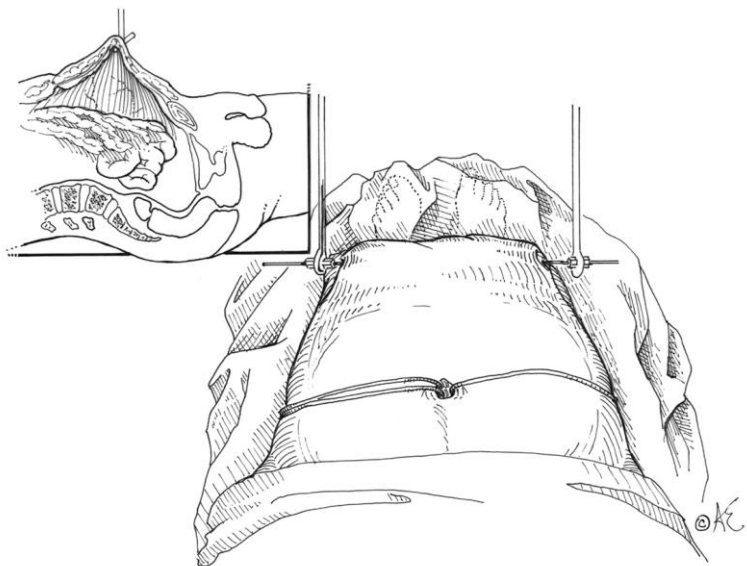


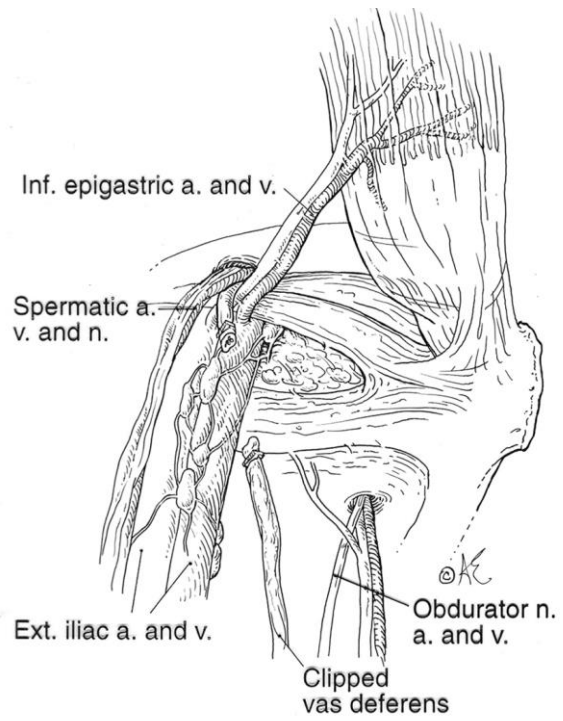


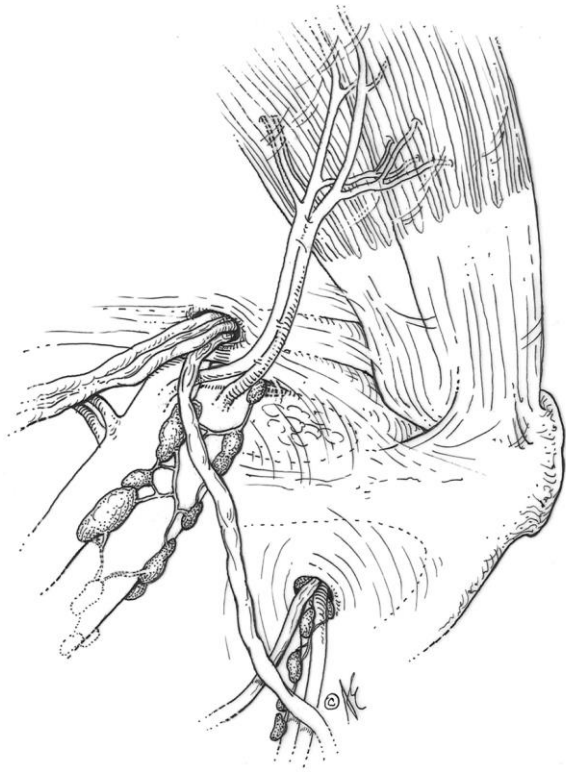


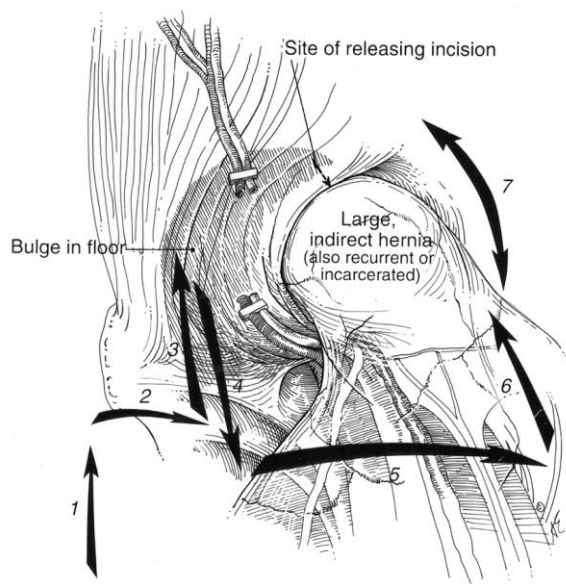










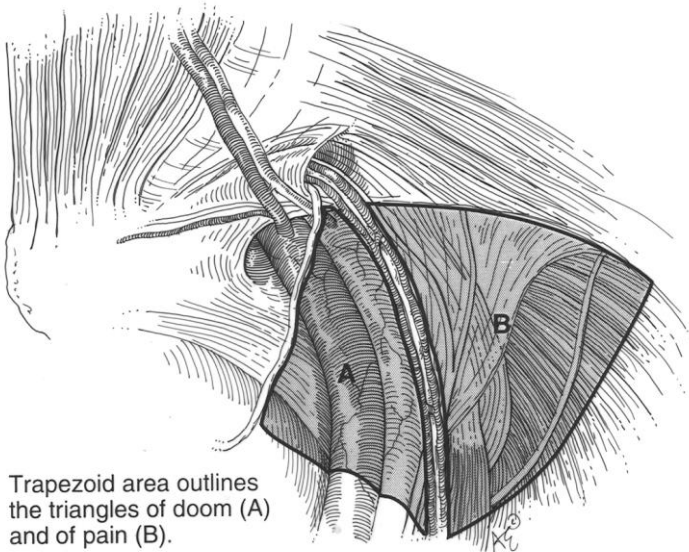


Site of releasing
incision (in case
of incarcerated
direct hernia).

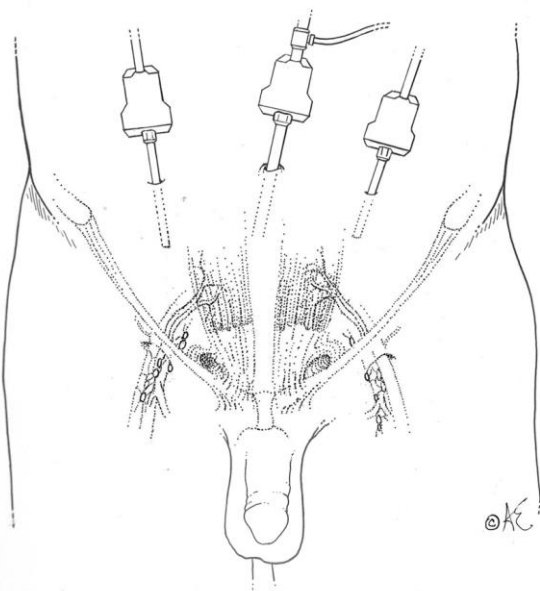
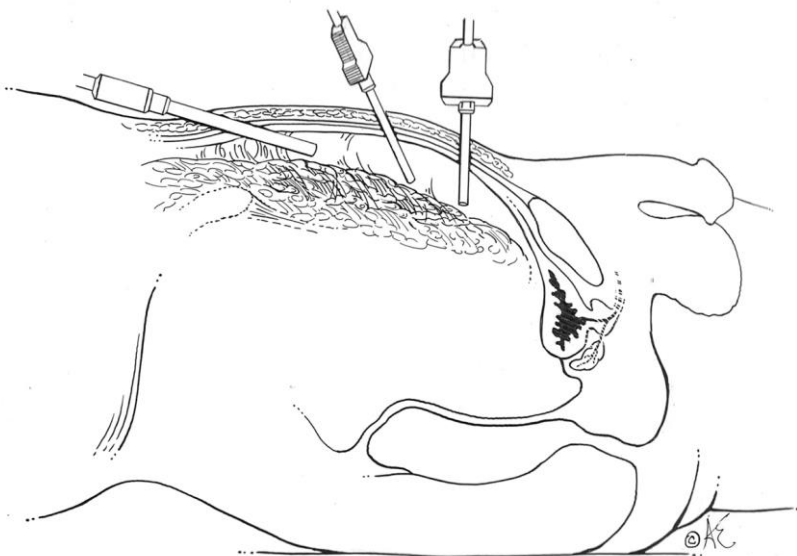
Large
direct
hernia.

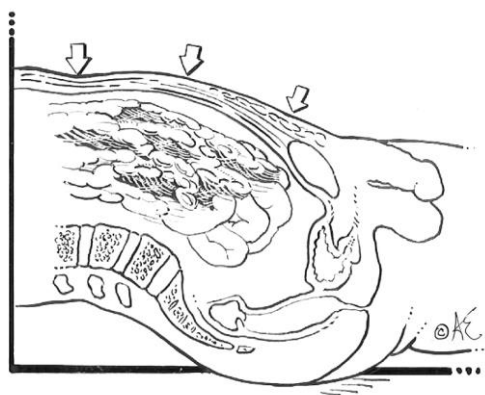
Line of
demarcation.

Traction and countertraction
dissection.

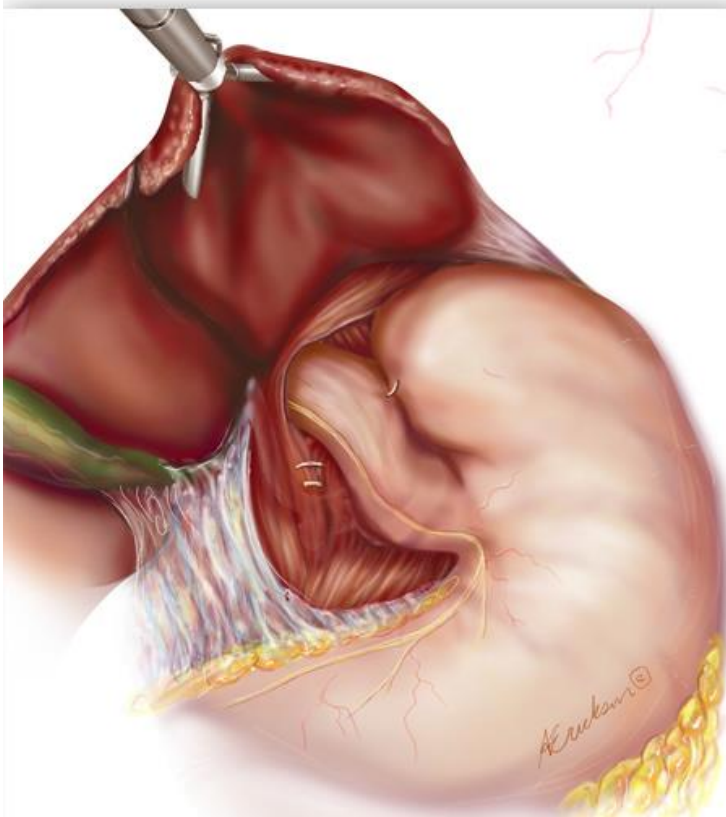


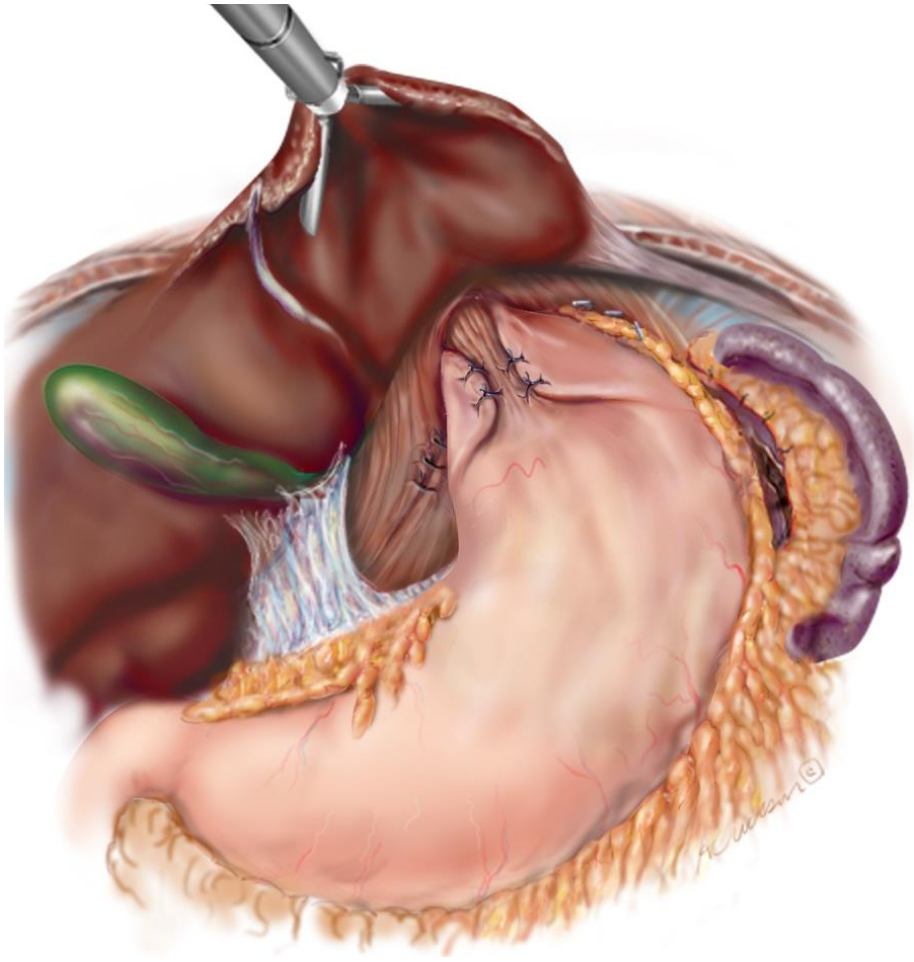
Trapezoid area outlines
the triangles of doom (A)
and of pain (B).

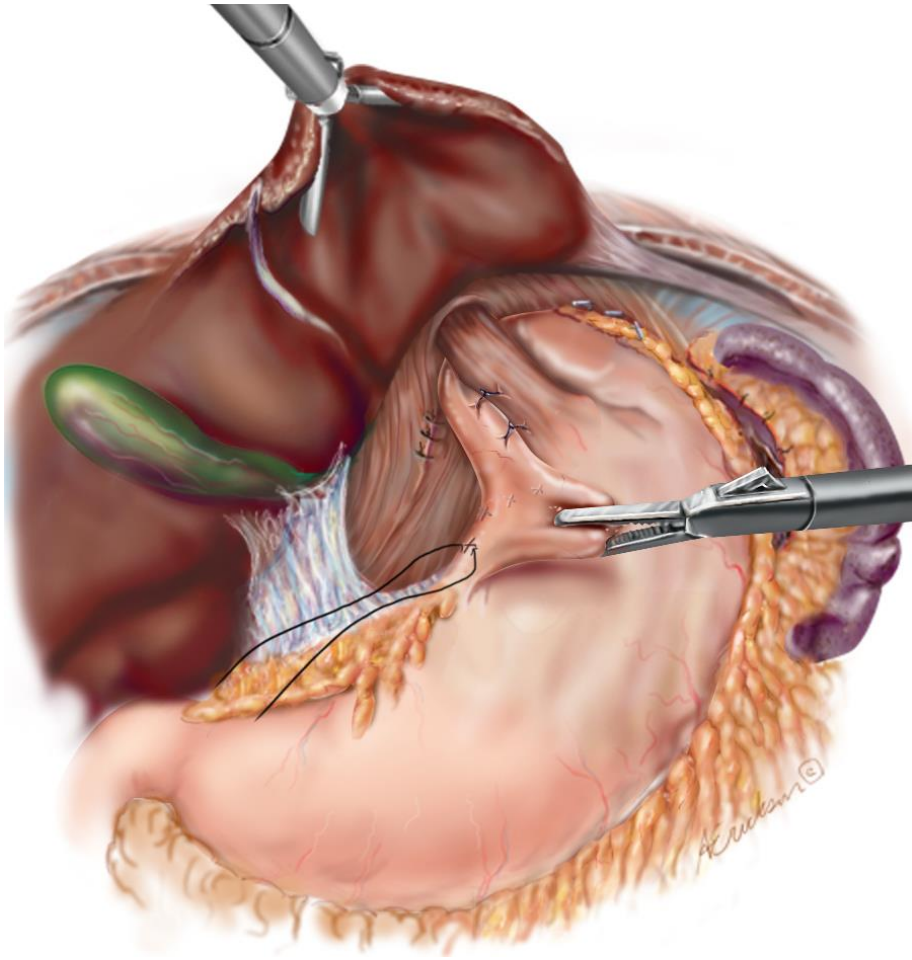


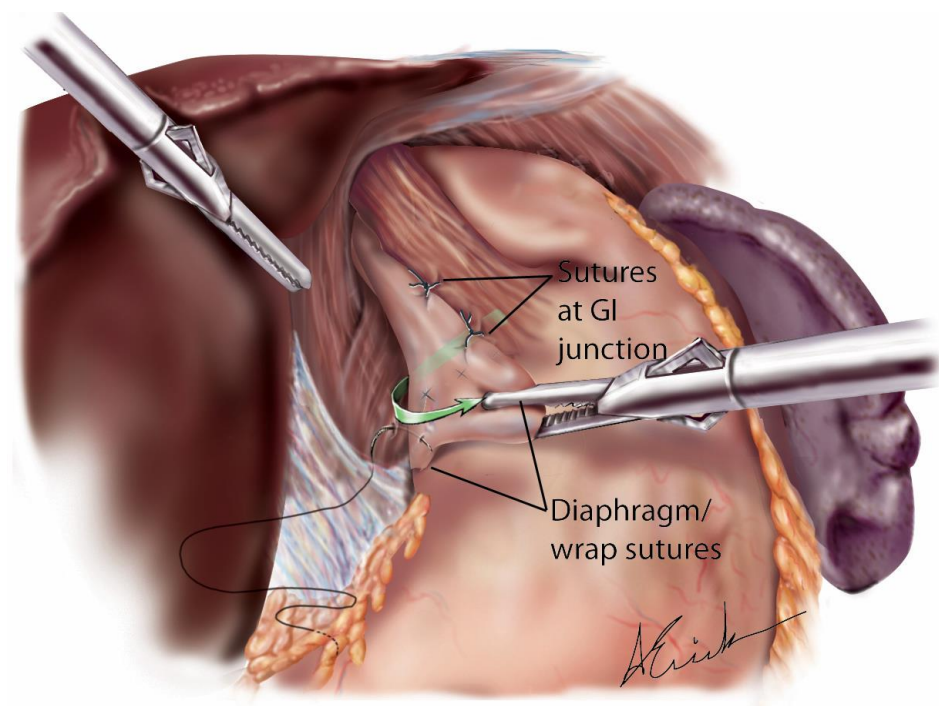


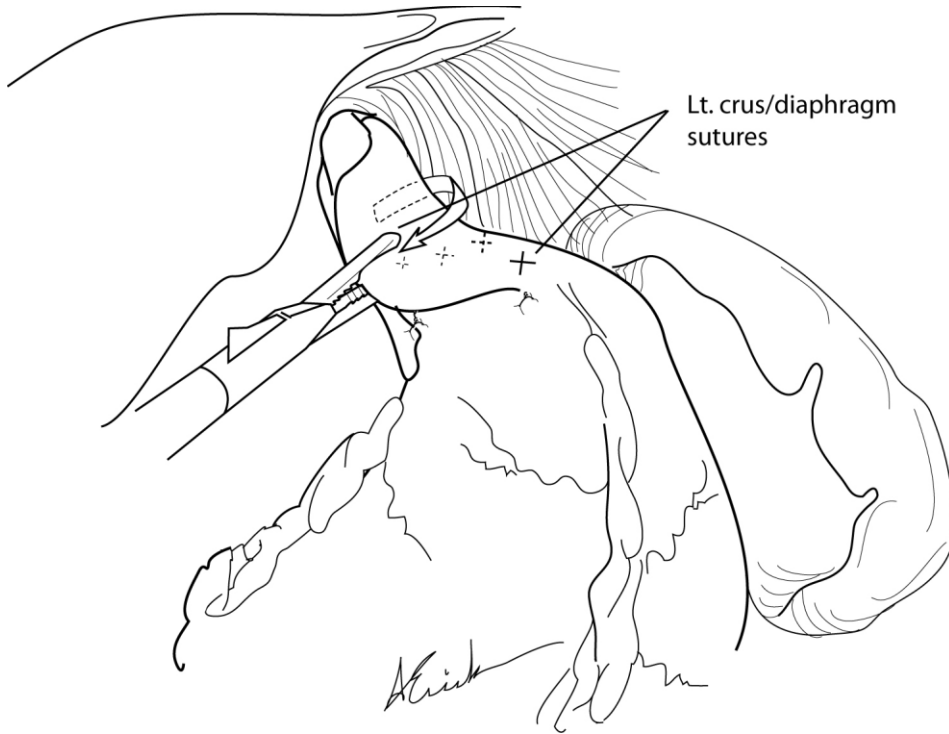
Hiatal Hernia

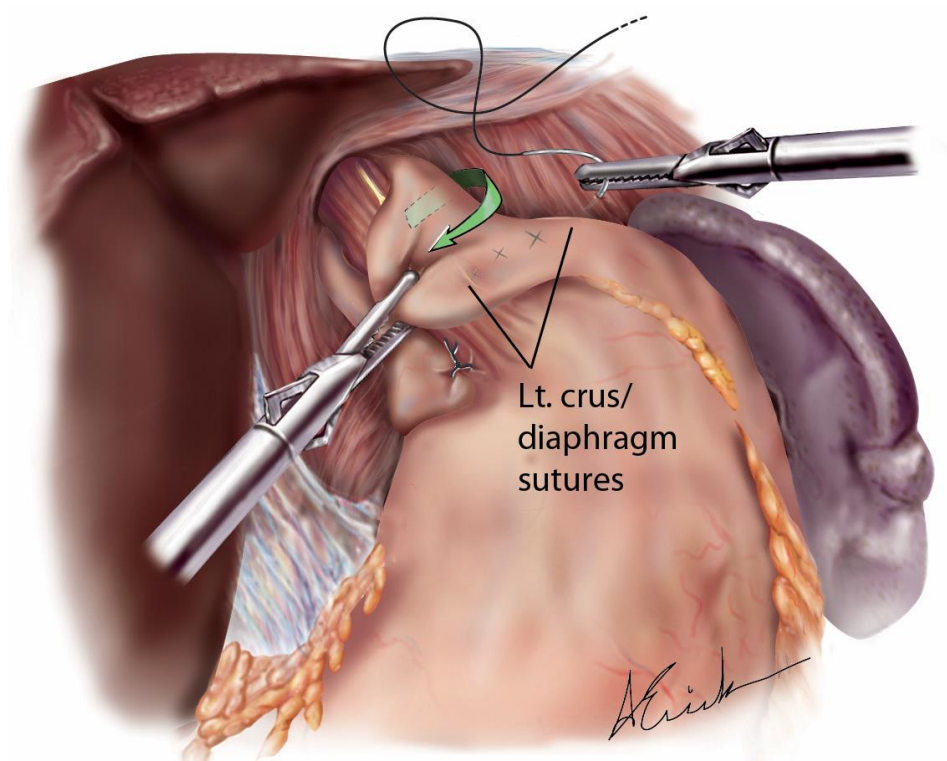


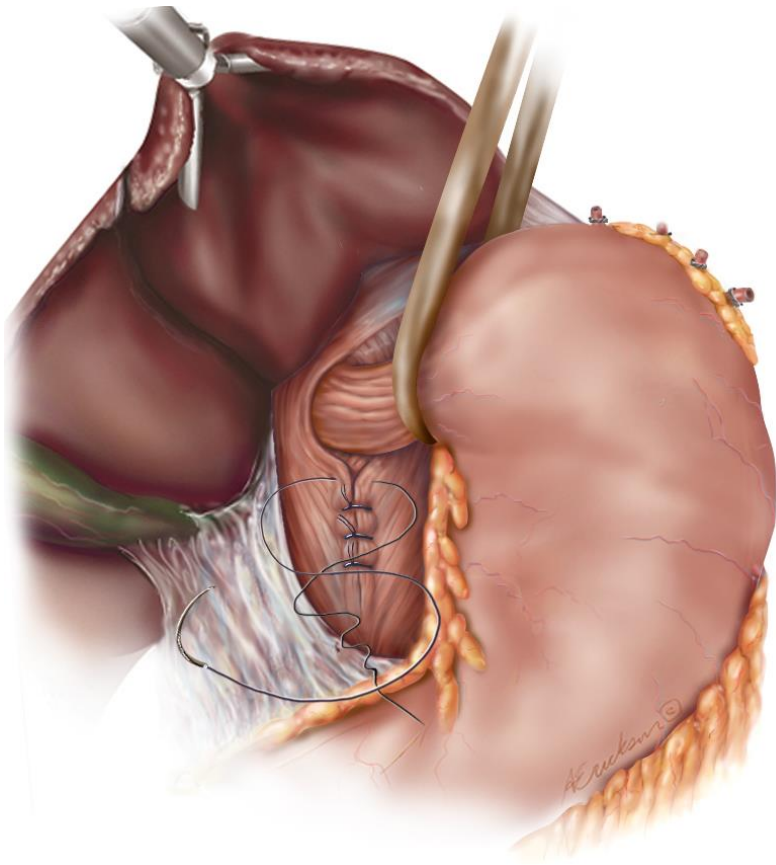




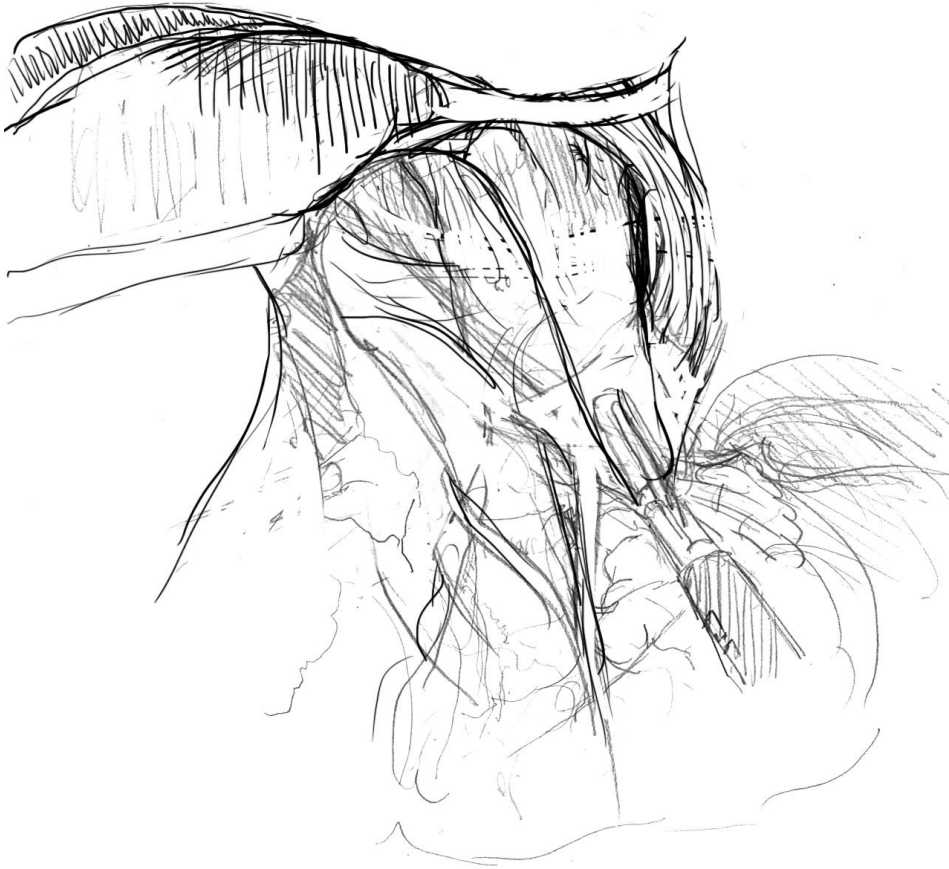


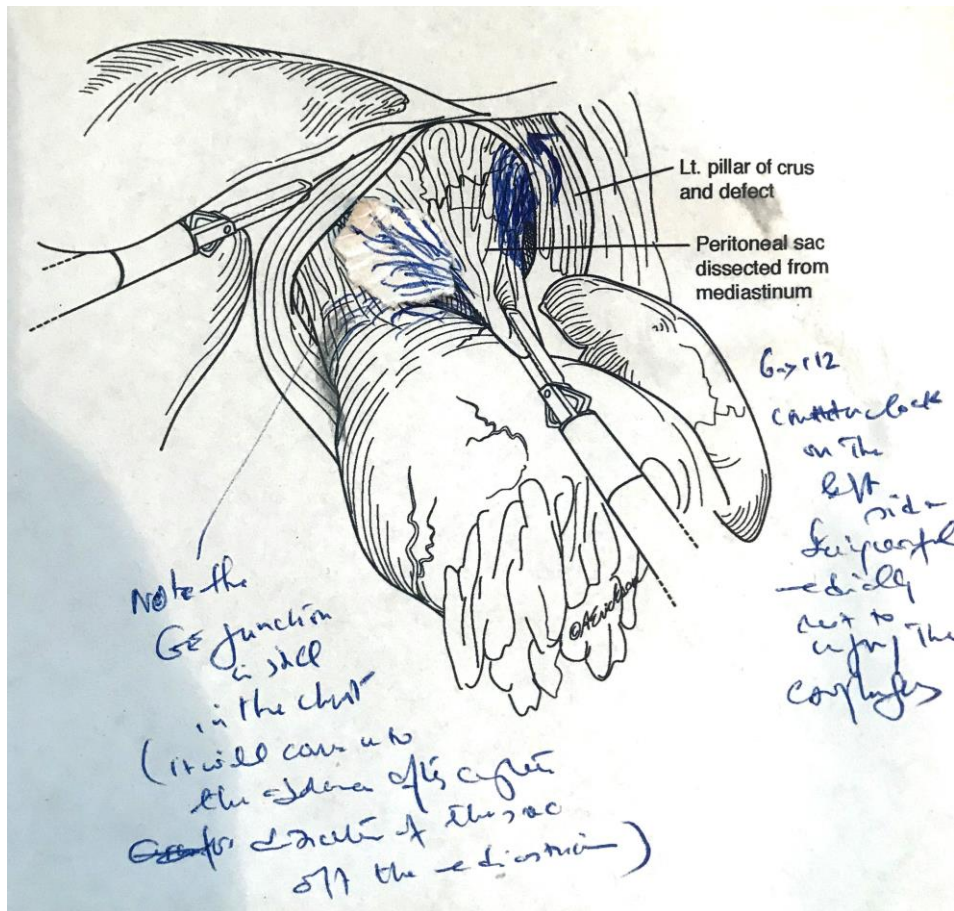


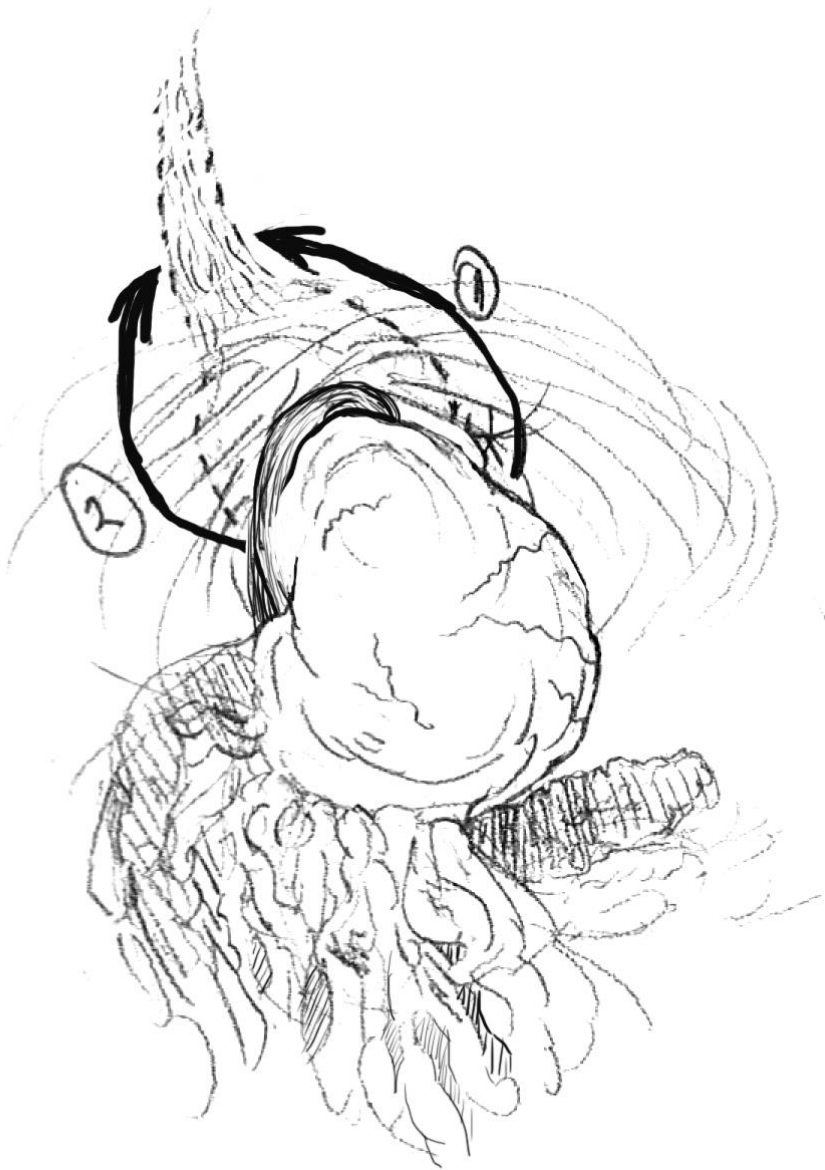


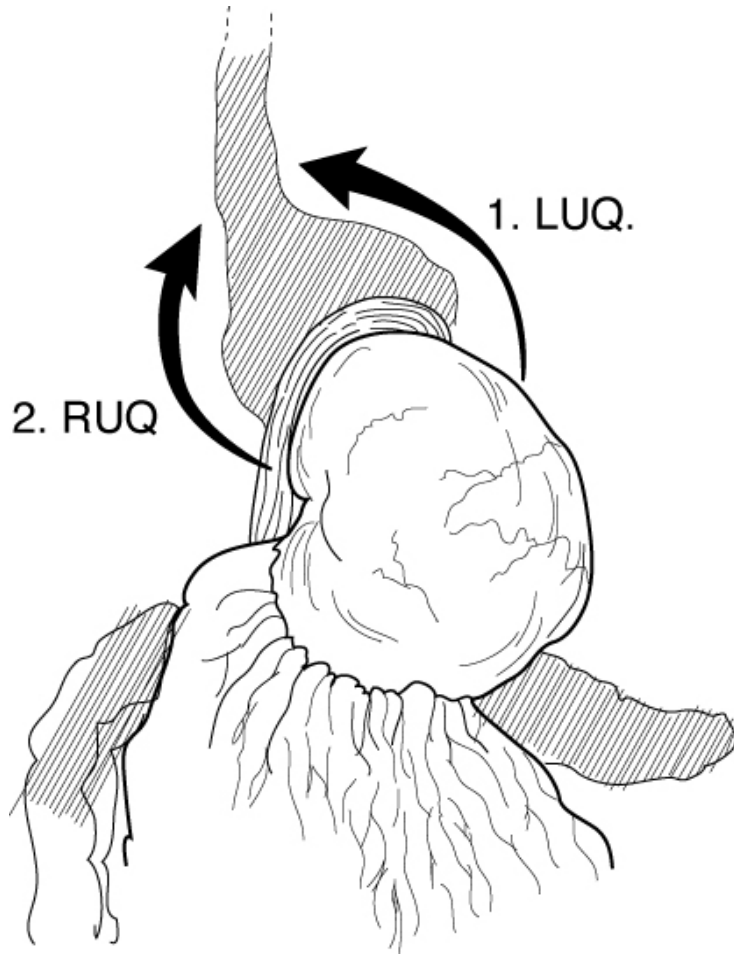


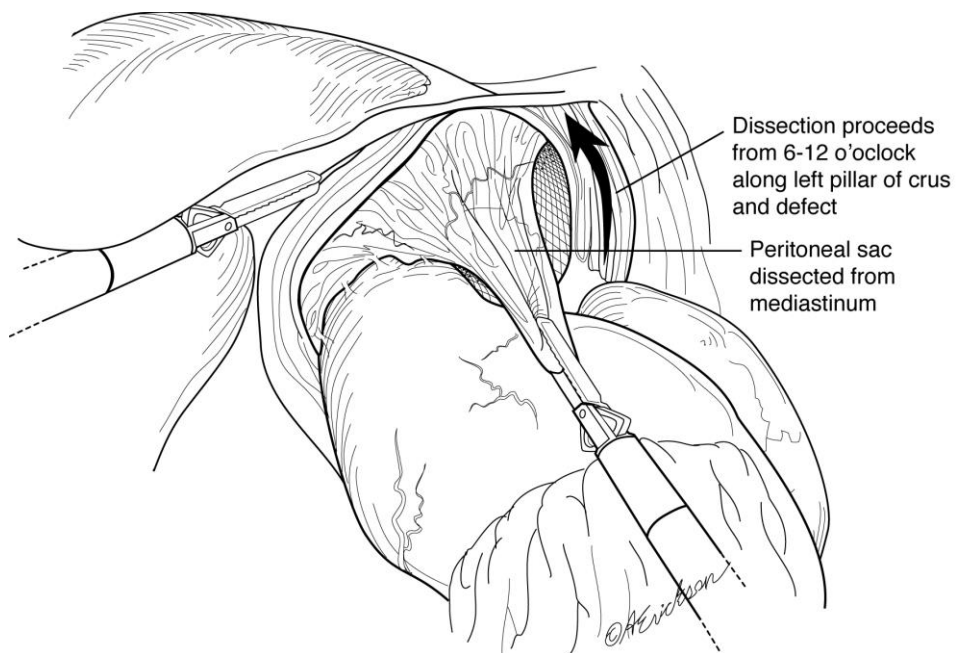
D. H. condensation

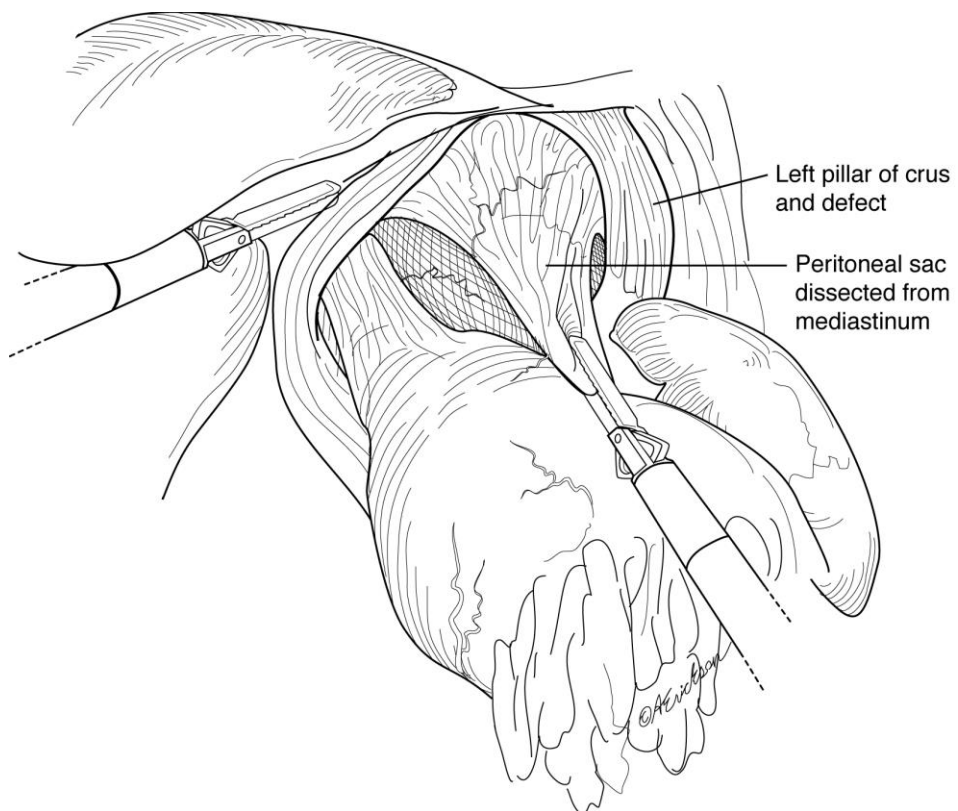


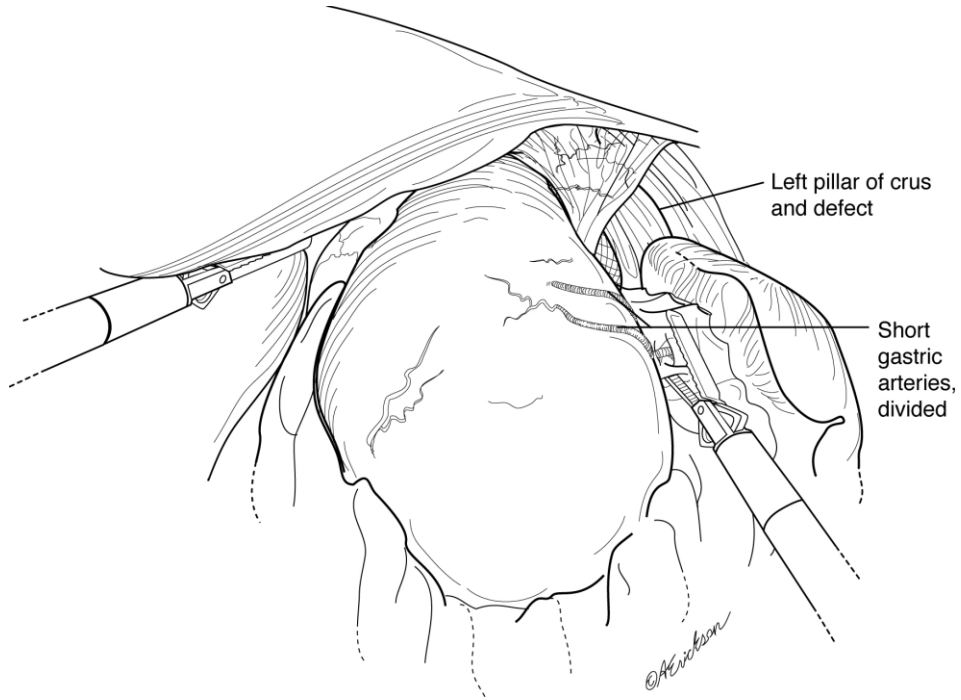


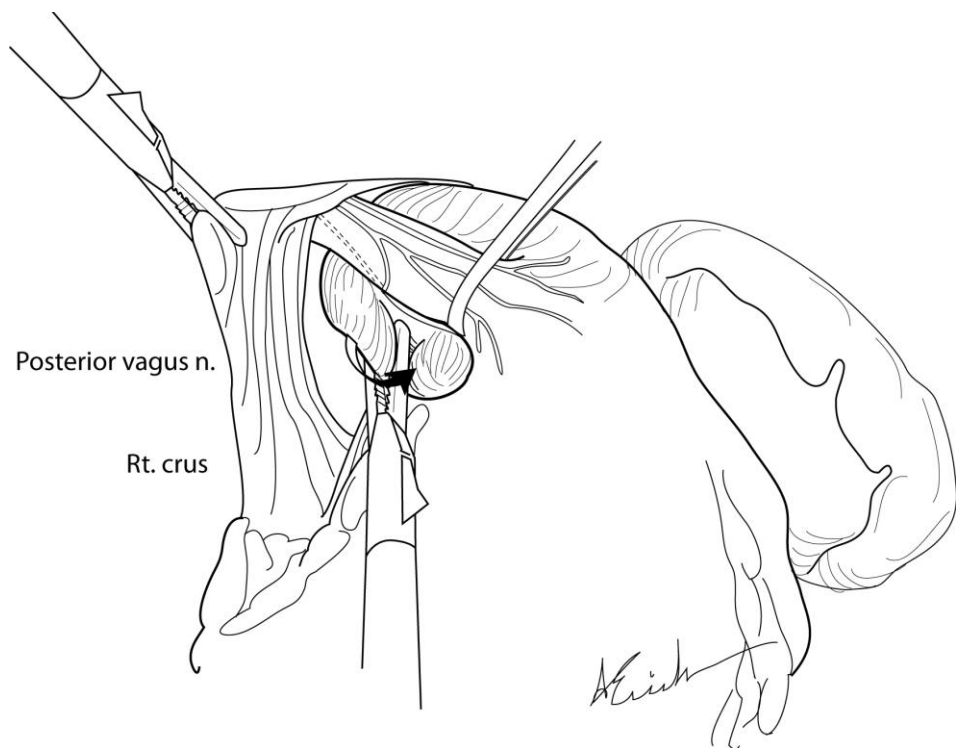


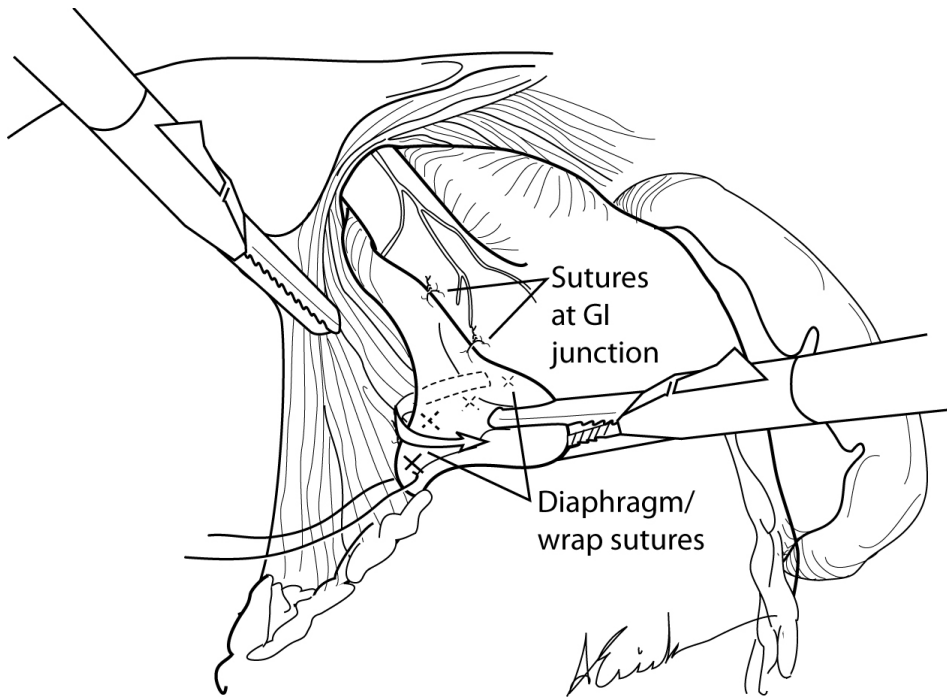


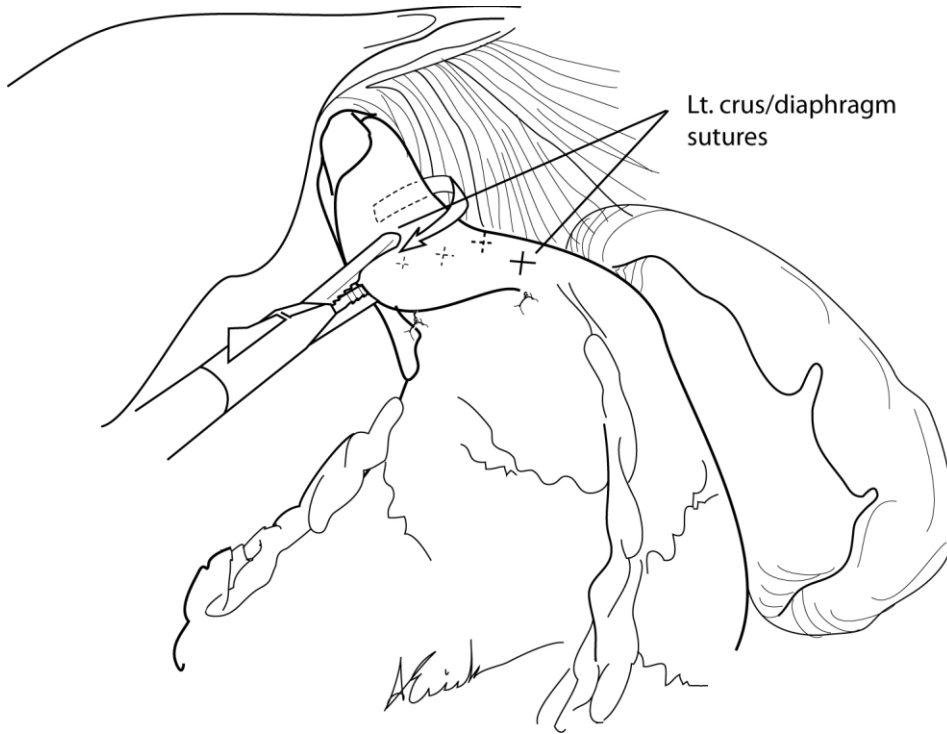


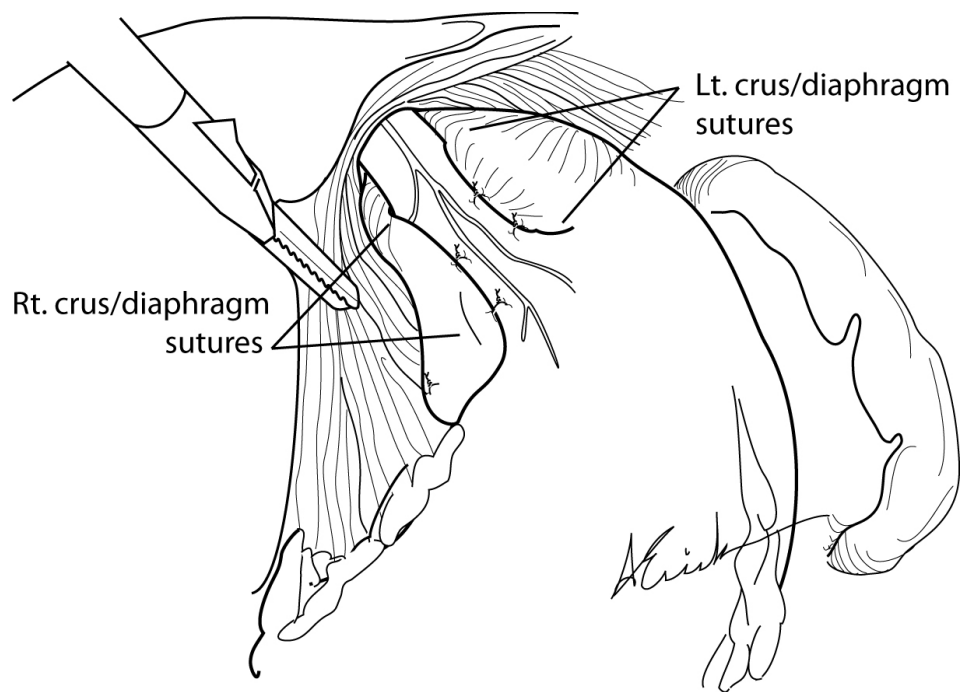


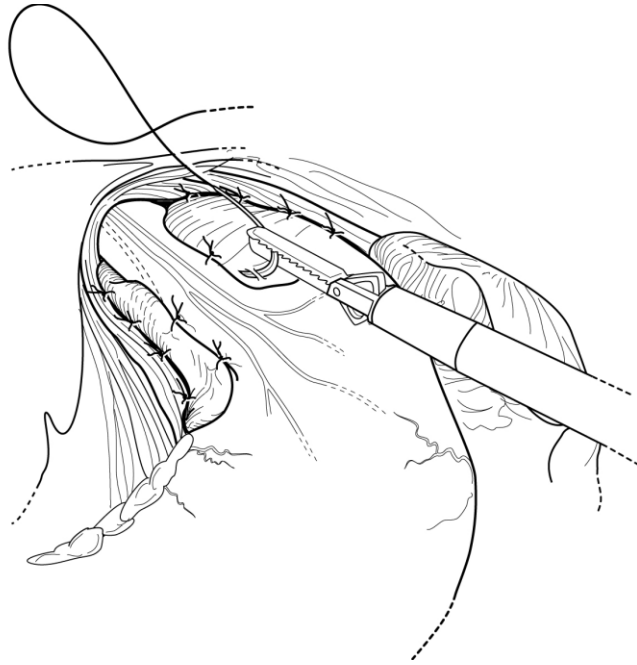
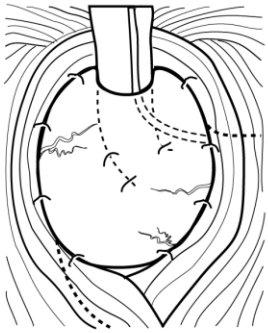


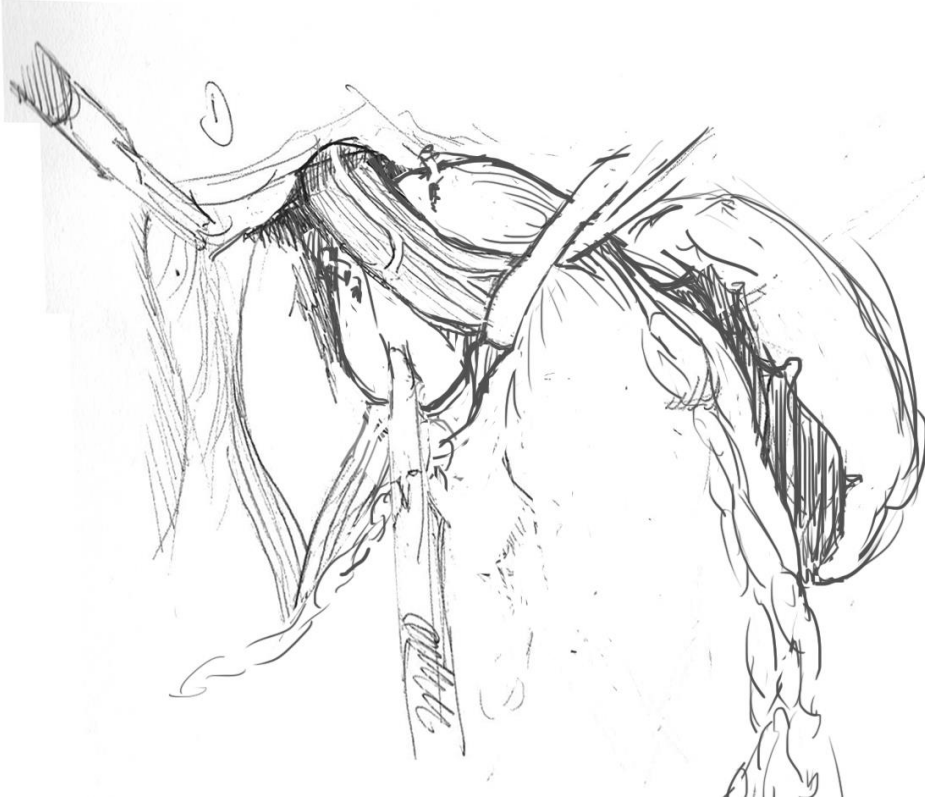


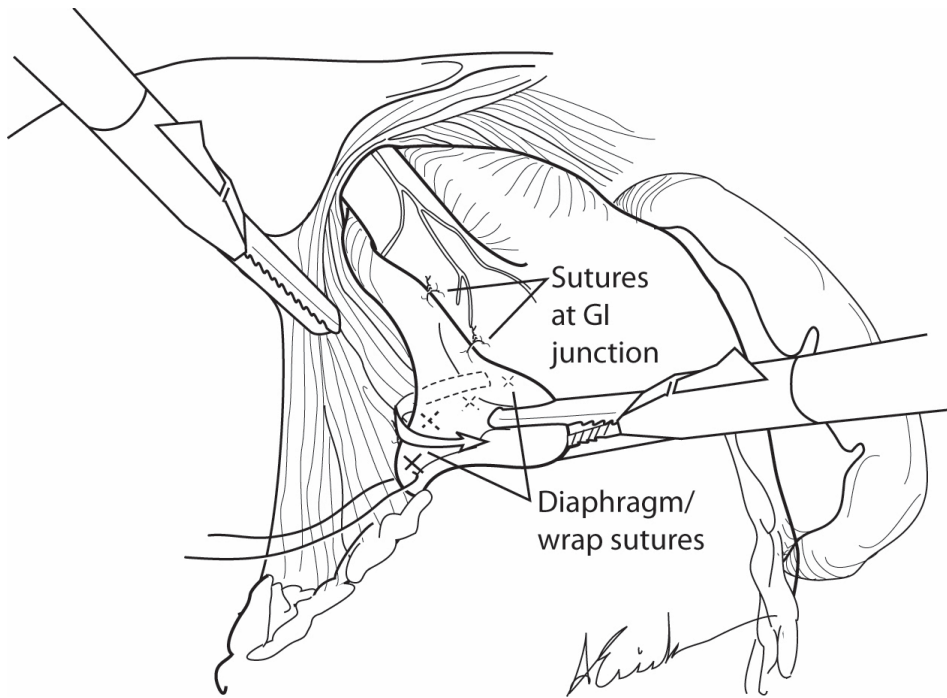


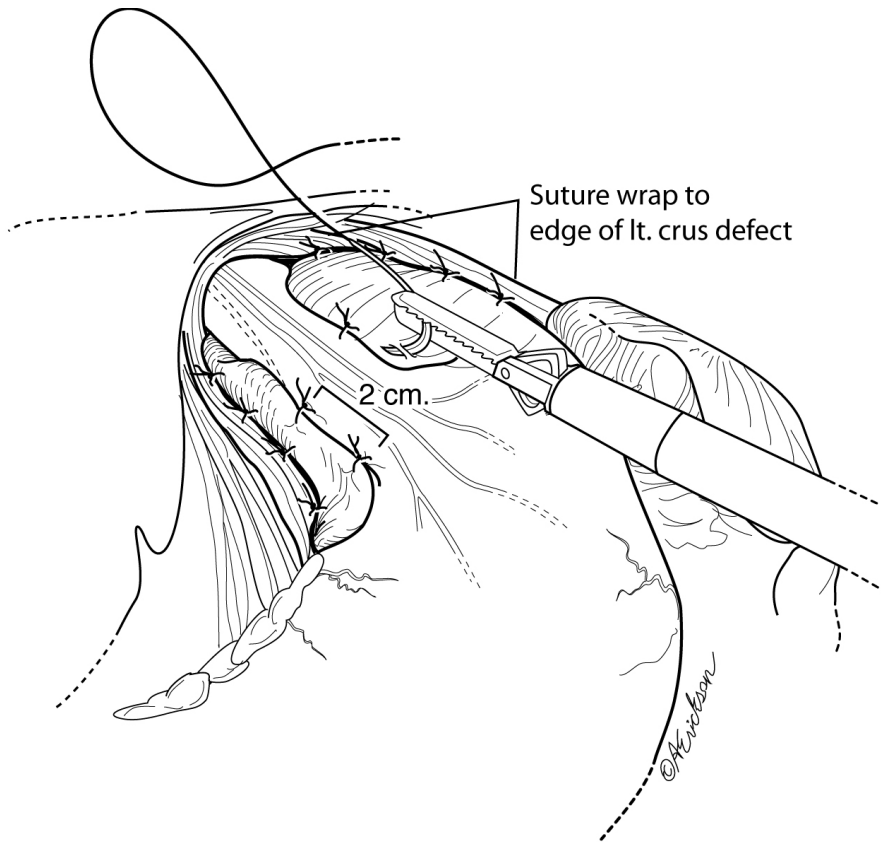




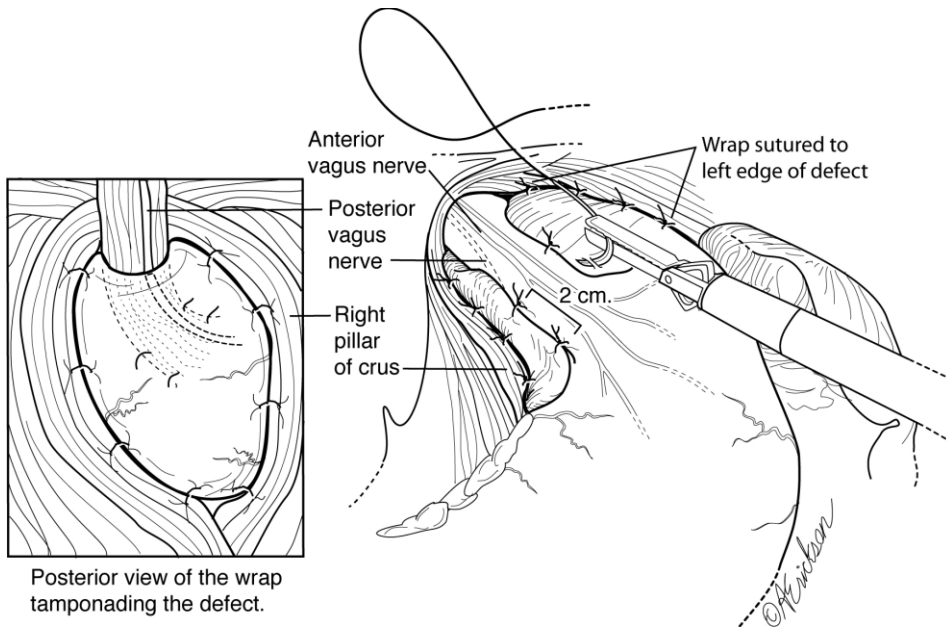


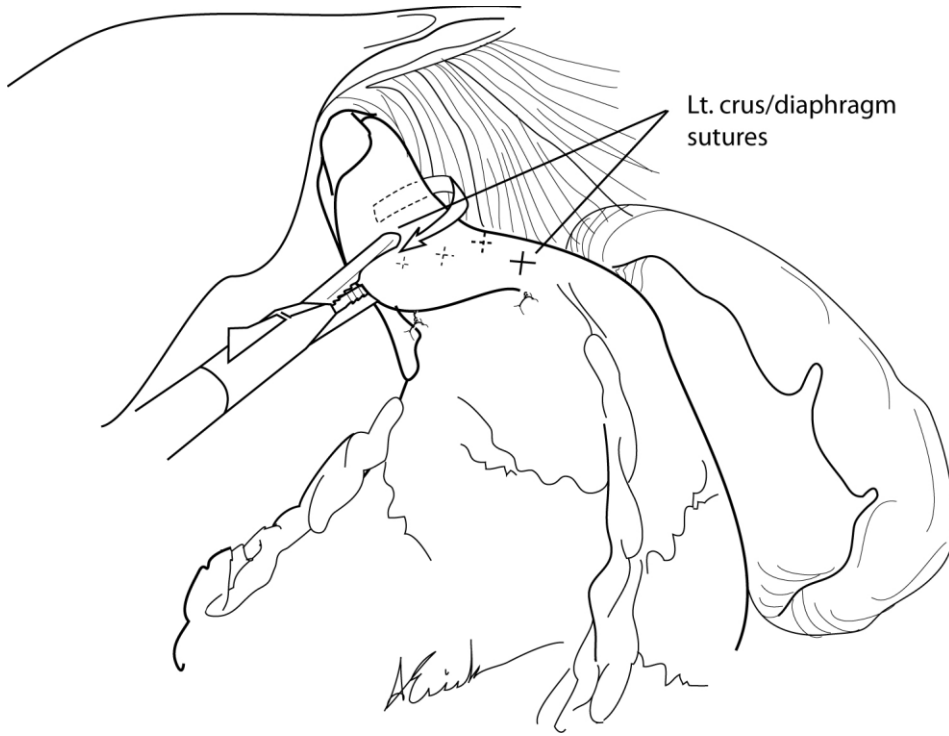


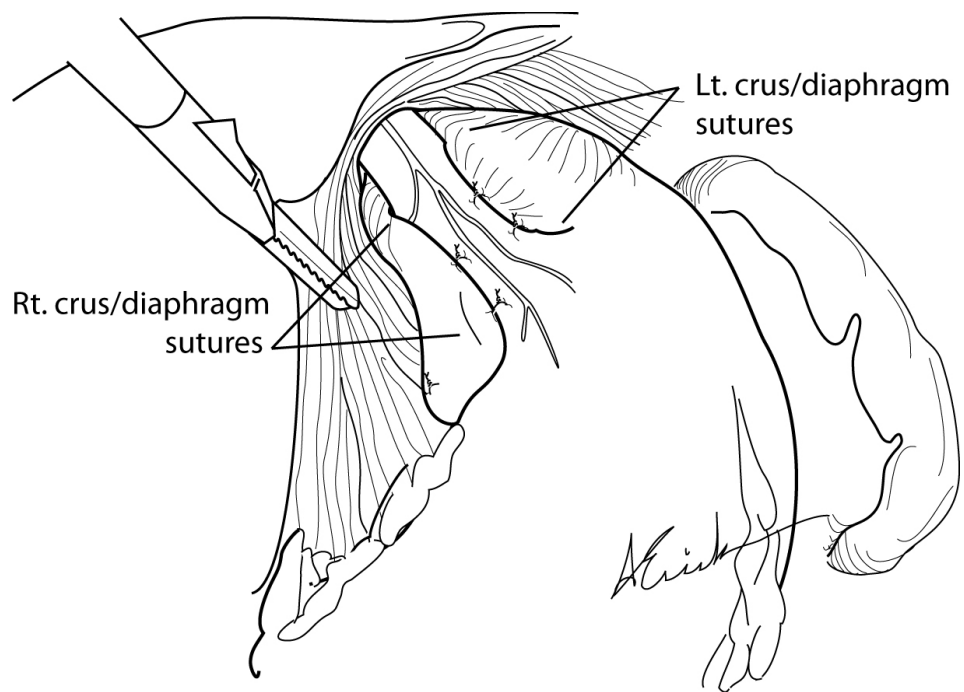


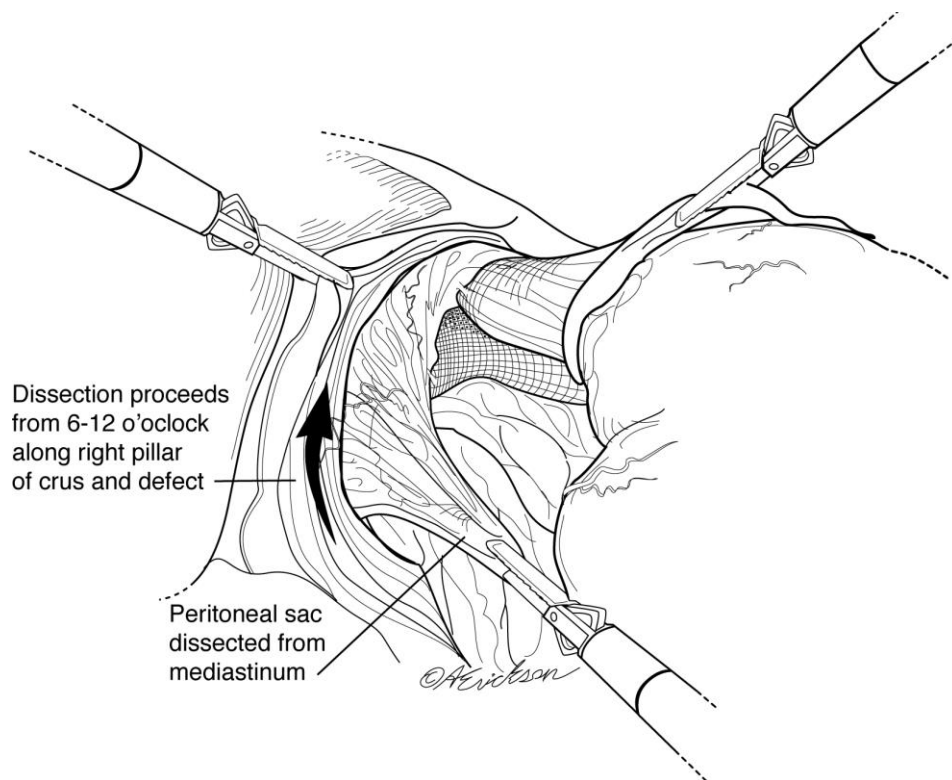


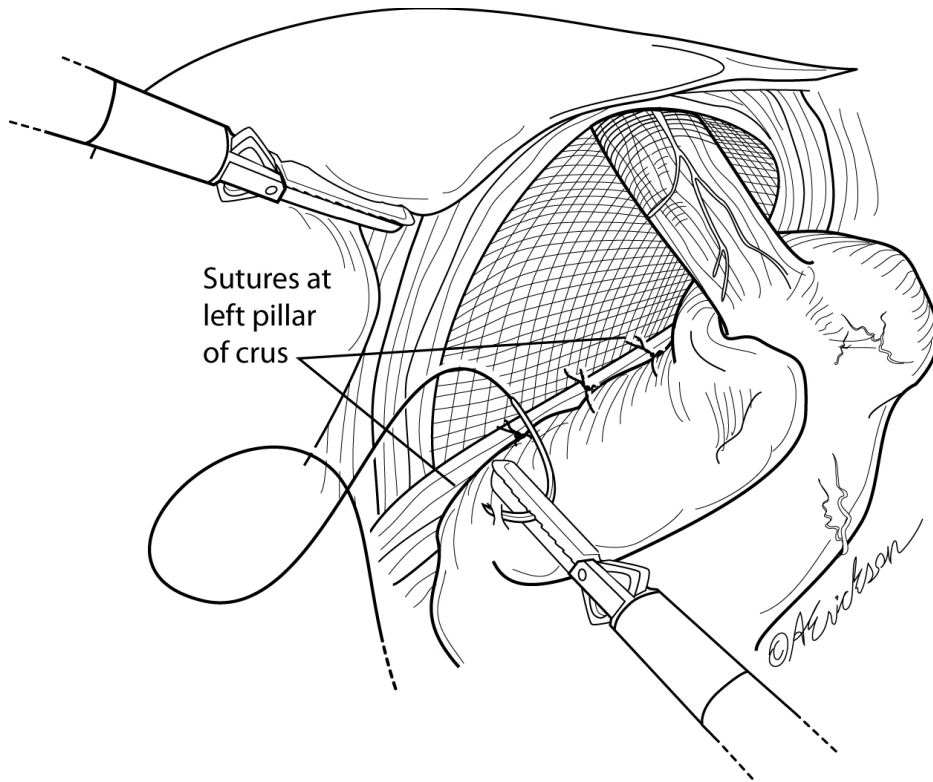
Tension-free wrap sutured to esophagus and left crus.



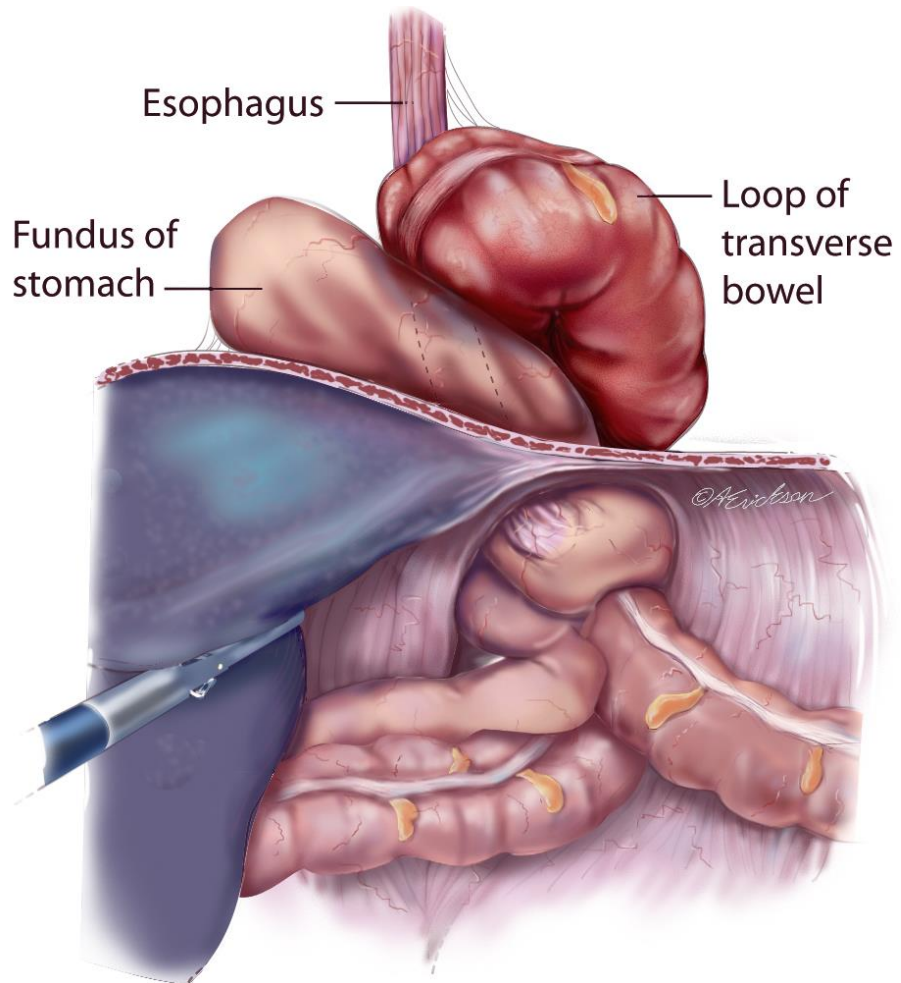


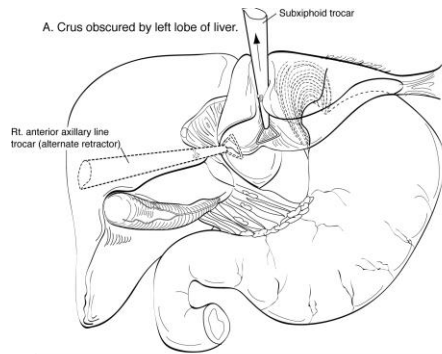




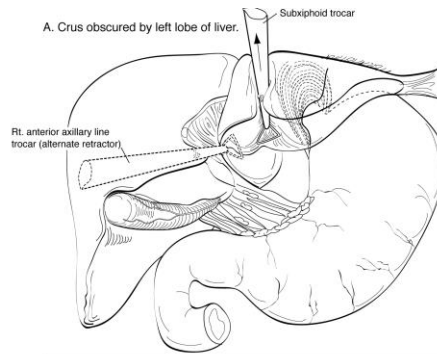
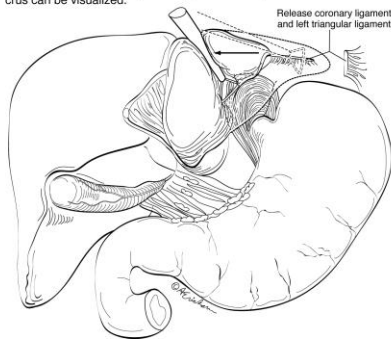


Optional alternative: first suture the wrap to the left pillar of the crus via the large esophago-gastric window.

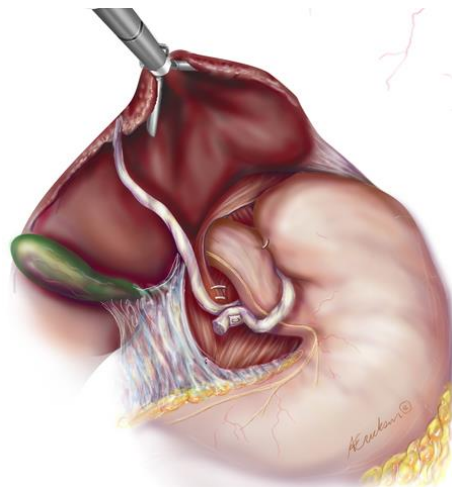
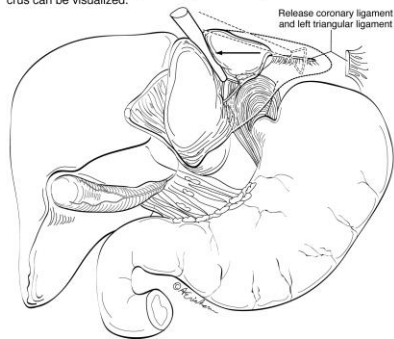


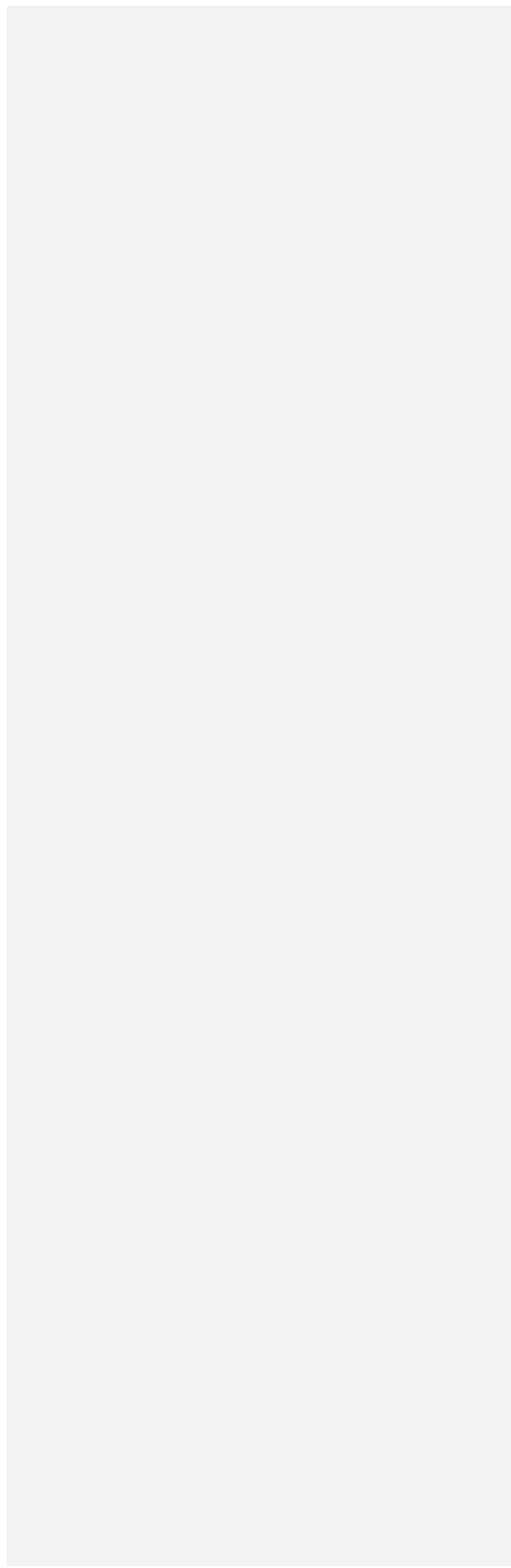


B. Left lobe of liver pushed posteriorly and to the right—crus can be visualized.

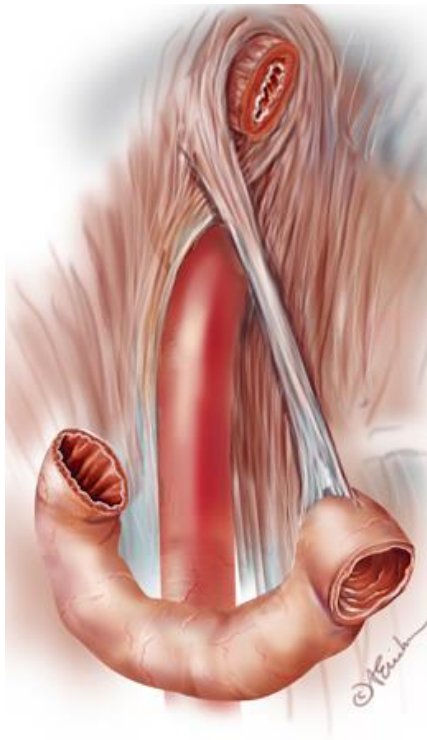


B. Left lobe of liver pushed posteriorly and to the right—crus can be visualized.

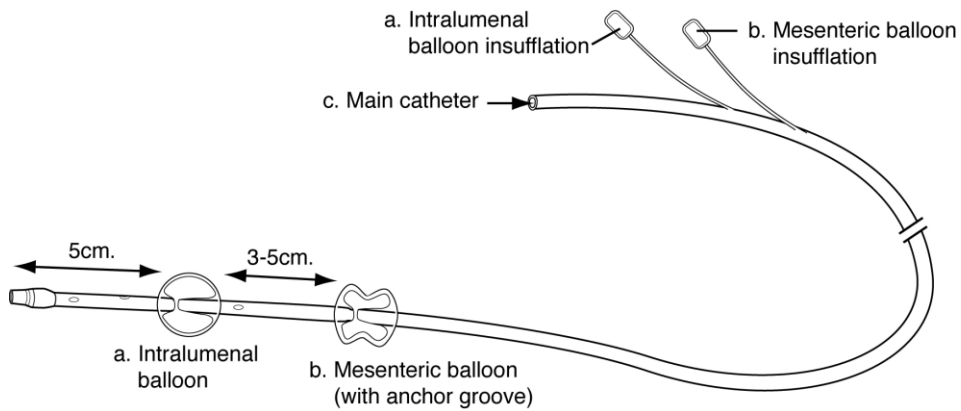
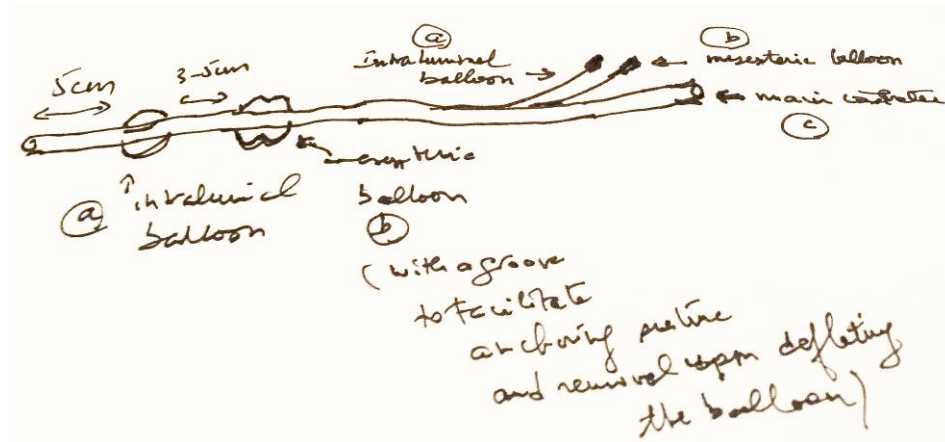


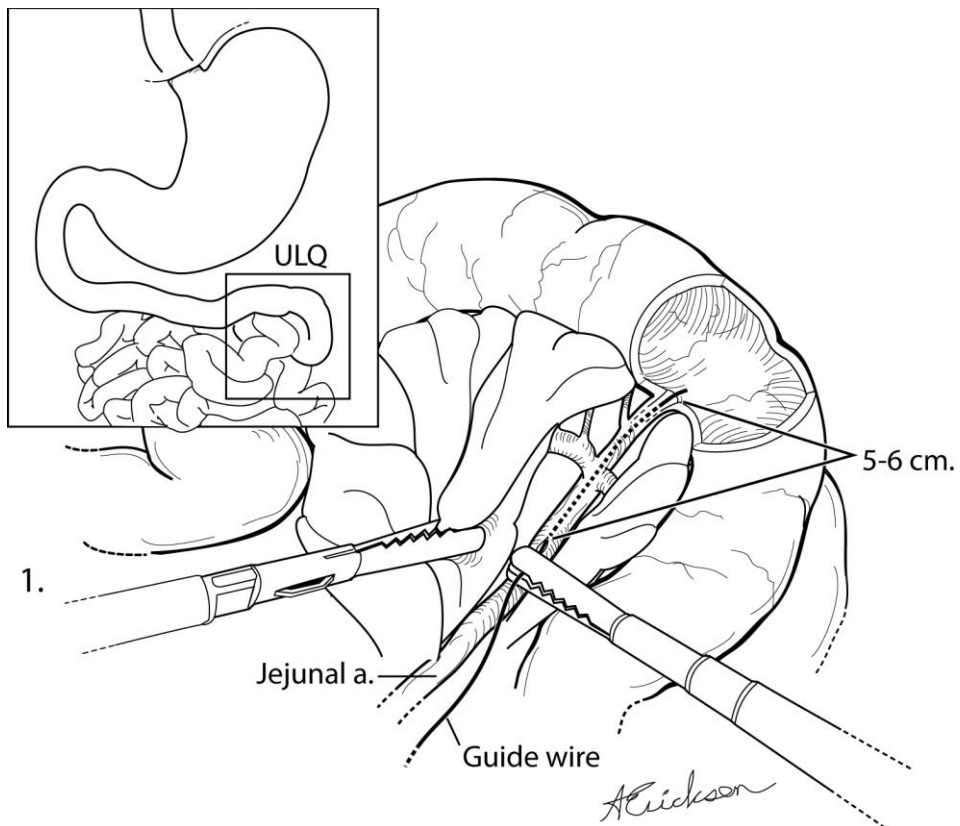


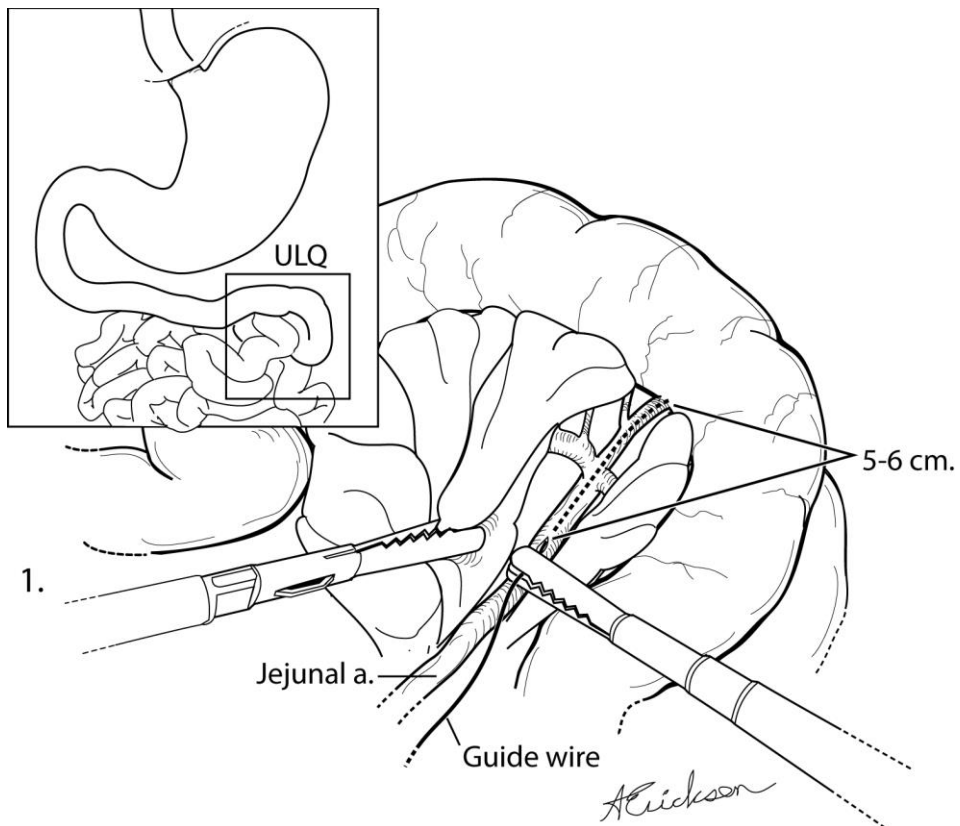


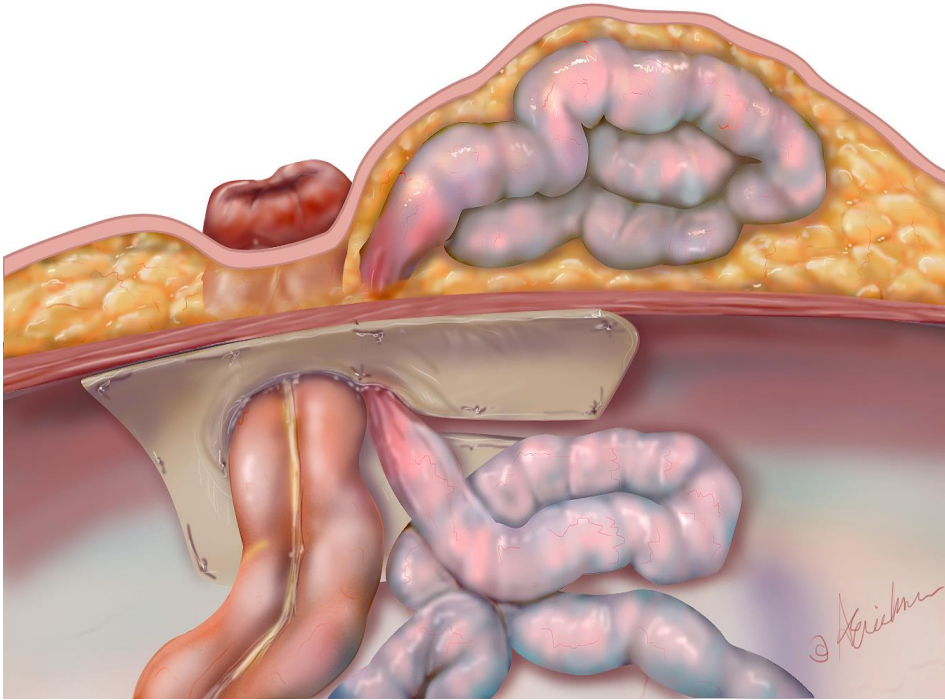


Intestines

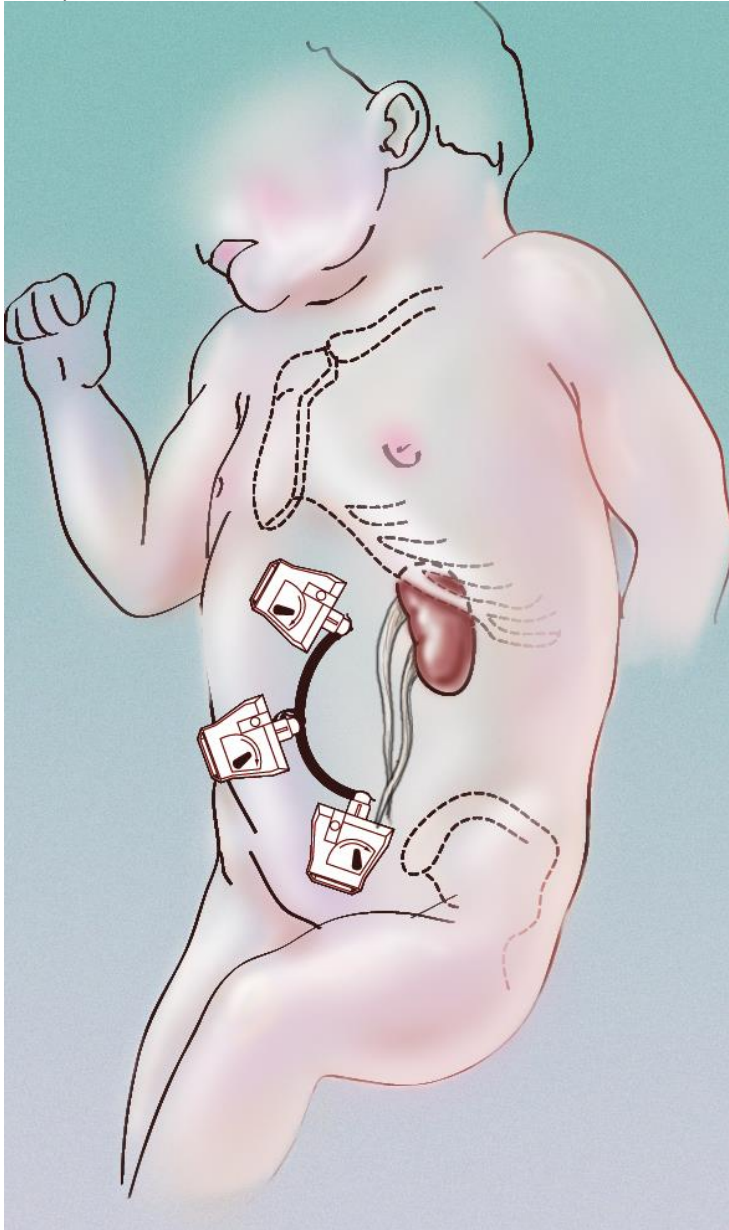


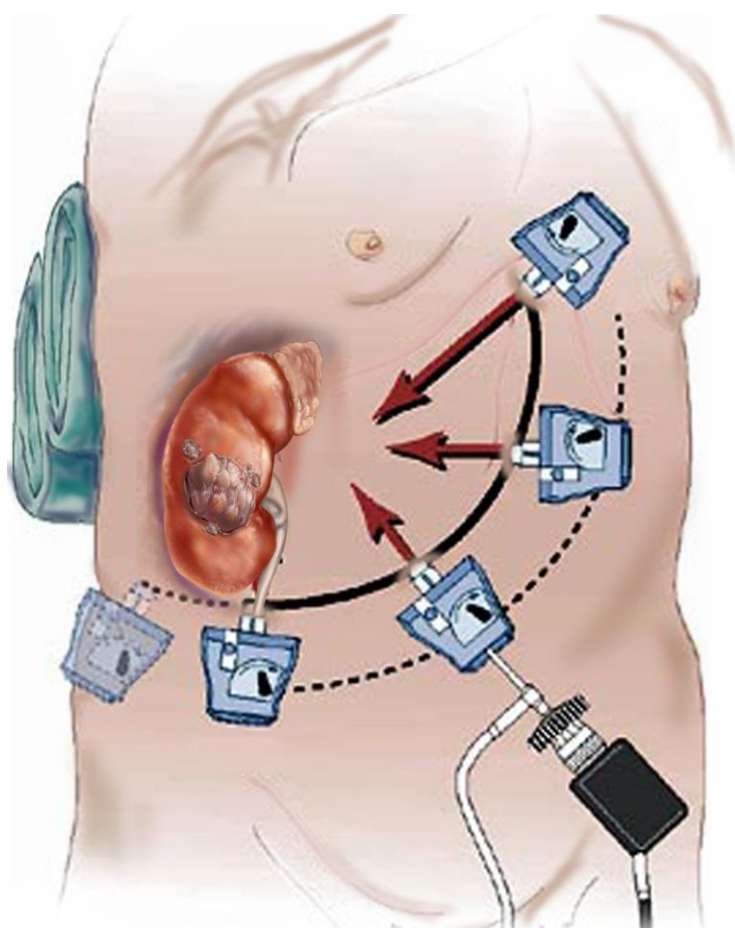


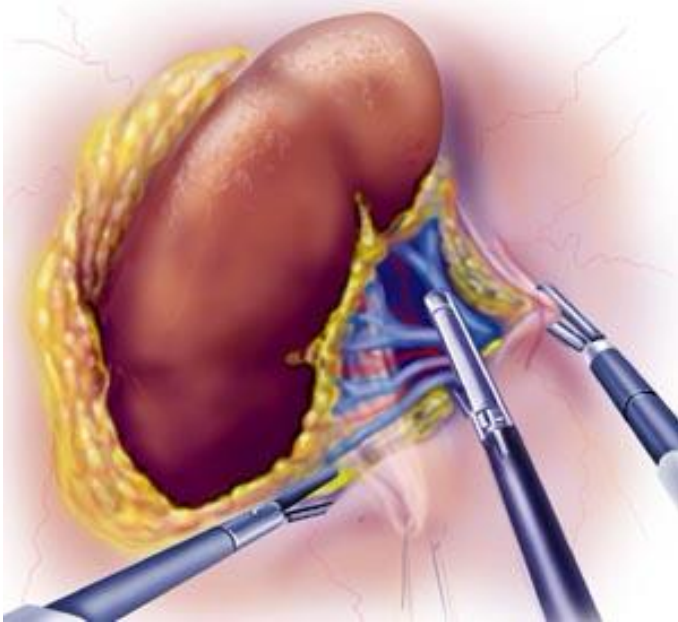


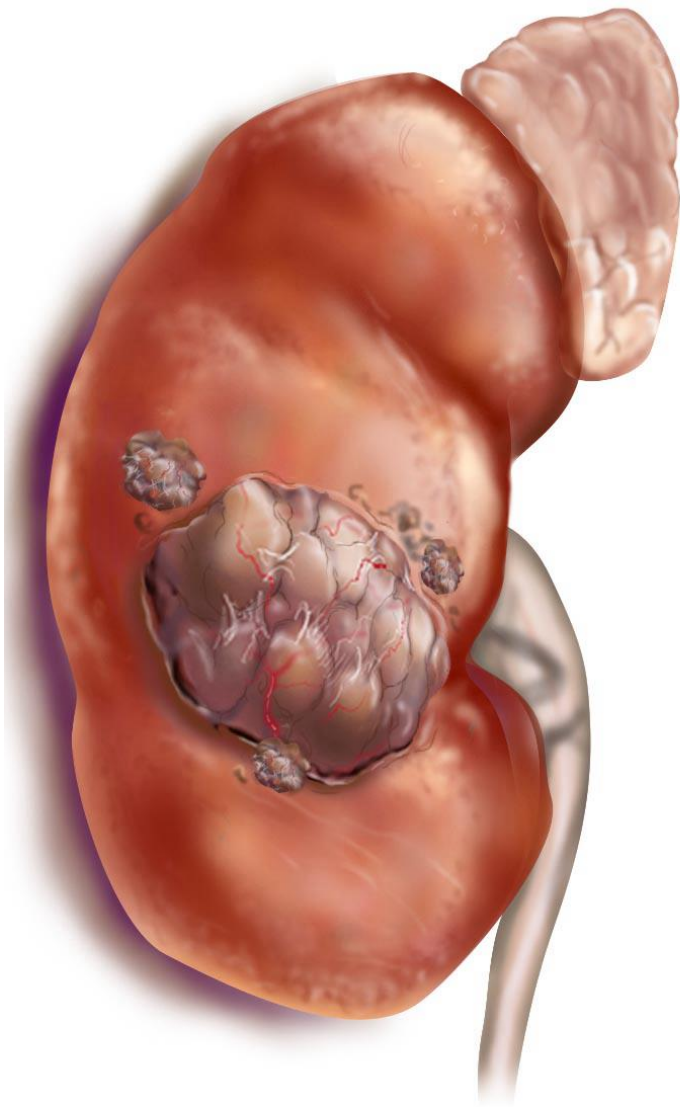


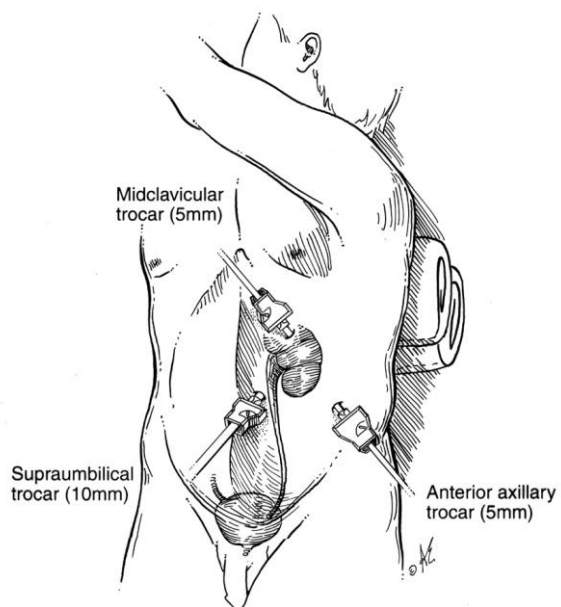
Kidney

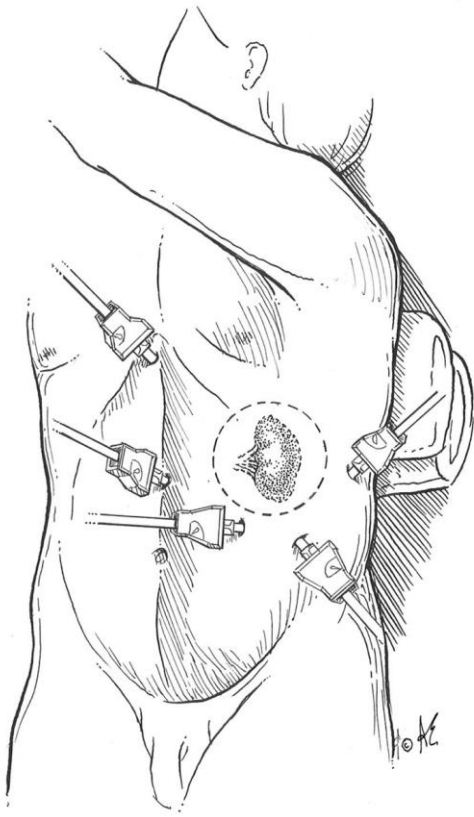


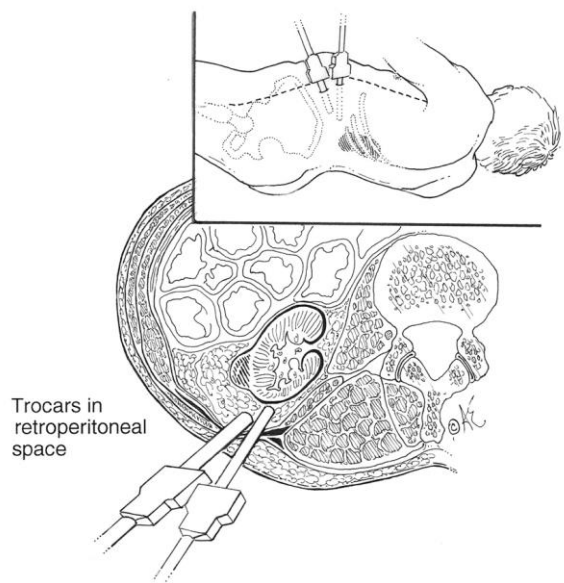


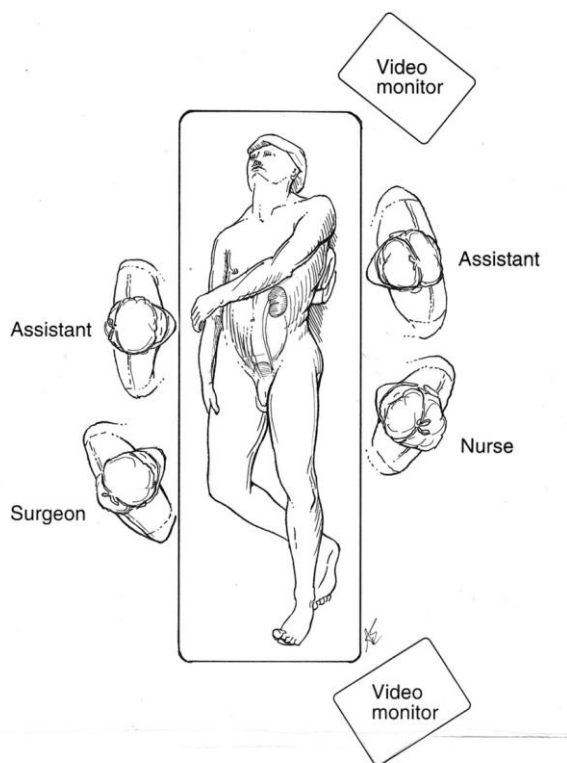


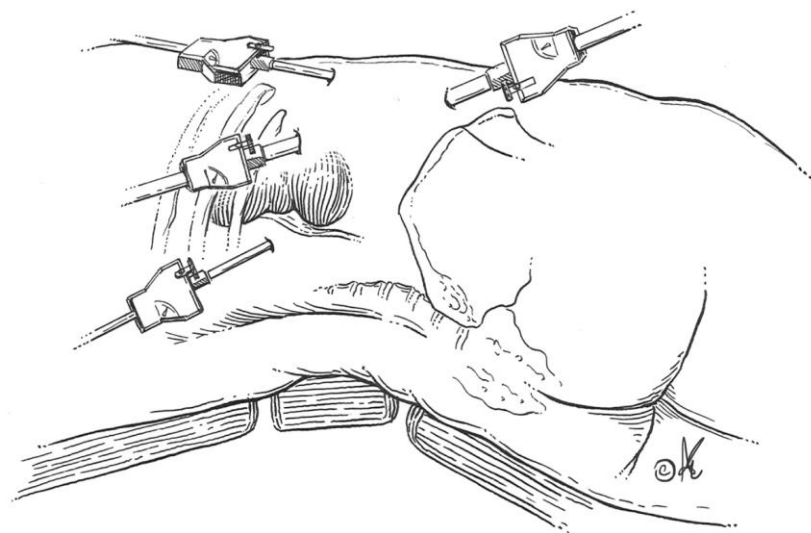


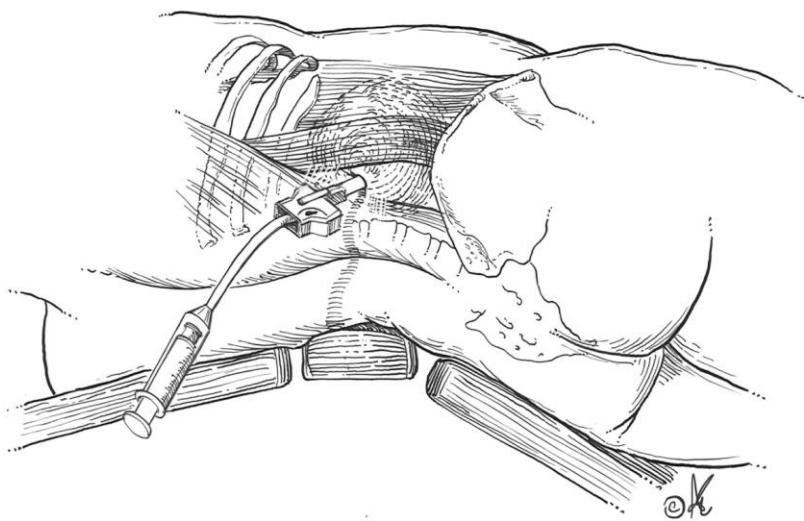
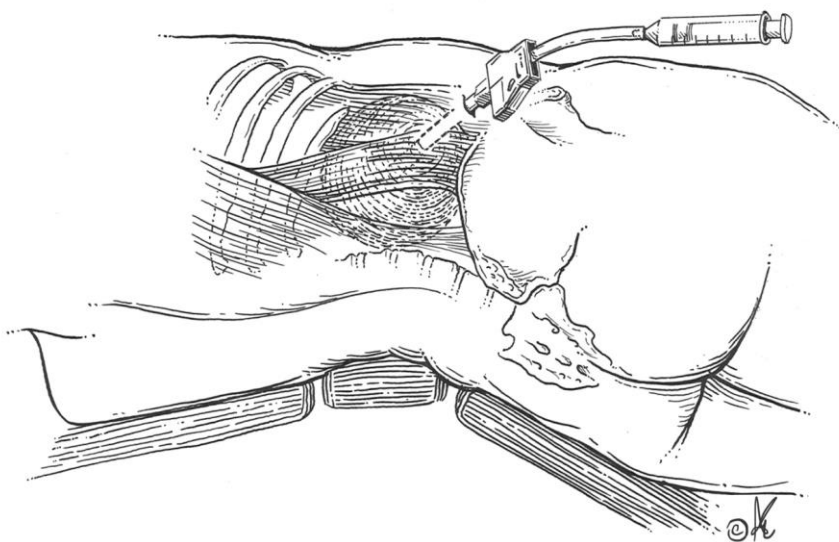


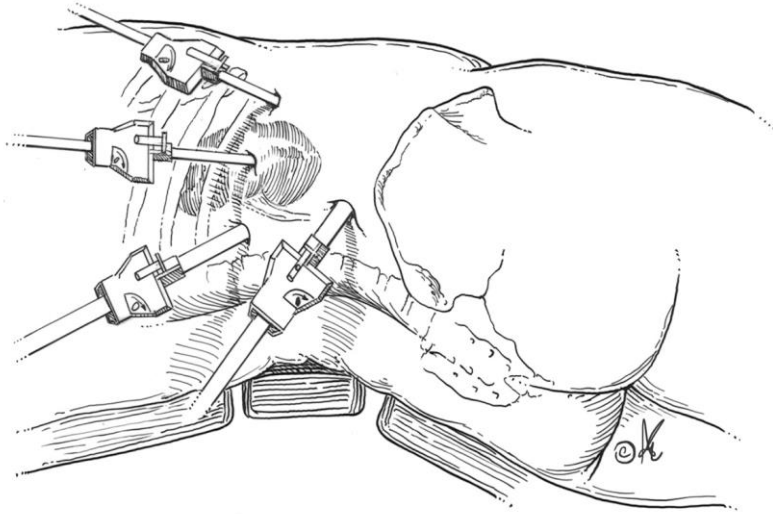




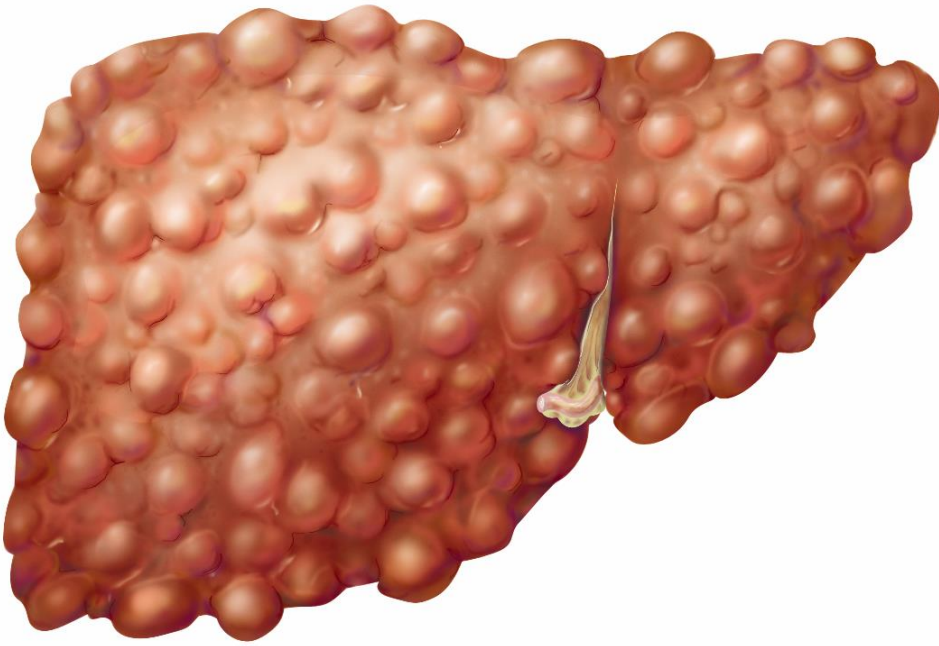


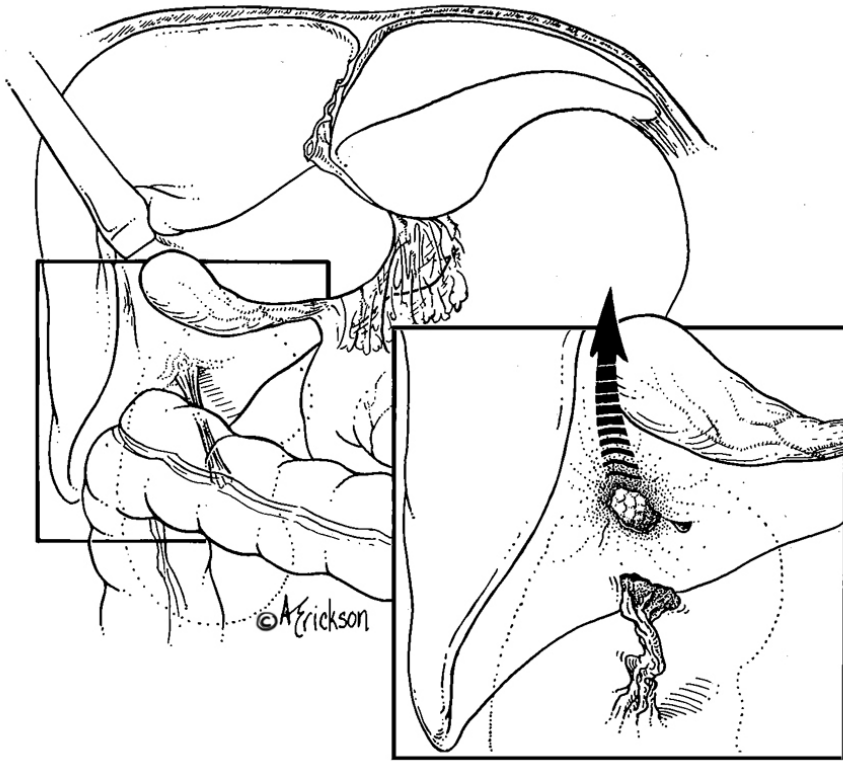




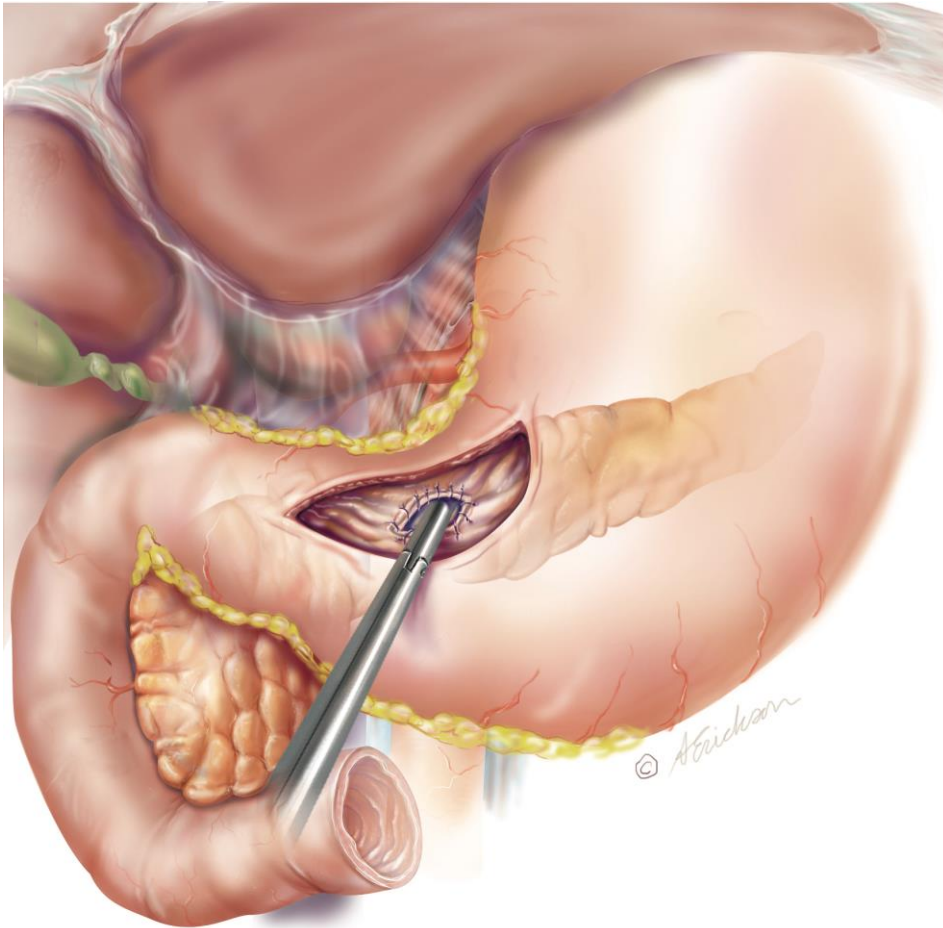


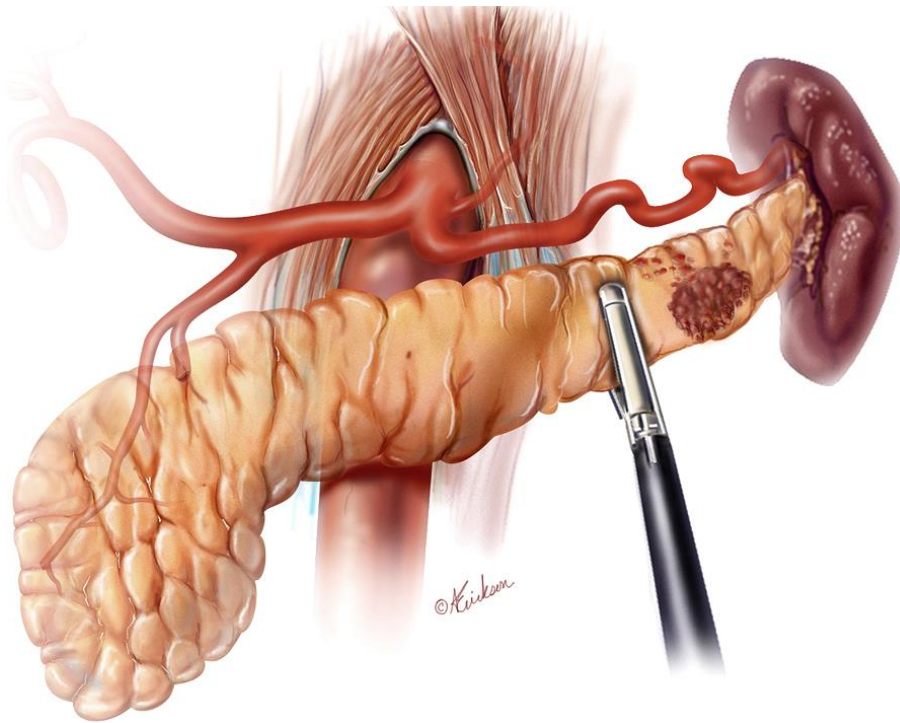
Liver

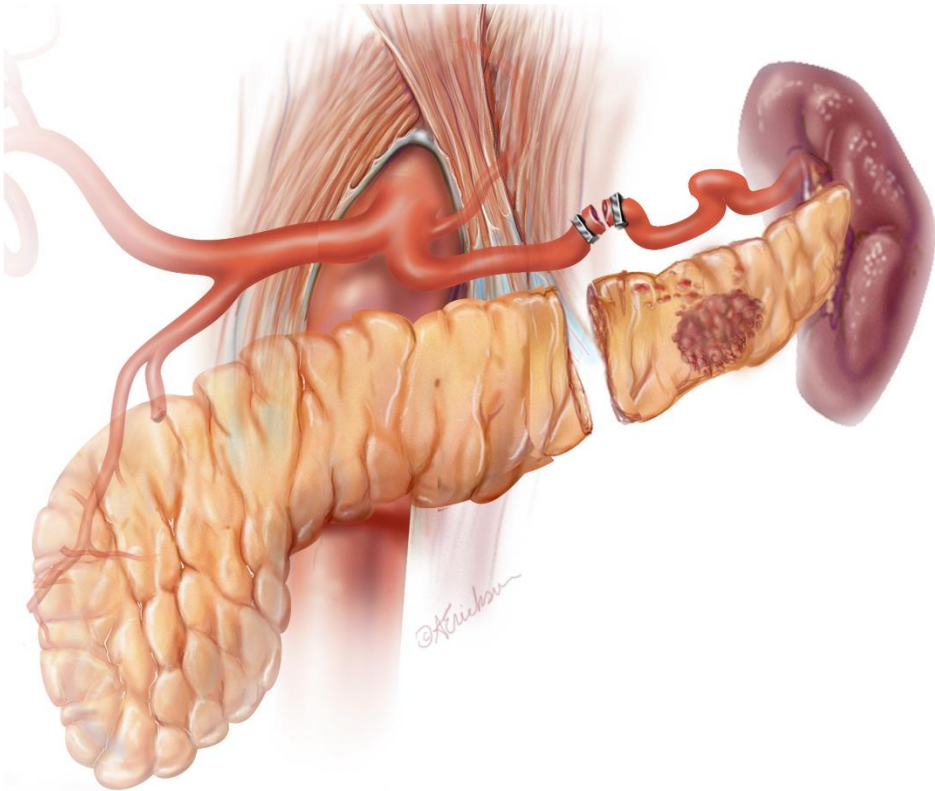


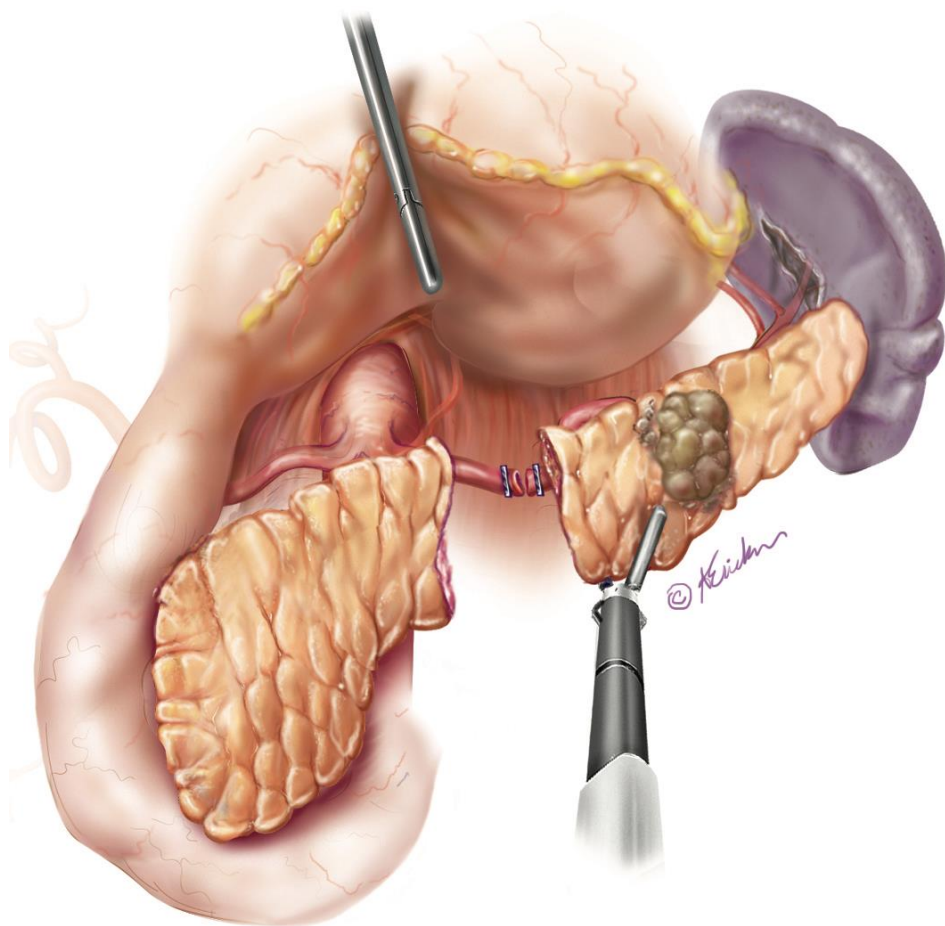


Pancreas

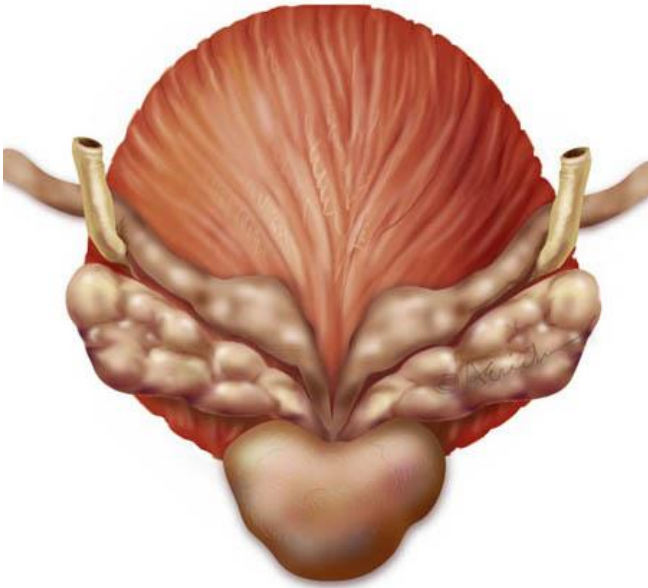


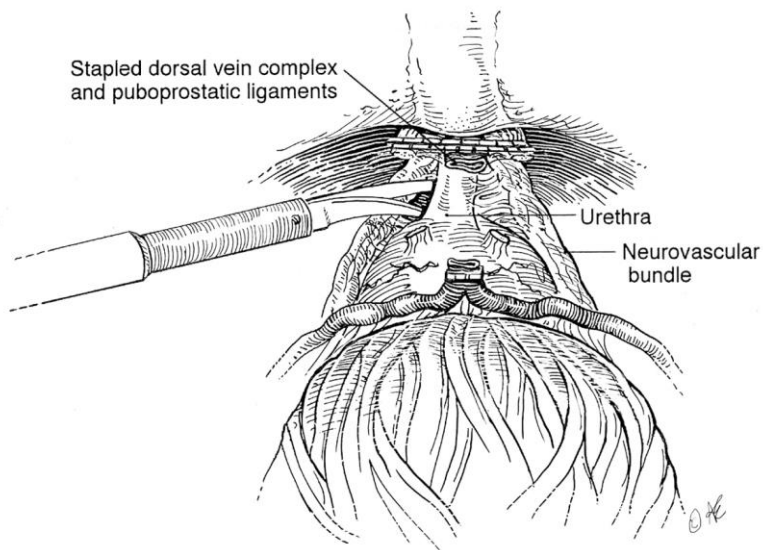
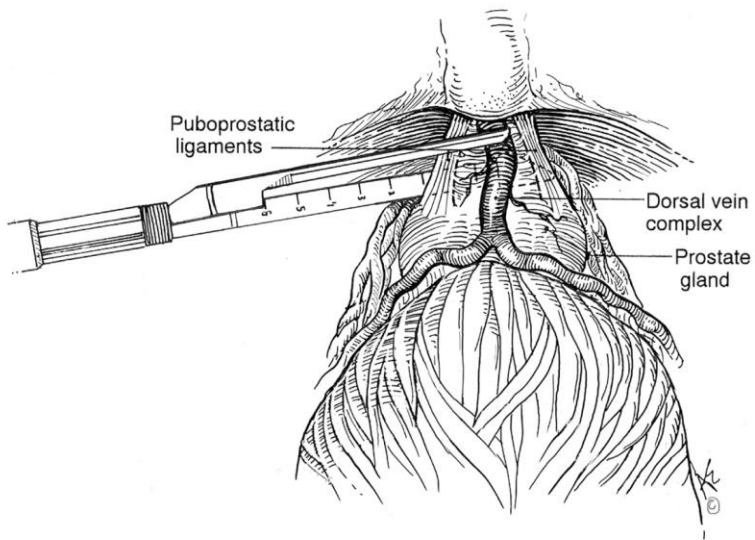


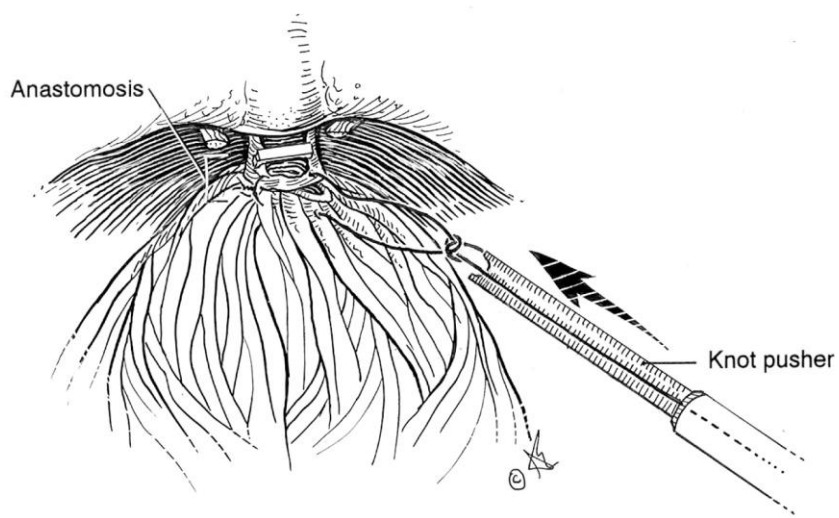
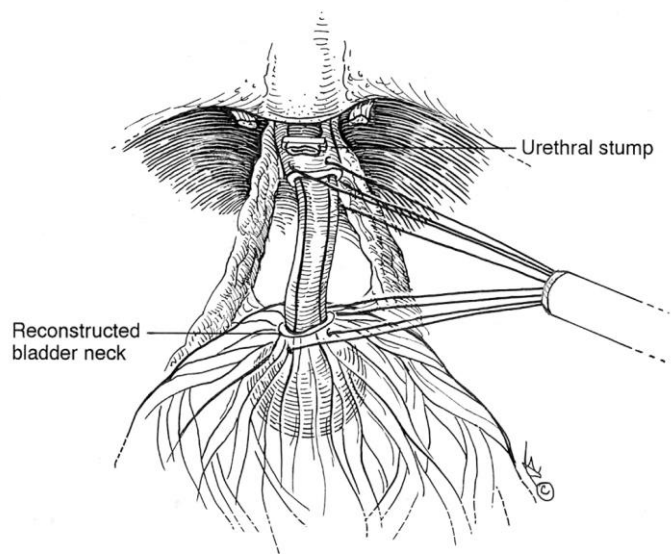




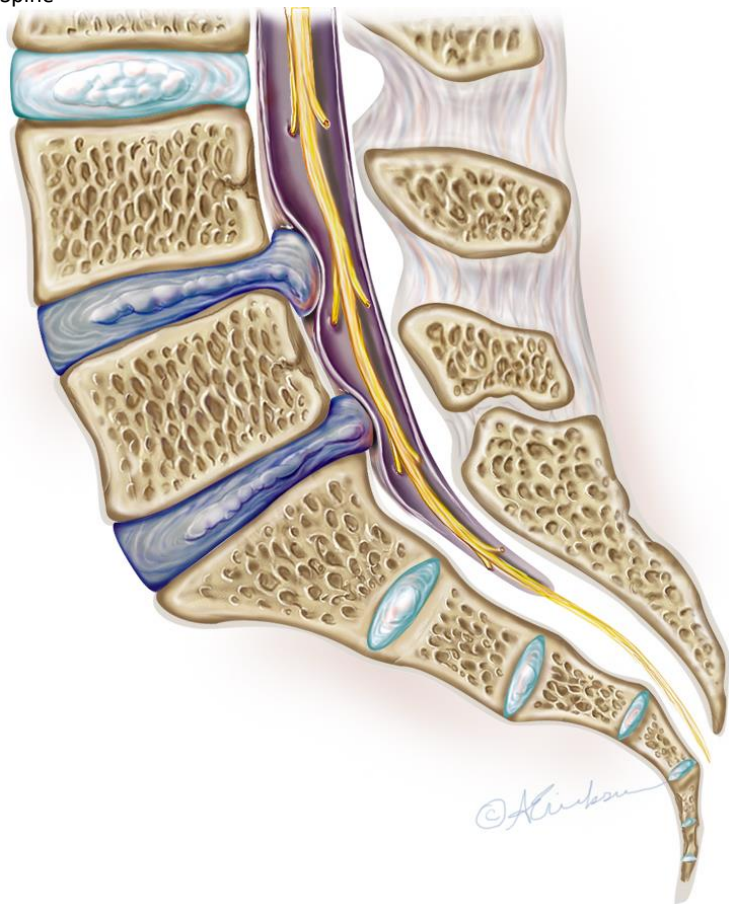
Prostate

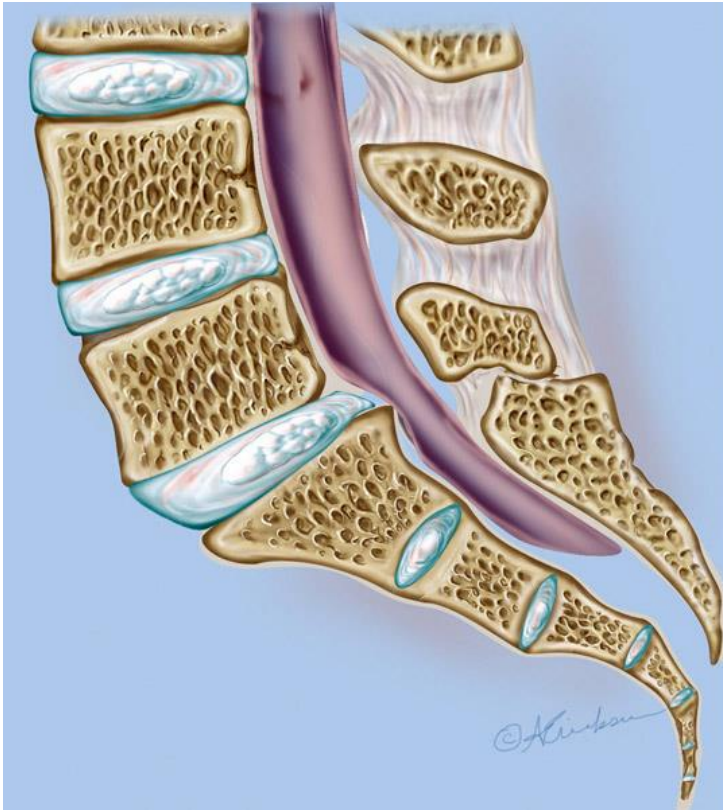


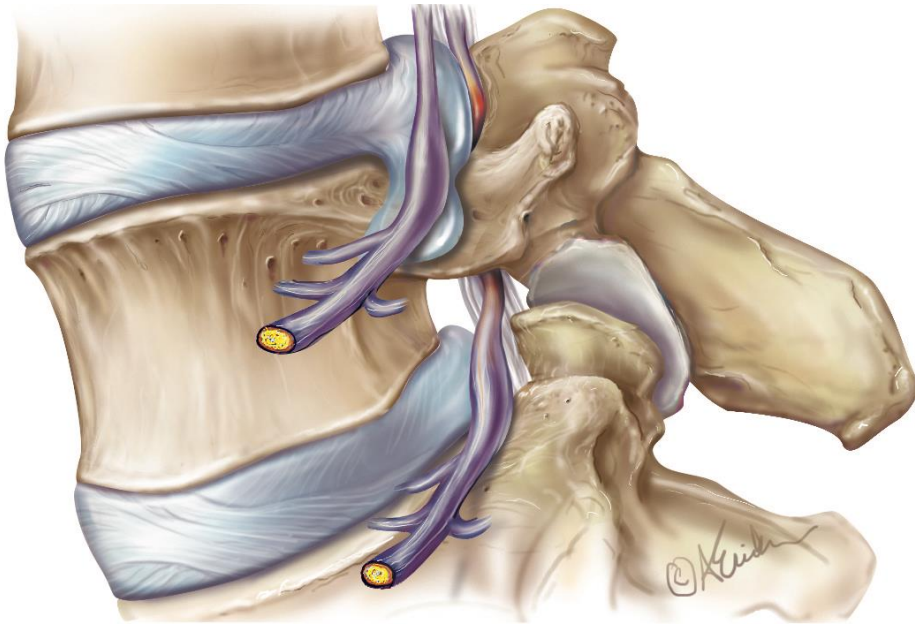




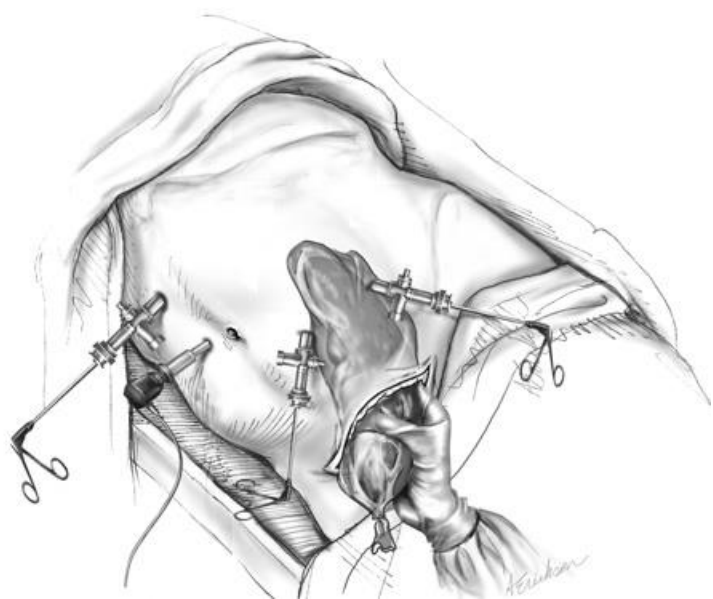
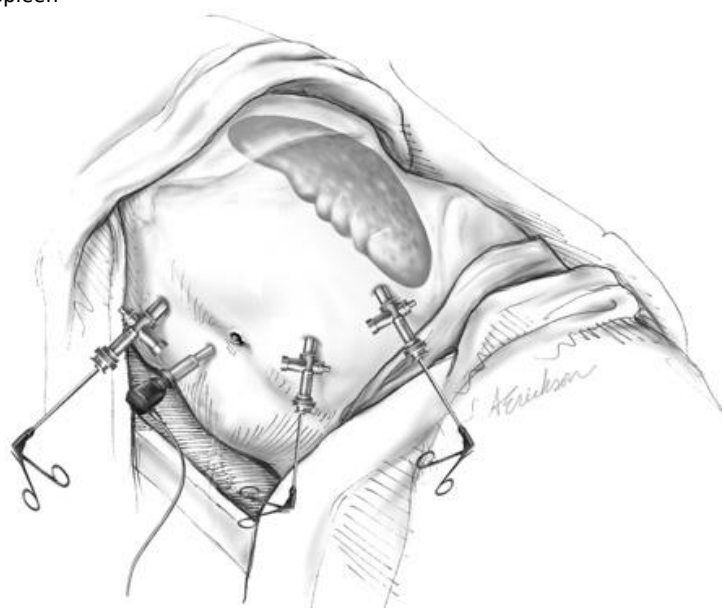
Spine

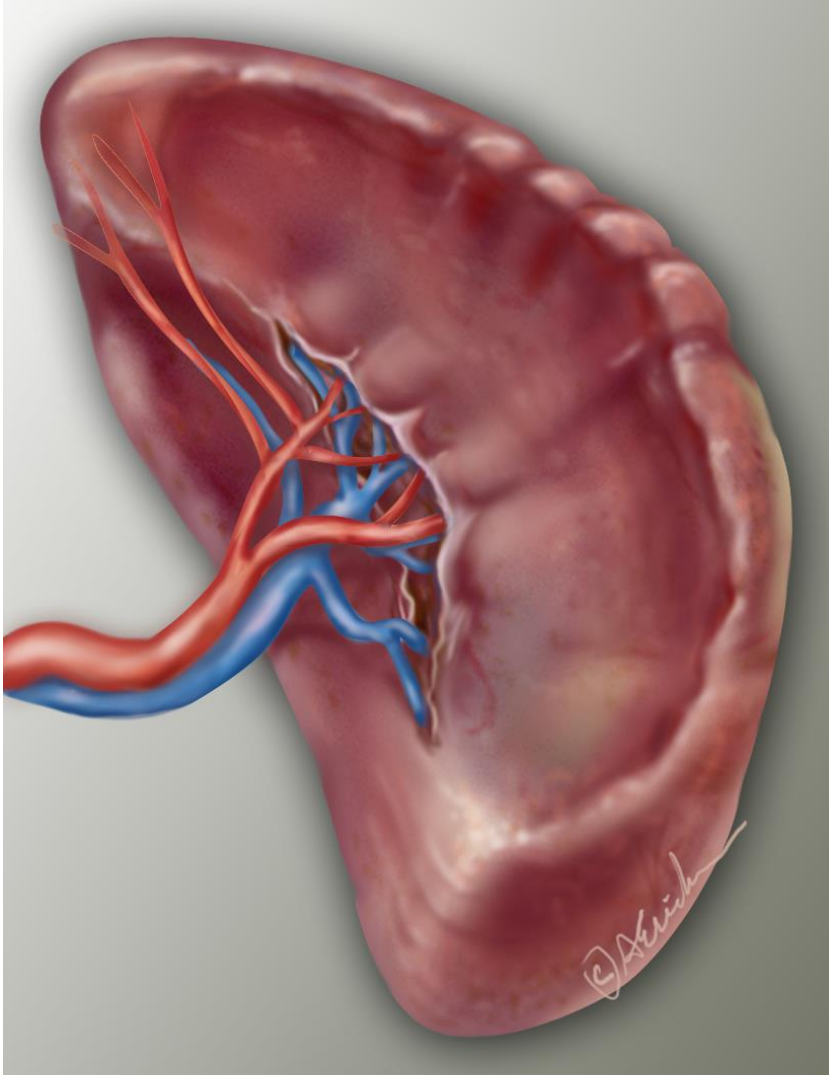


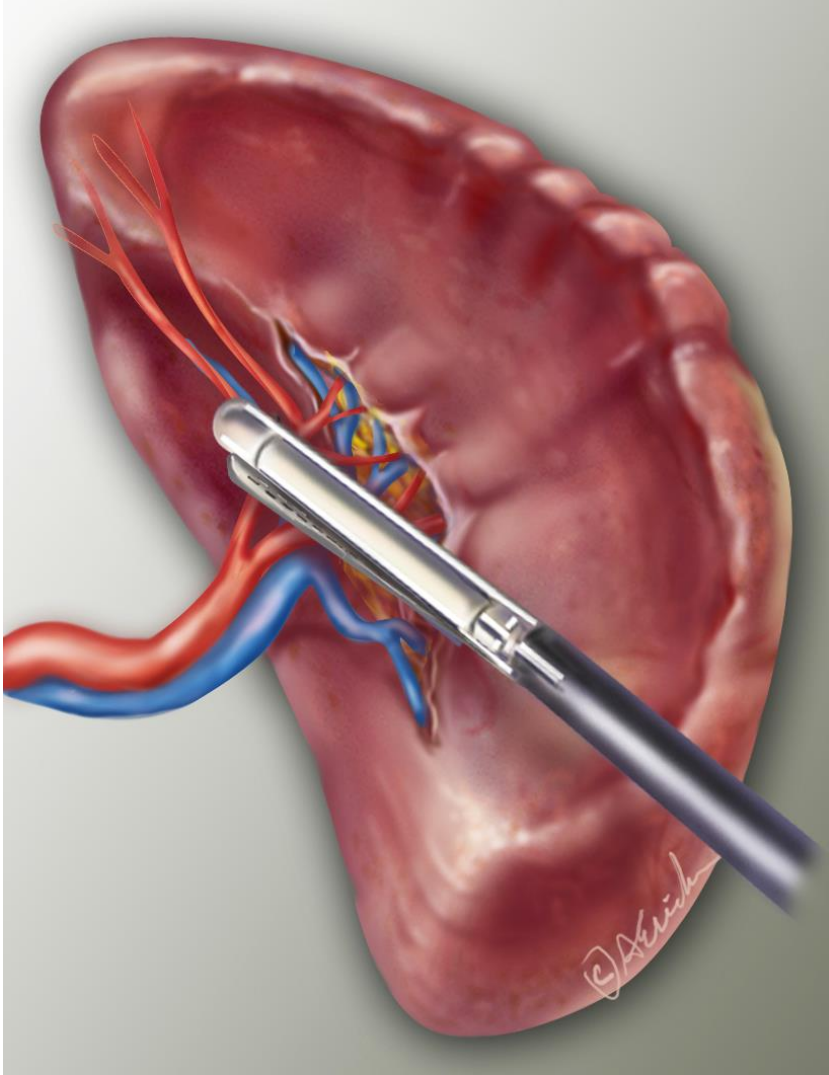




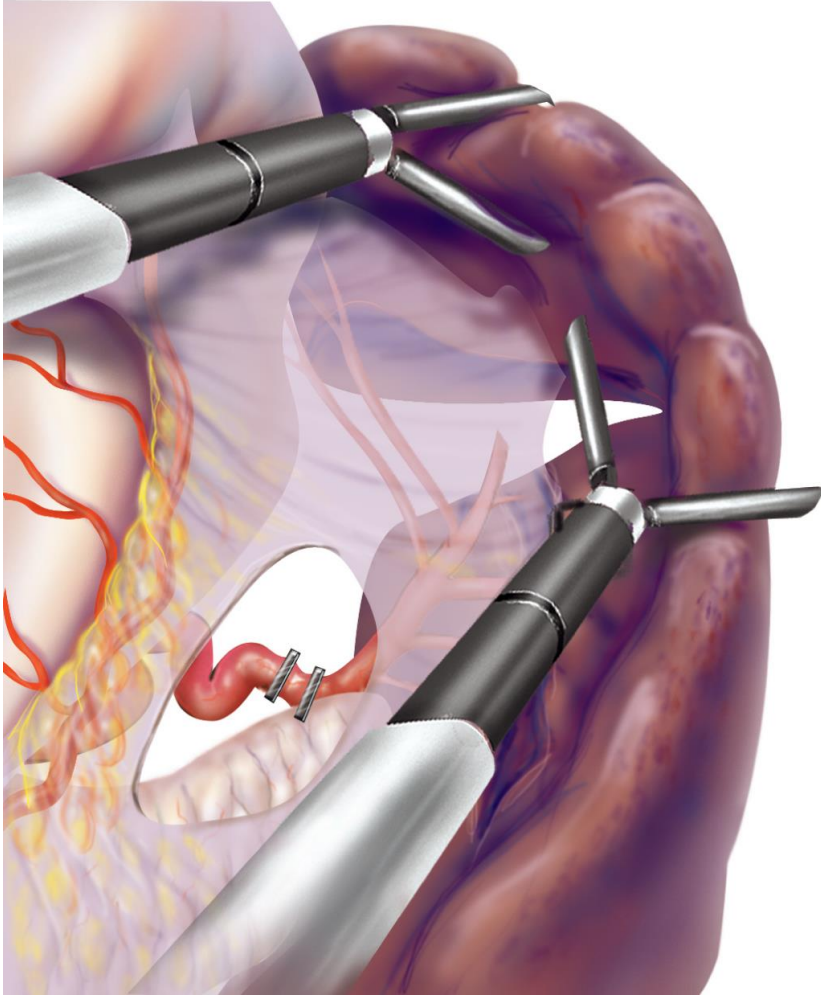
Spleen

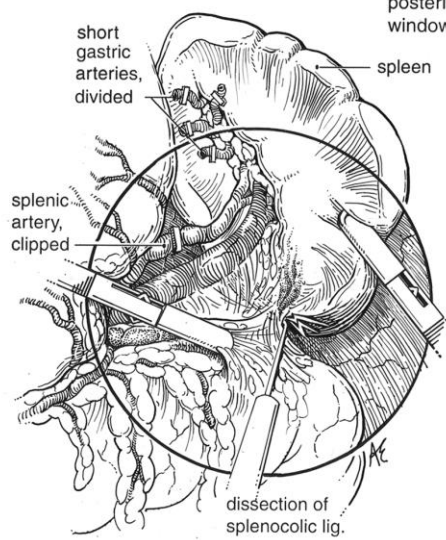
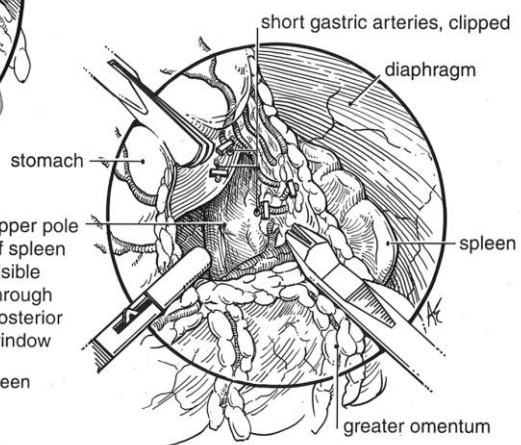
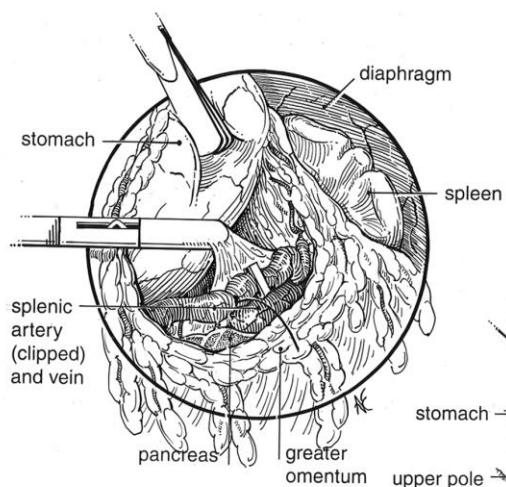


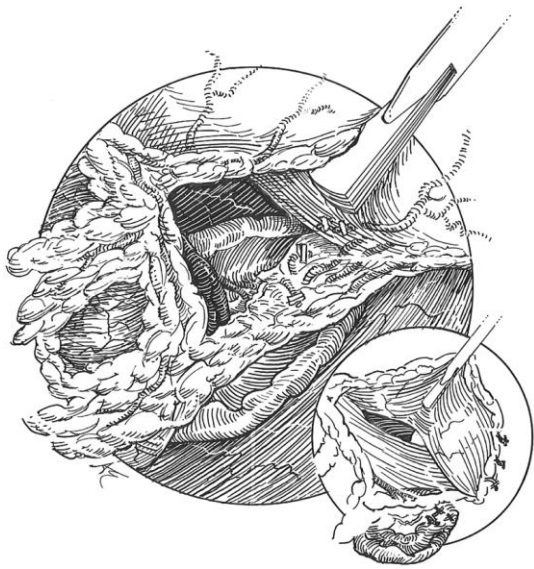
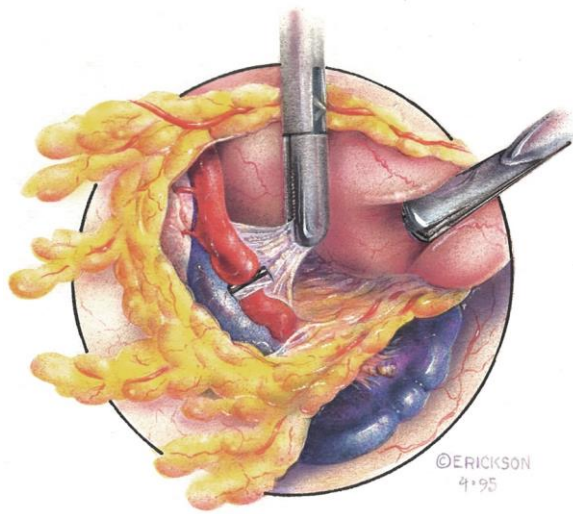


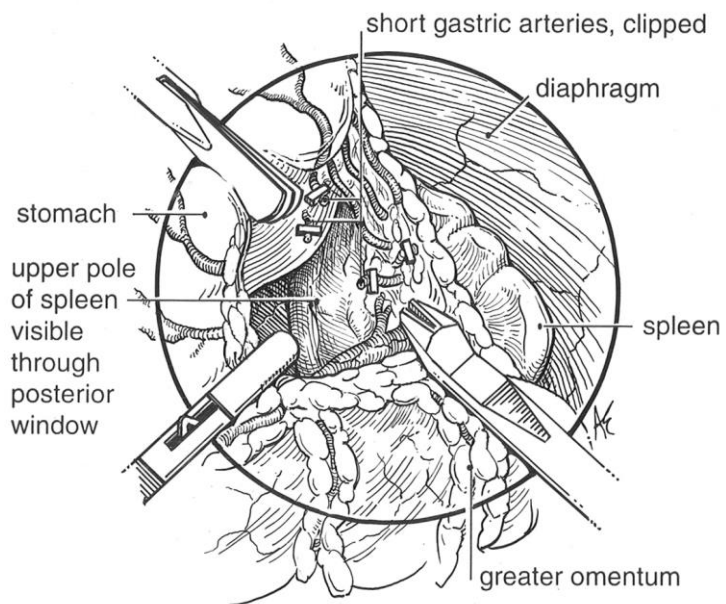
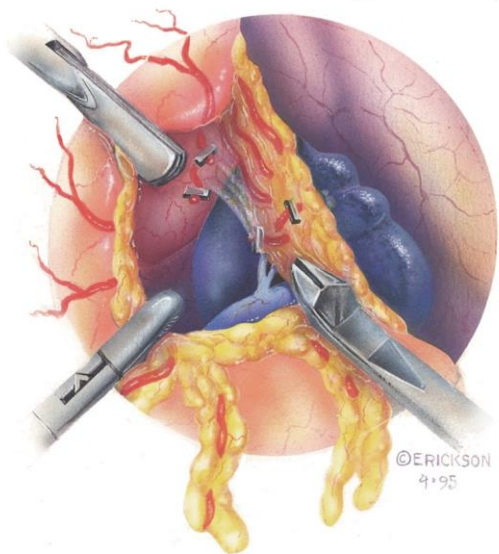


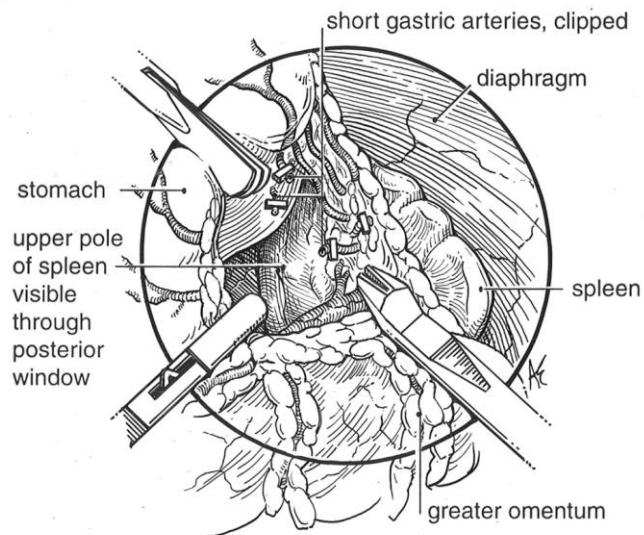
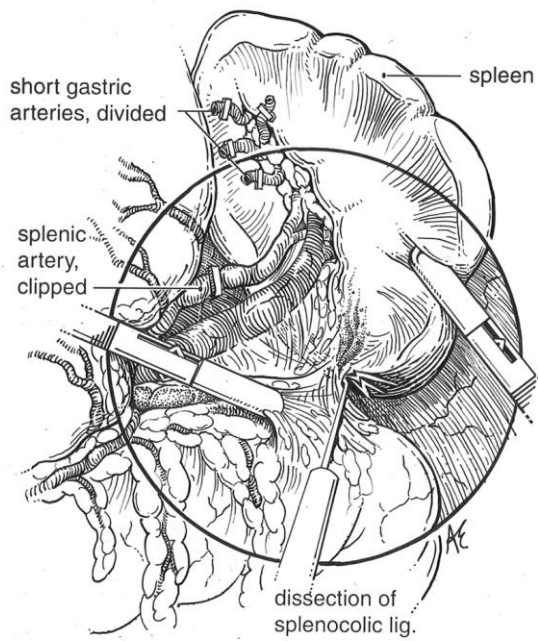
Division of enlarged spleen to gain access to the short gastric arteries

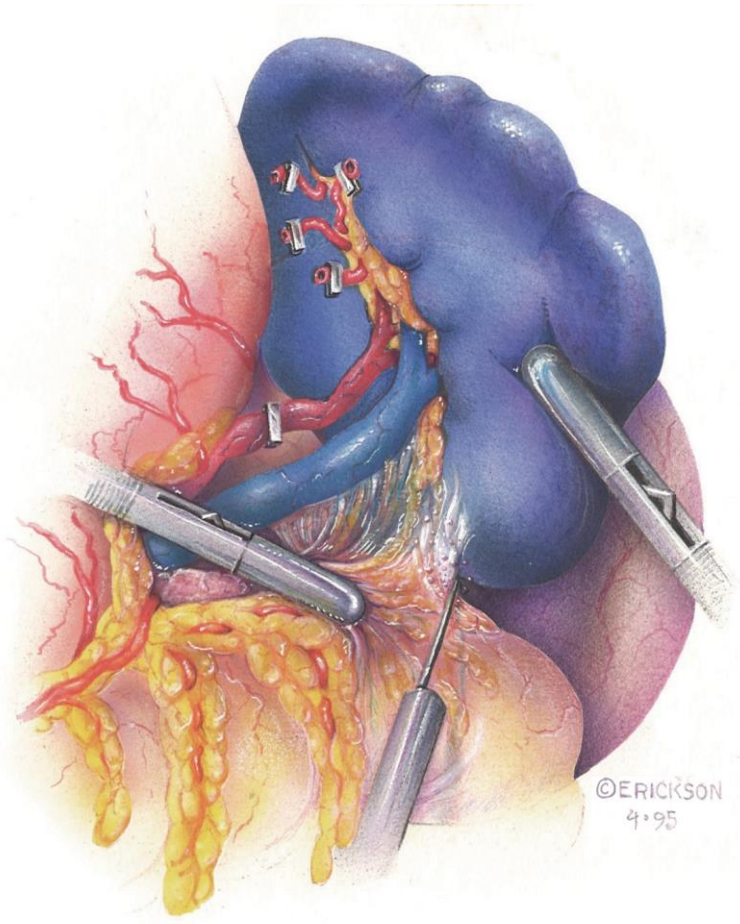


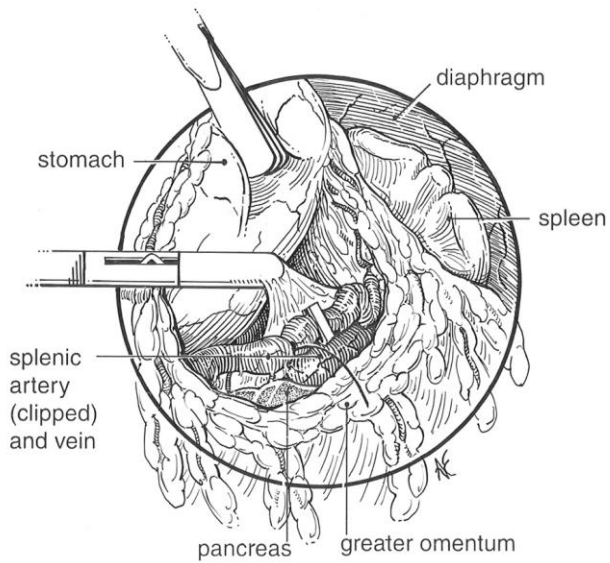
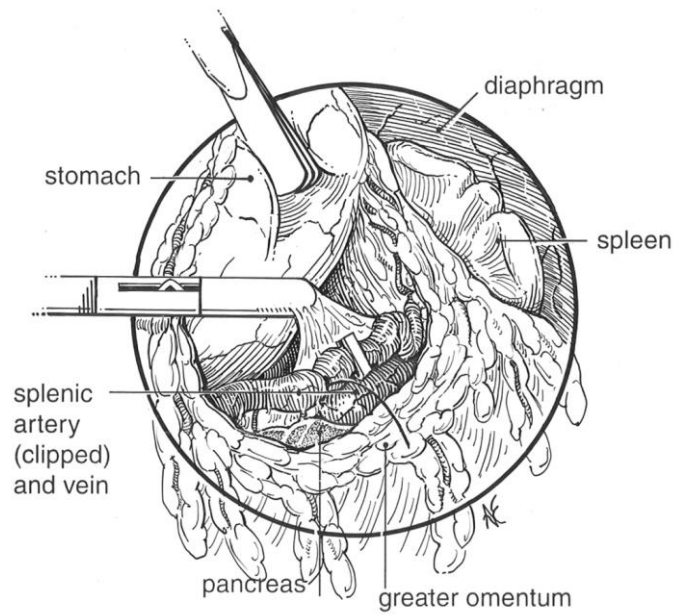




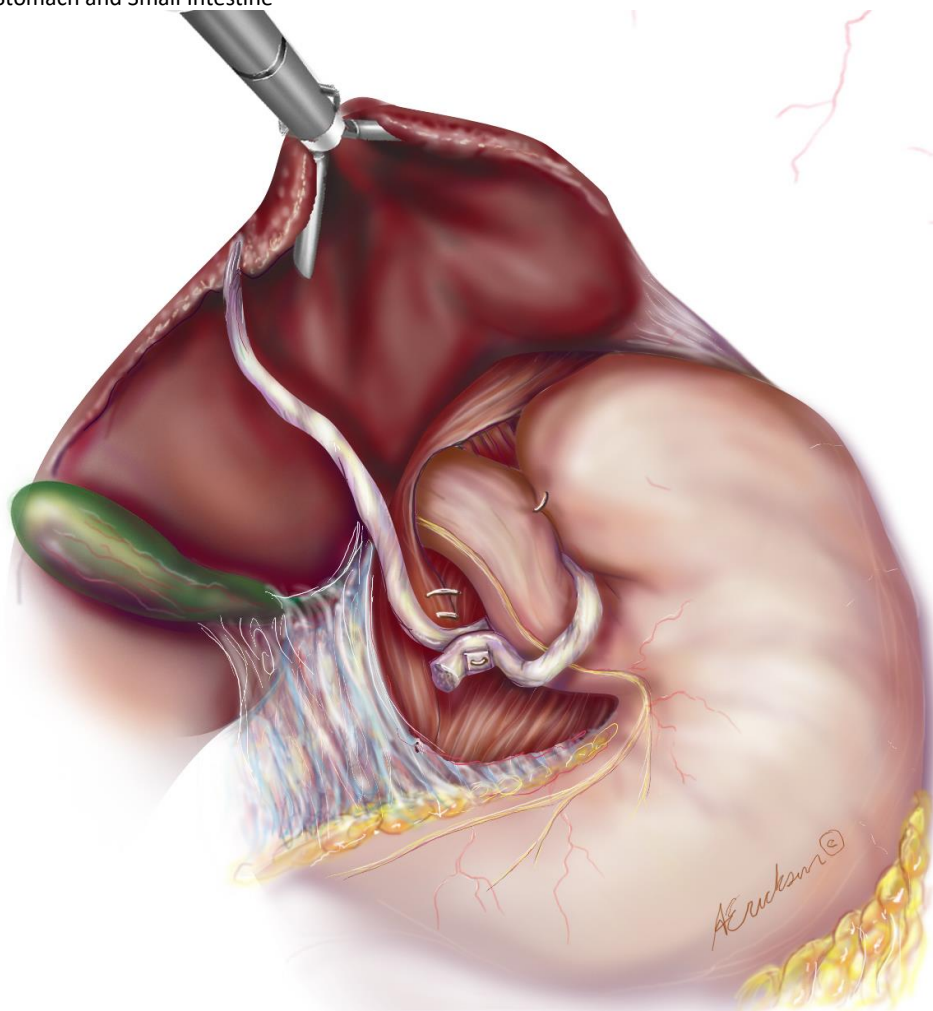








Stomach and Small Intestine





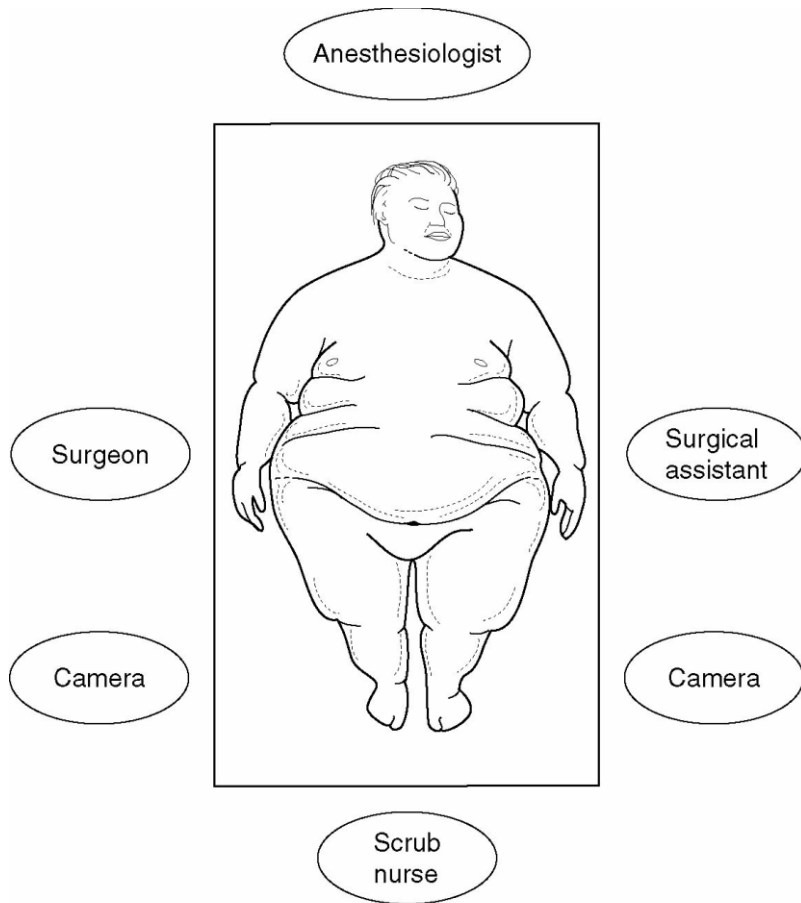


Figure 1. Patient position.

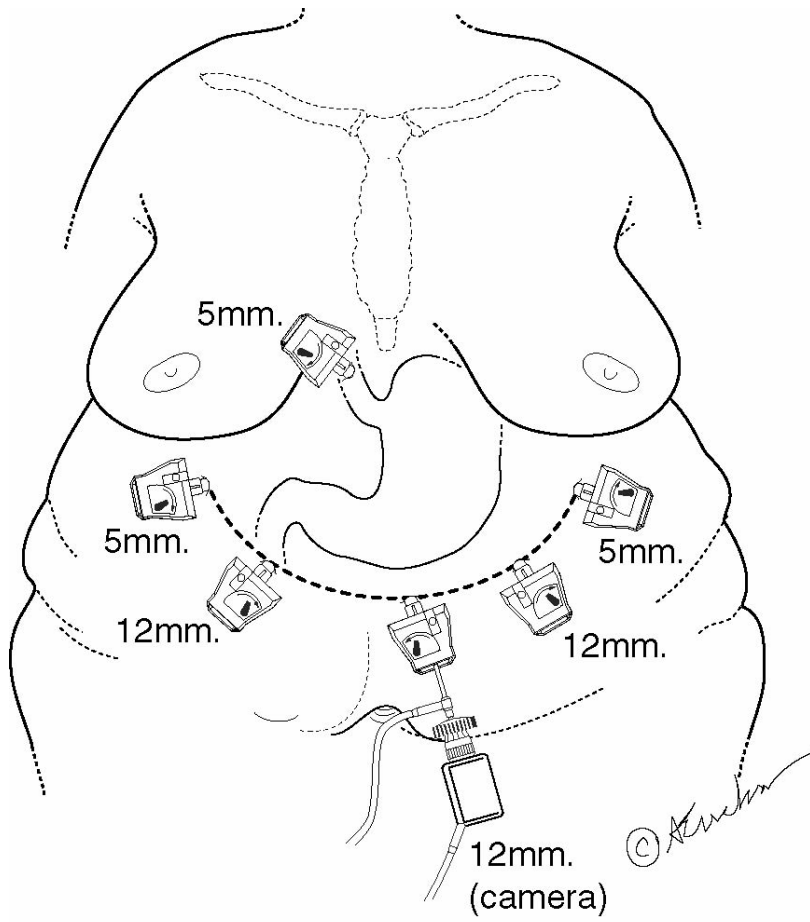


Figure 2. Trocar placement.

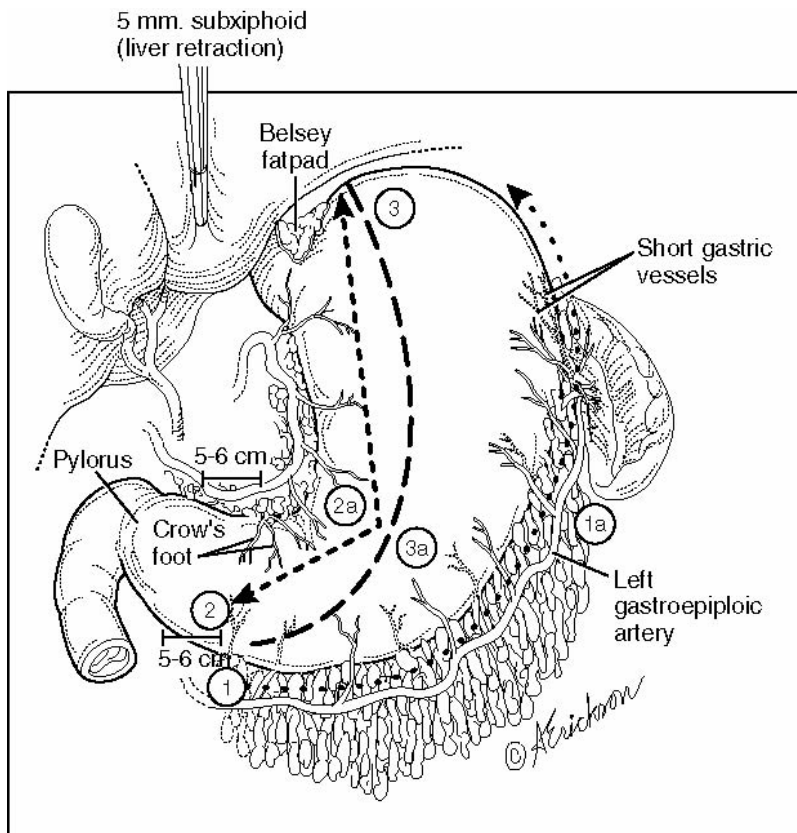


Figure 3. Surgical strategy.

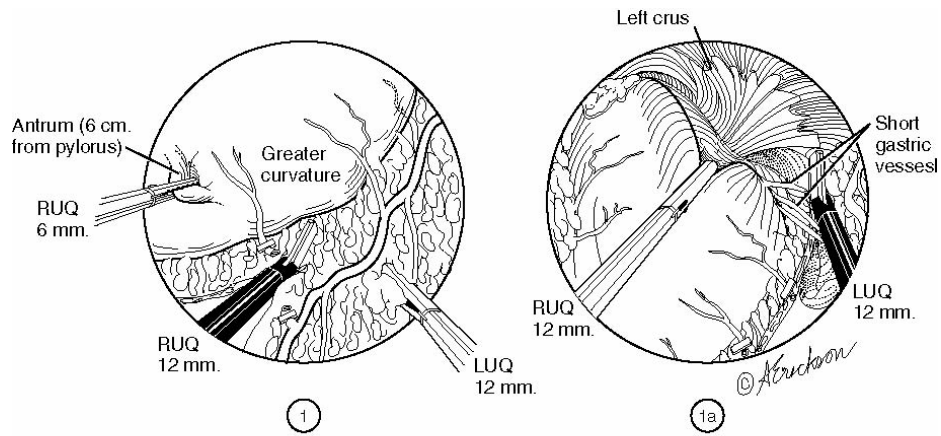


Figure 4. Dissection of the gastroepiploic.

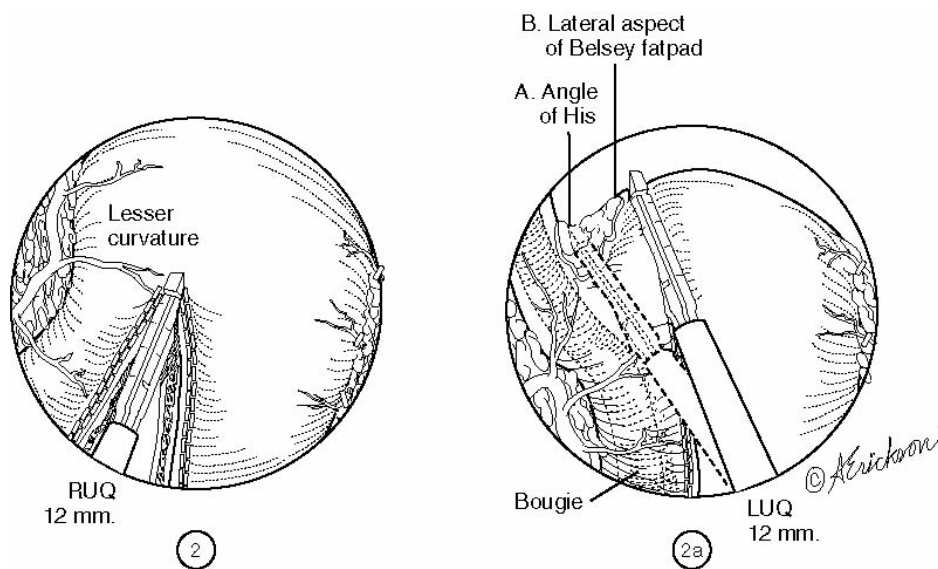
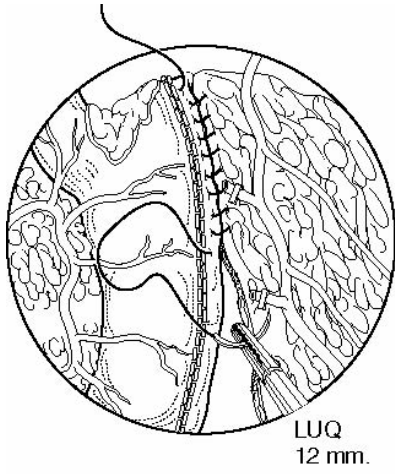
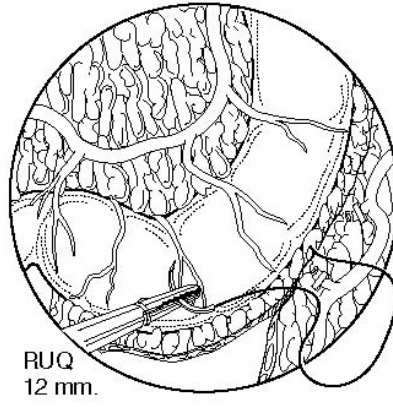


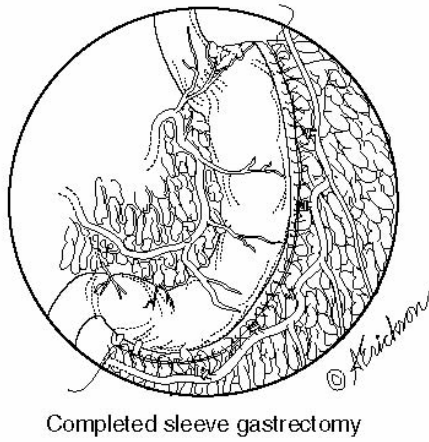
Figure 5. Creation of gastric sleeve.



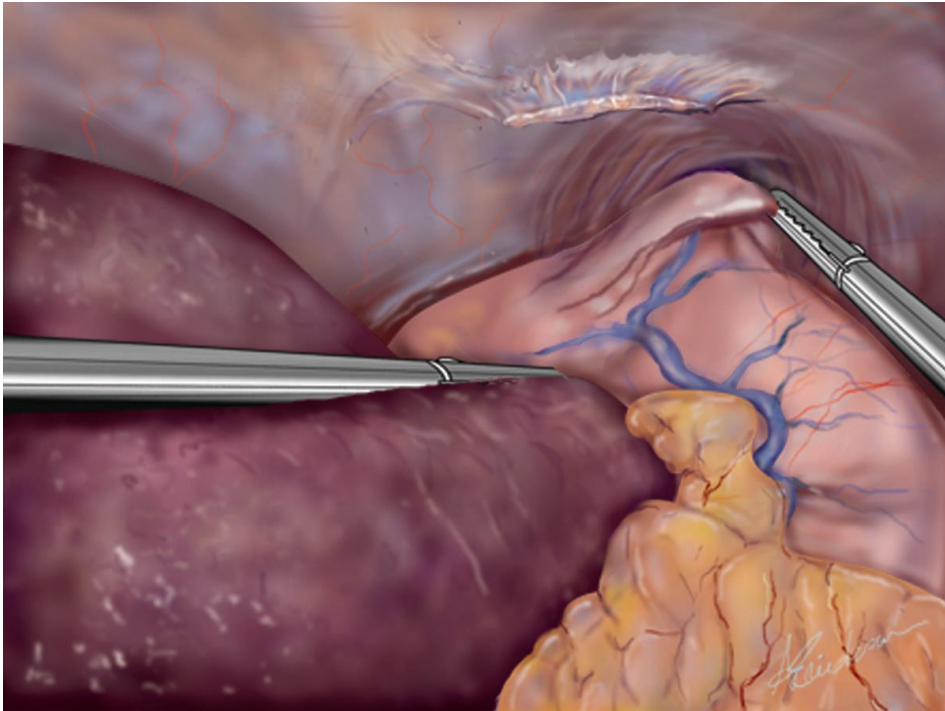
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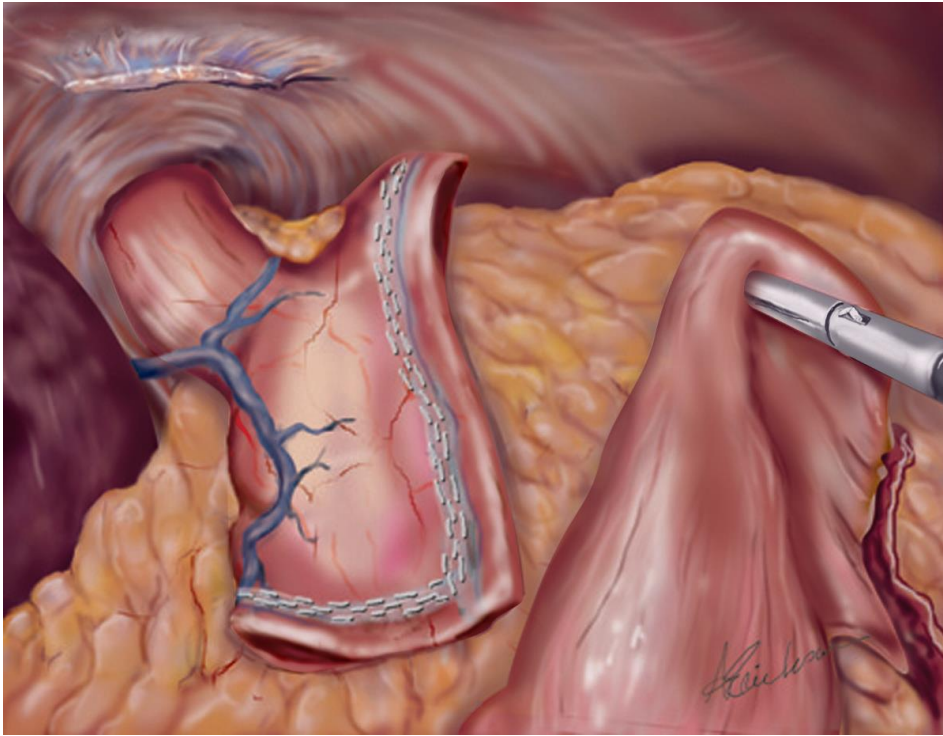


3b

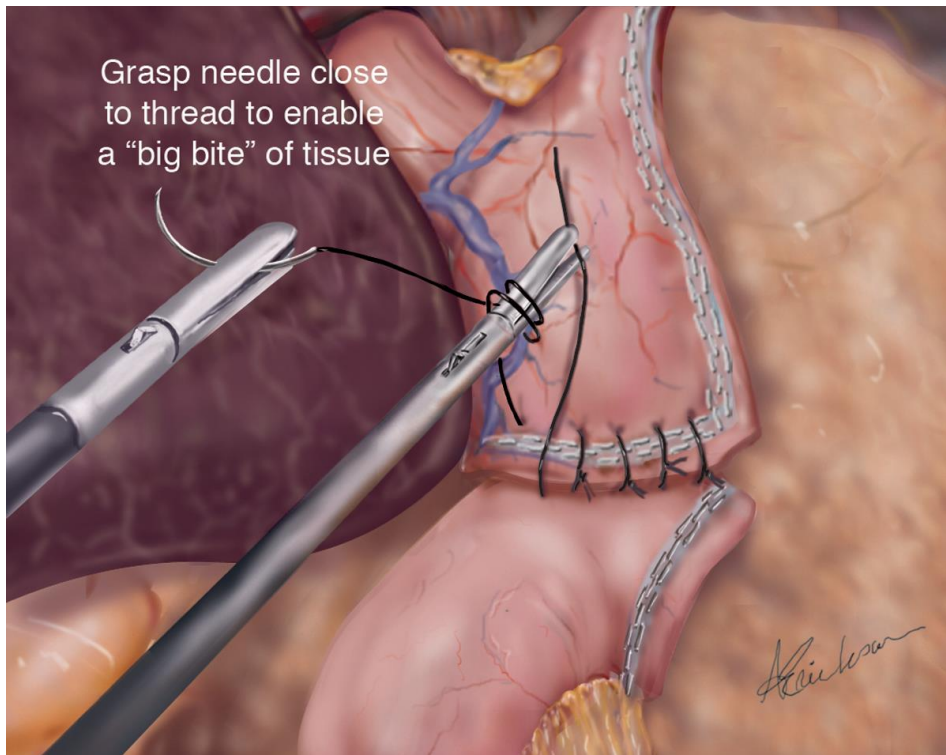


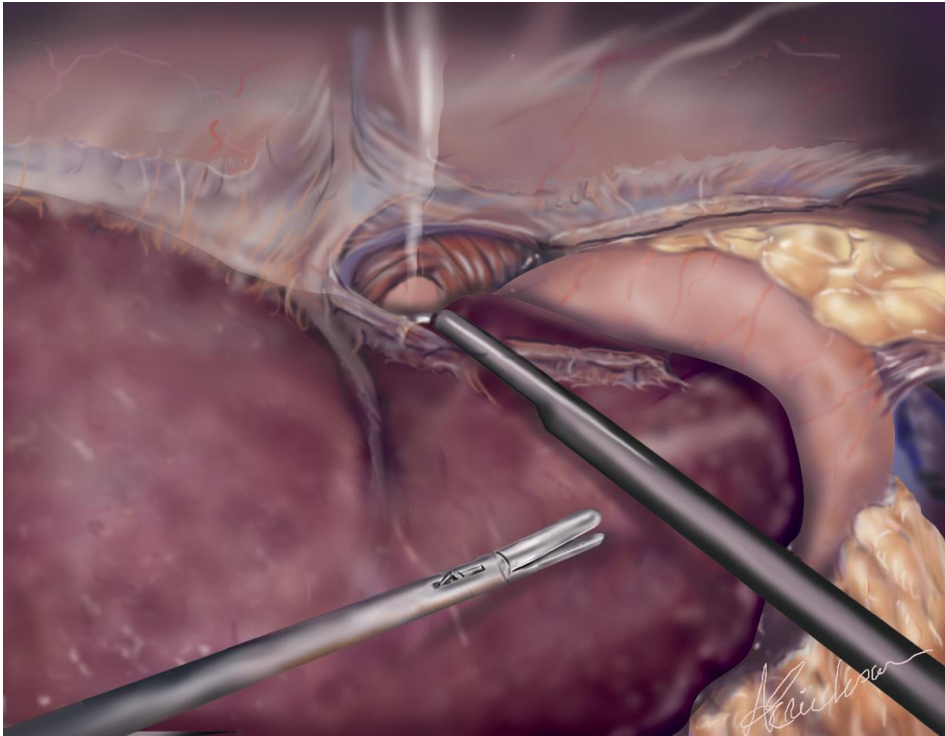
3c

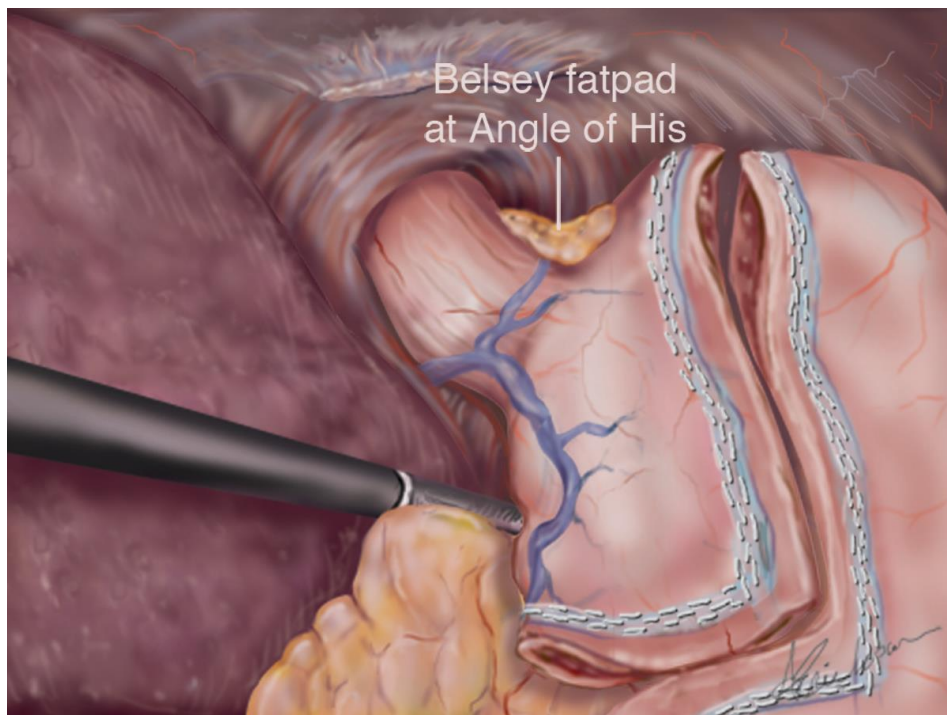


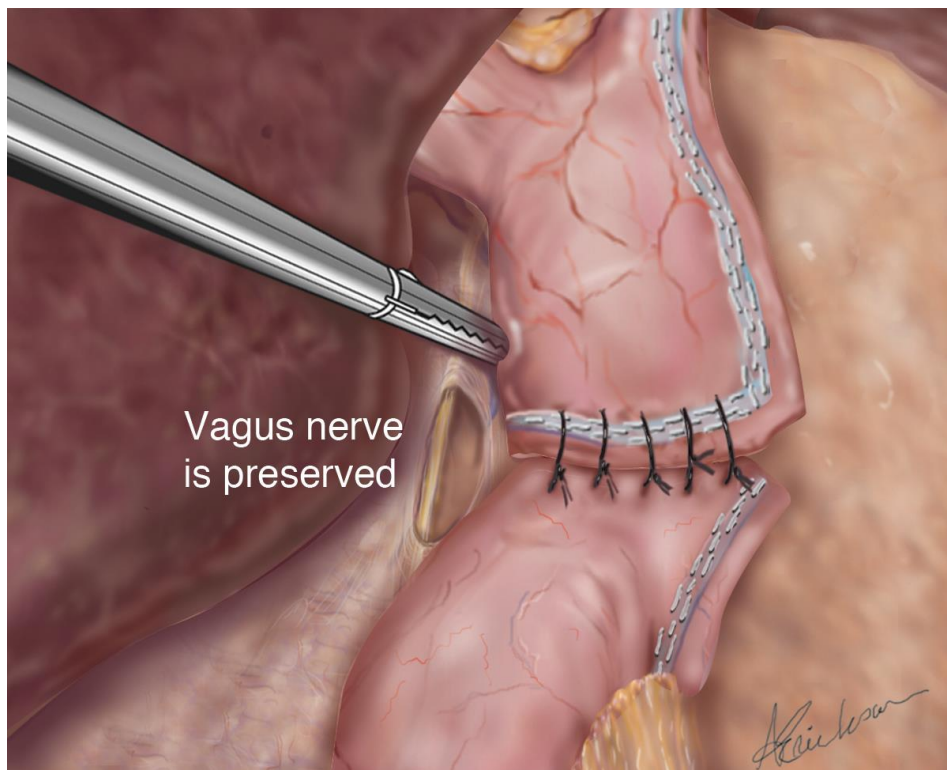


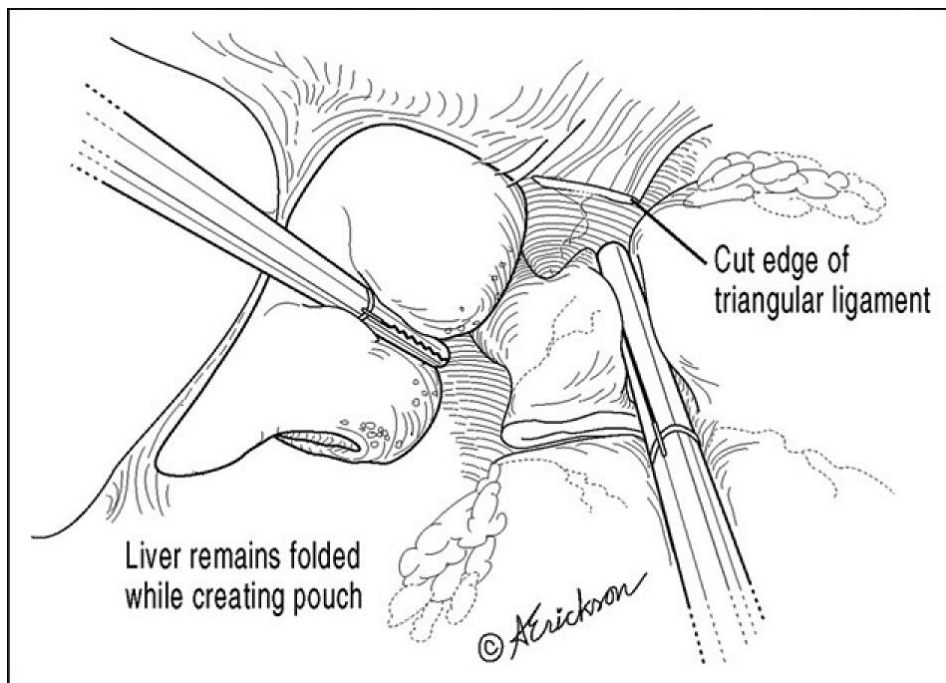
Grasp needle close
to thread to enable
a "big bite" of tissue

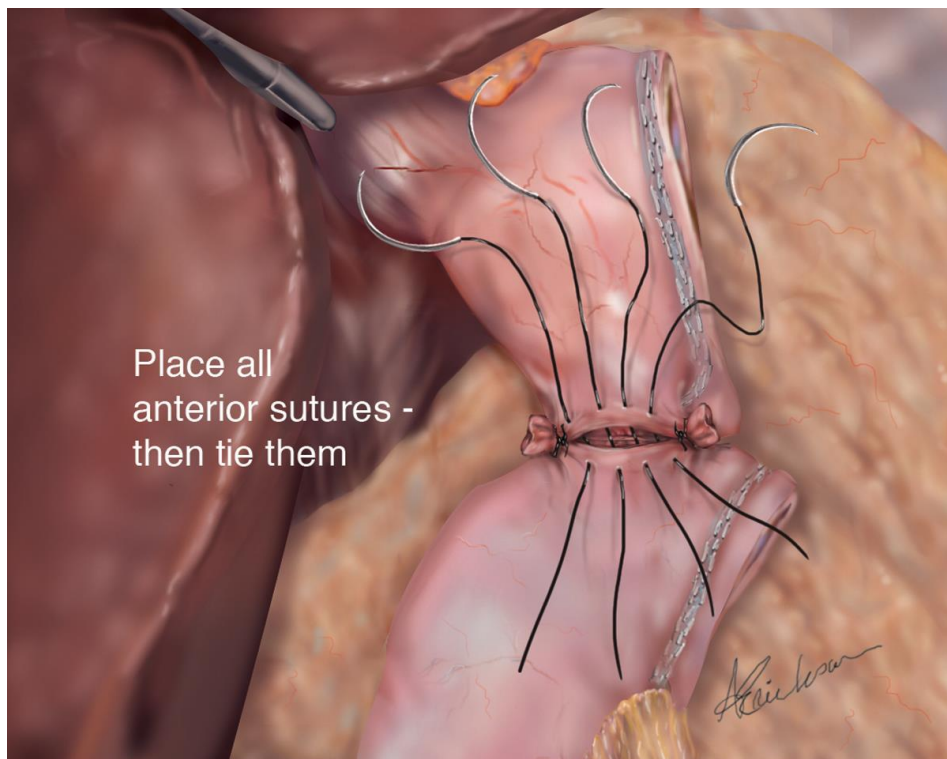




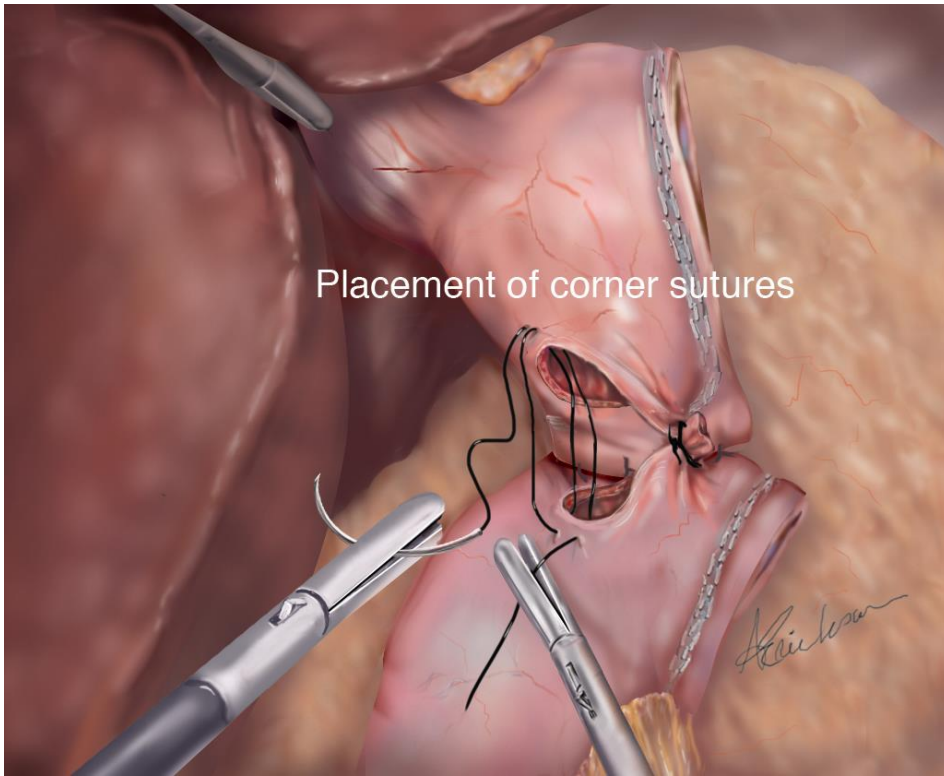


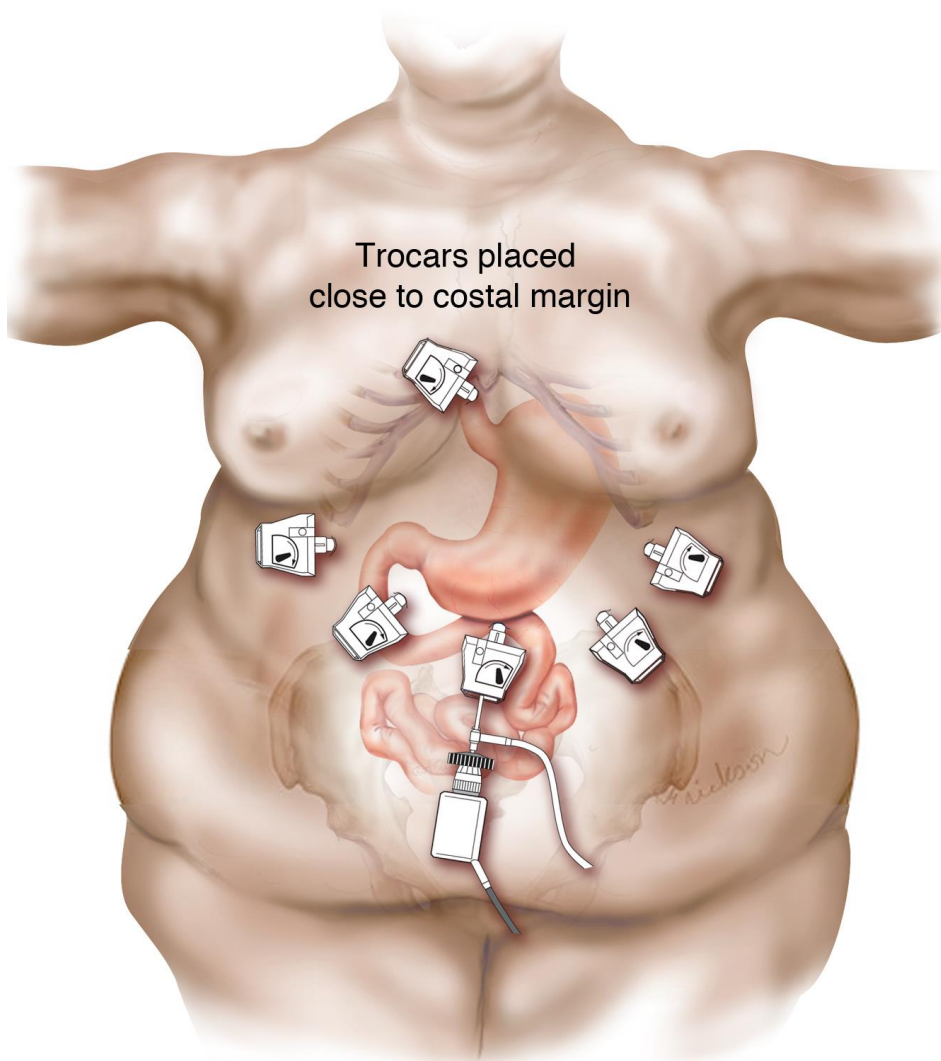


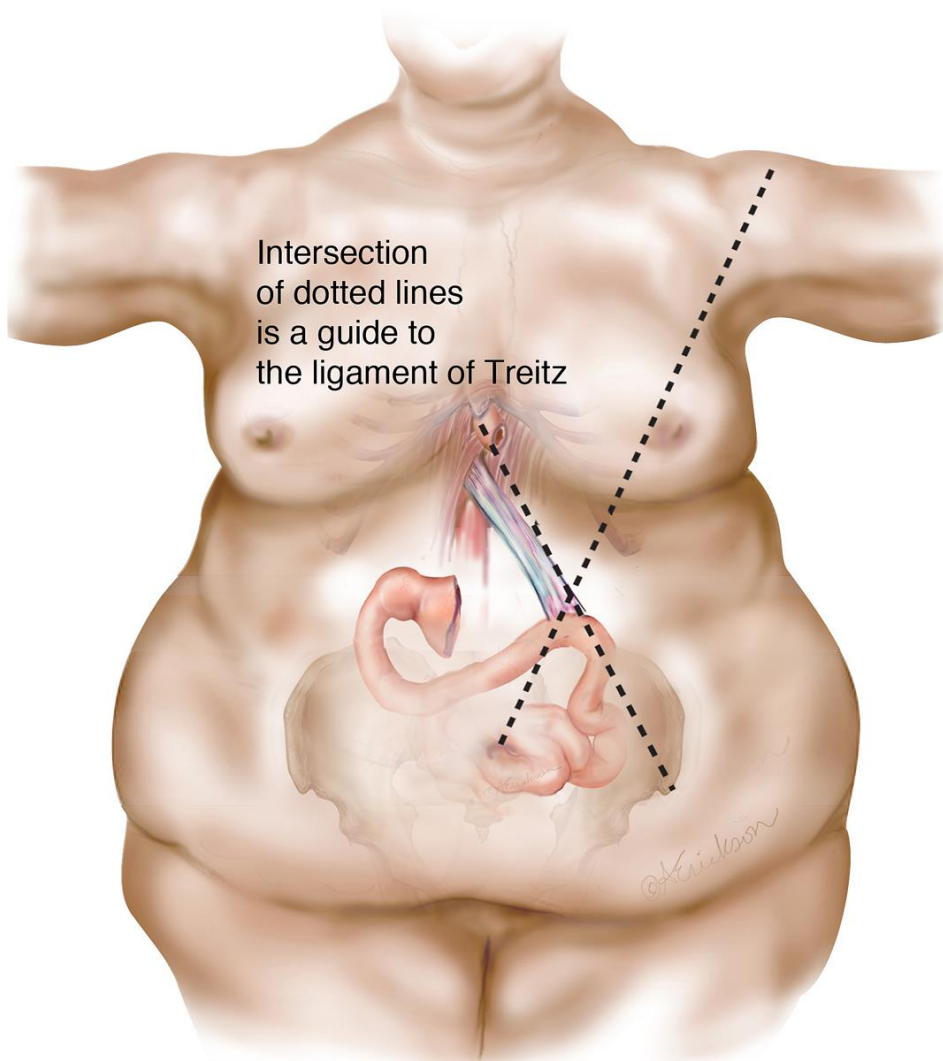


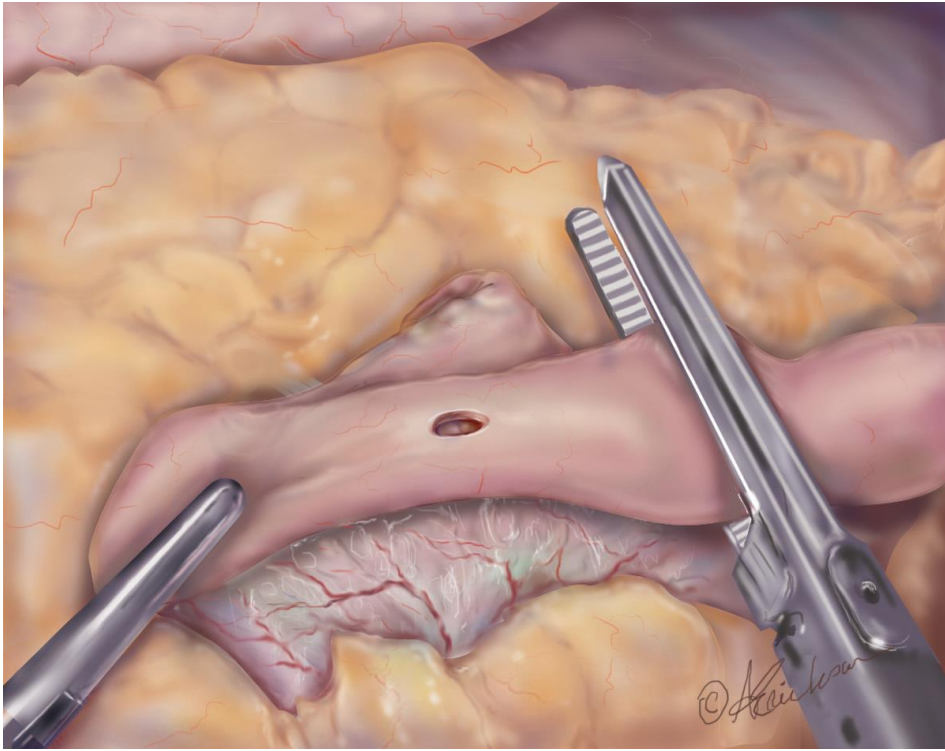


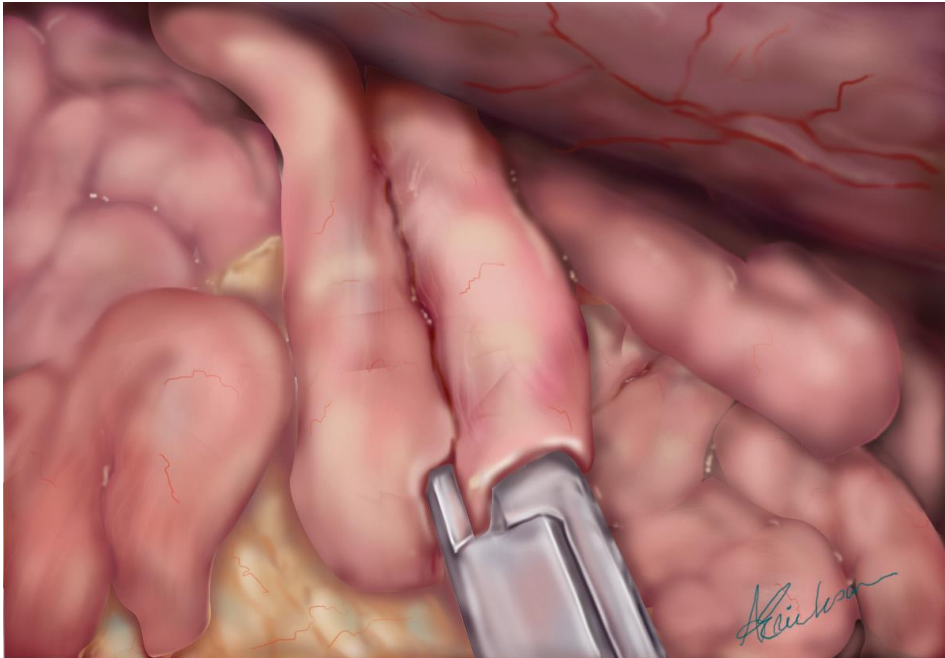
Placement of corner sutures

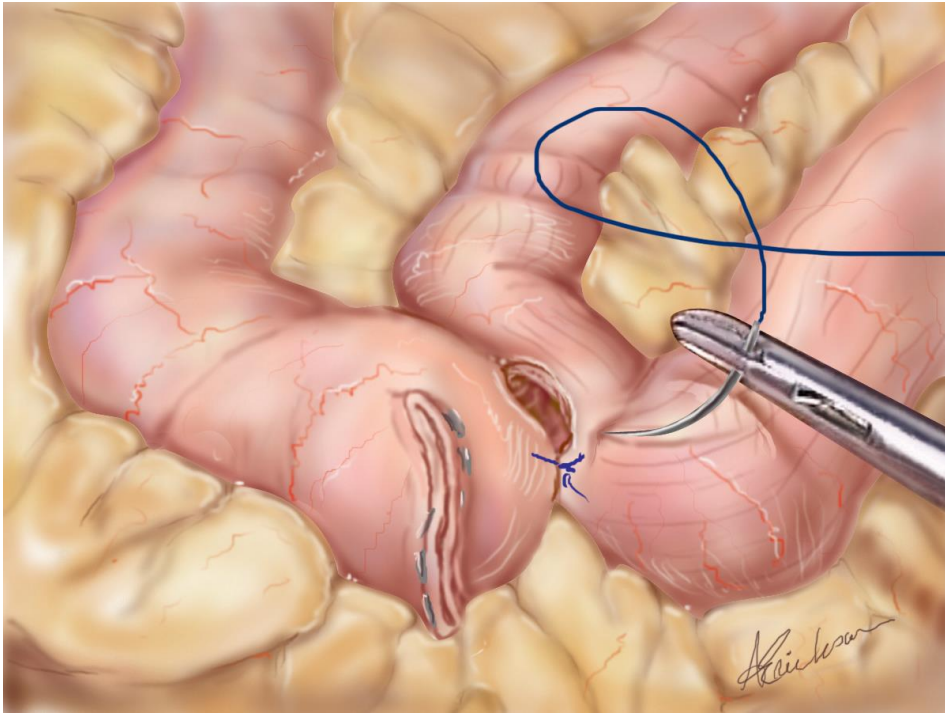


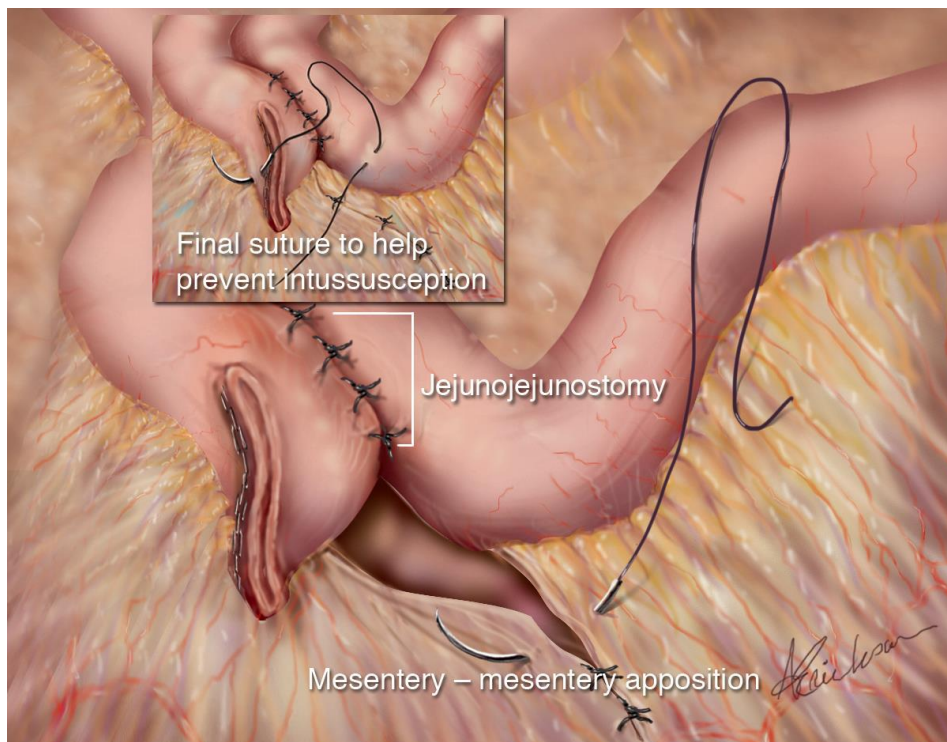


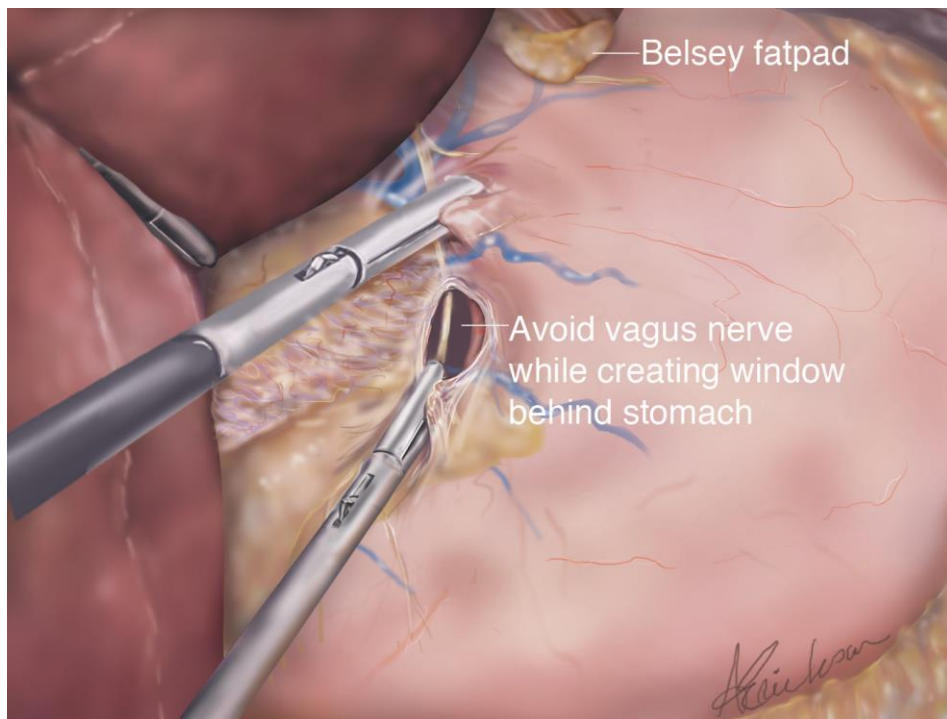


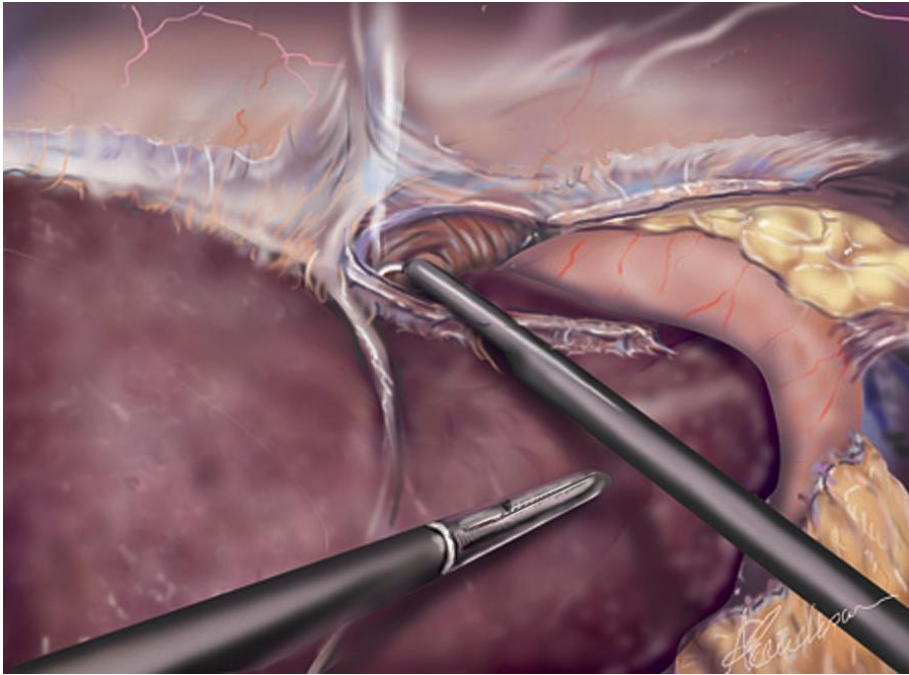


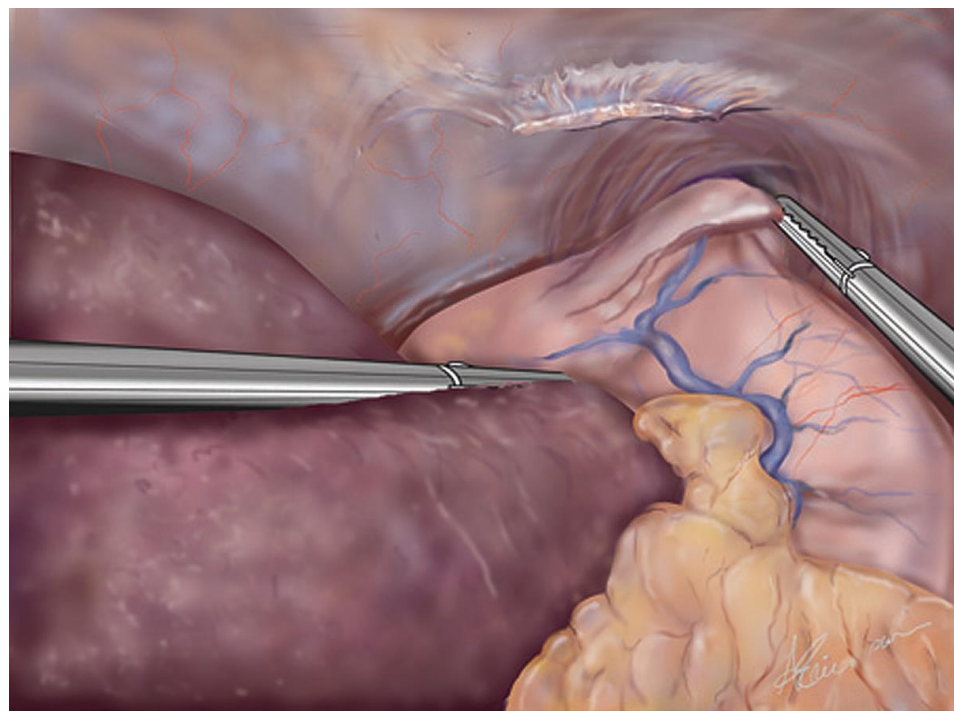


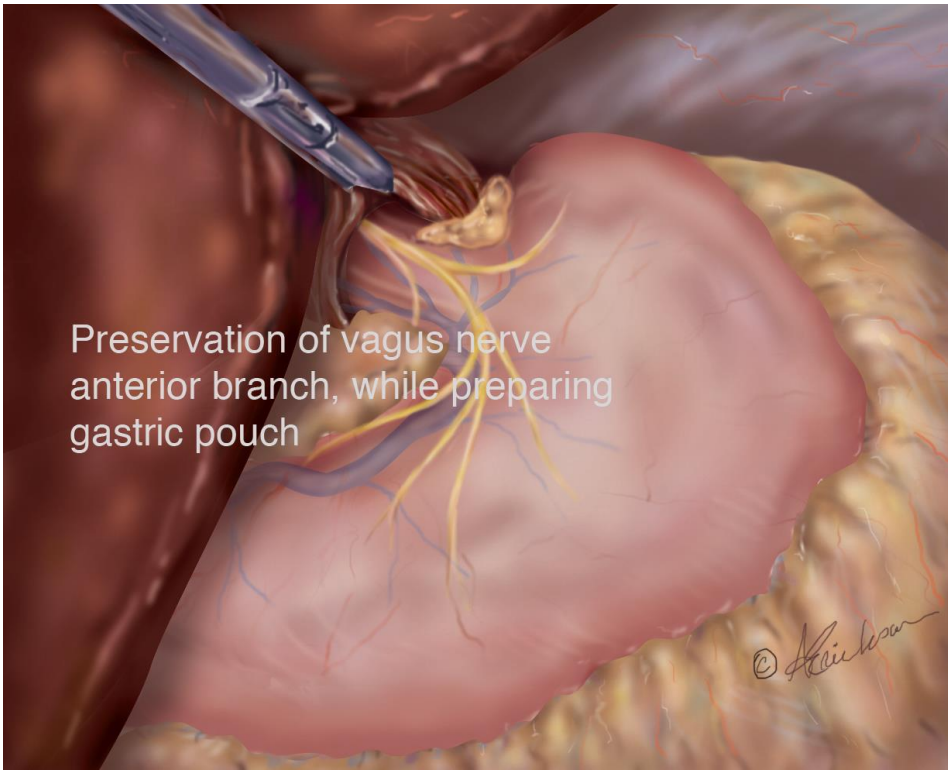








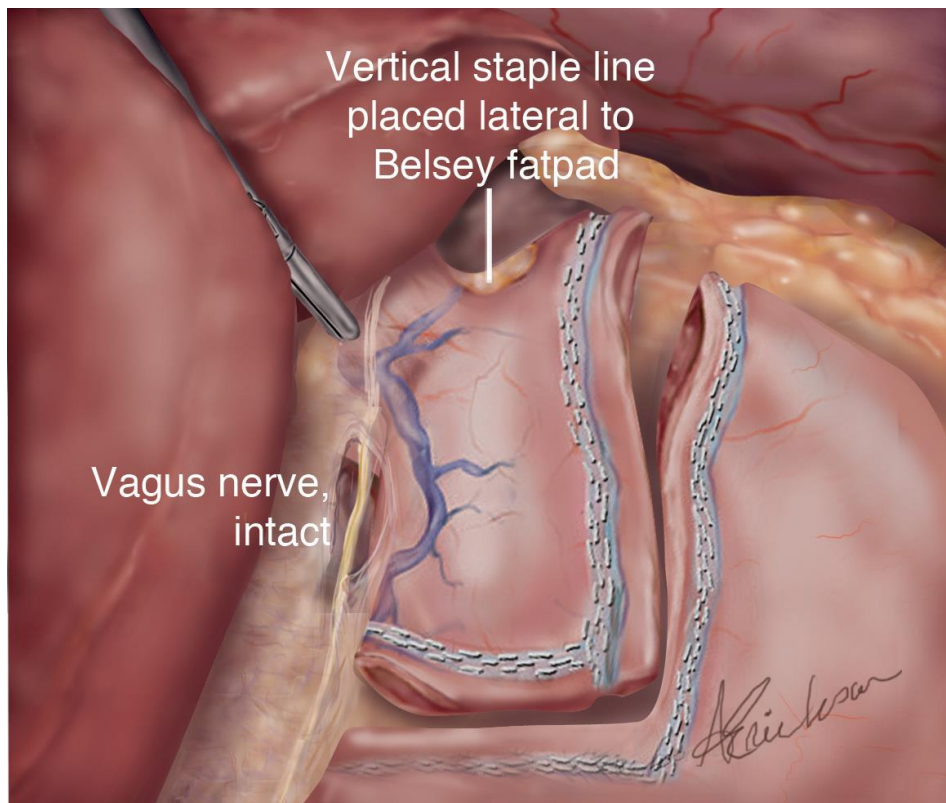


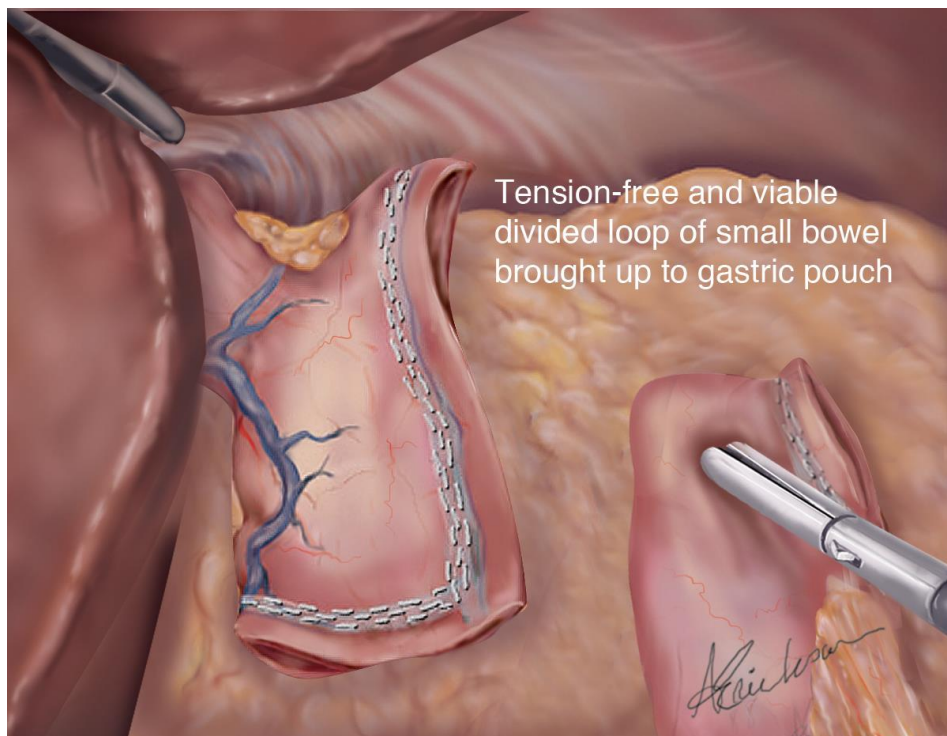


Preservation of vagus nerve
anterior branch, while preparing
gastric pouch

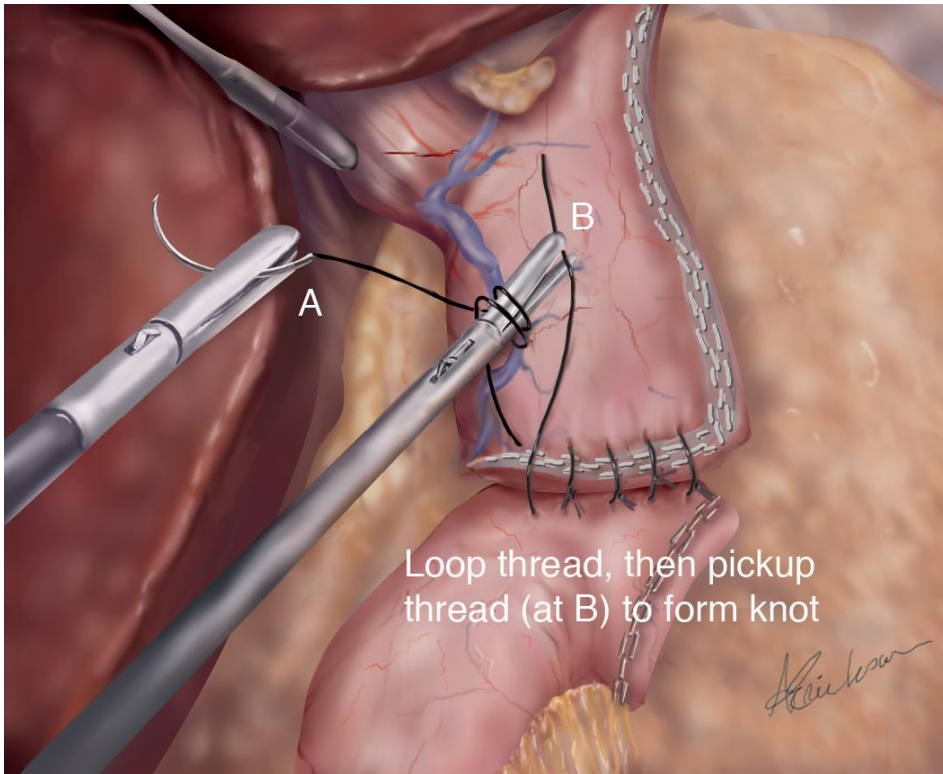
This anatomical illustration shows the stomach and the vagus nerve. The vagus nerve is depicted as a yellow structure with multiple branches. The anterior branch is shown being preserved. A blue surgical instrument is visible, indicating the preparation of the gastric pouch. The background shows the surrounding abdominal structures in shades of red and brown.

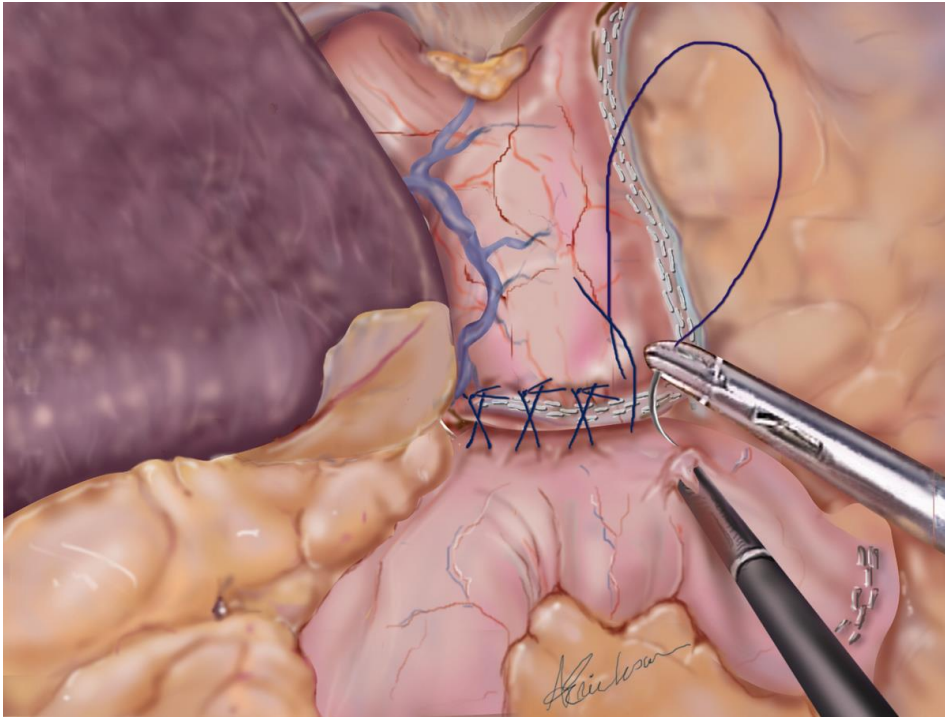
© H. K. H. H.

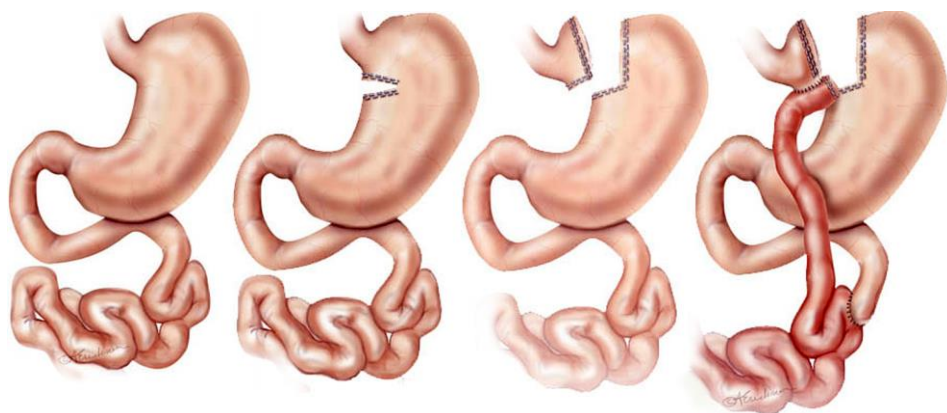
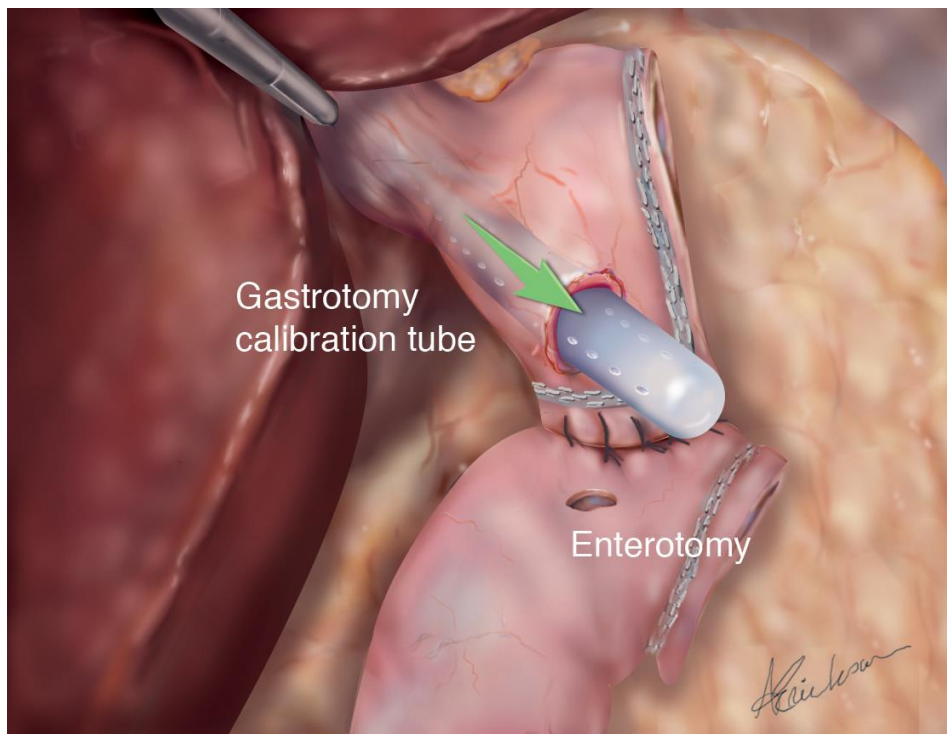


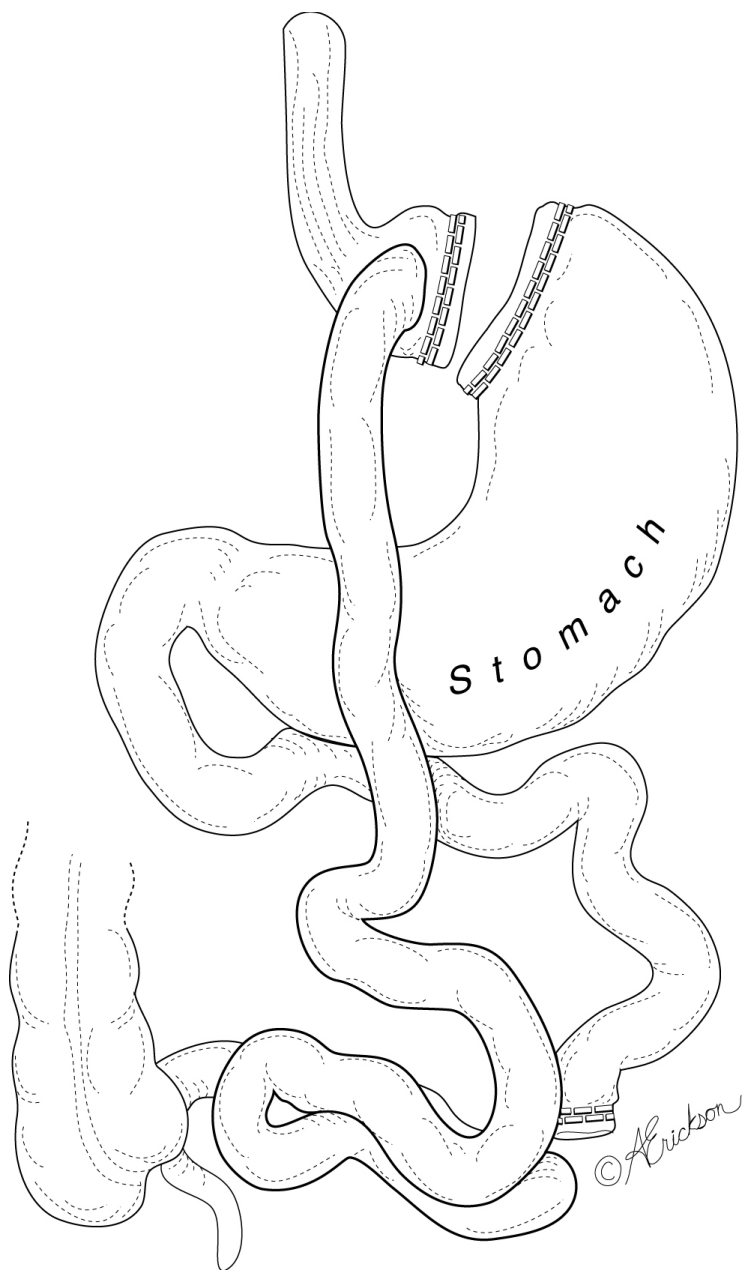


Tension-free and viable
divided loop of small bowel
brought up to gastric pouch

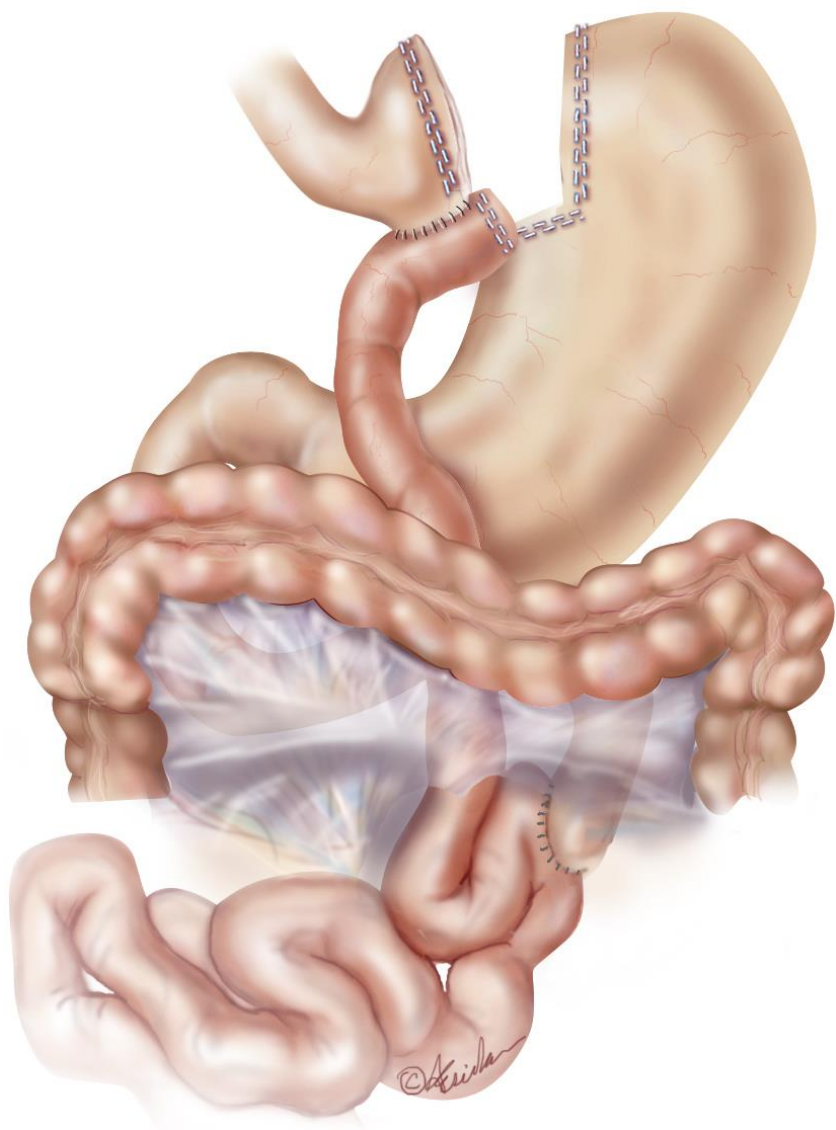






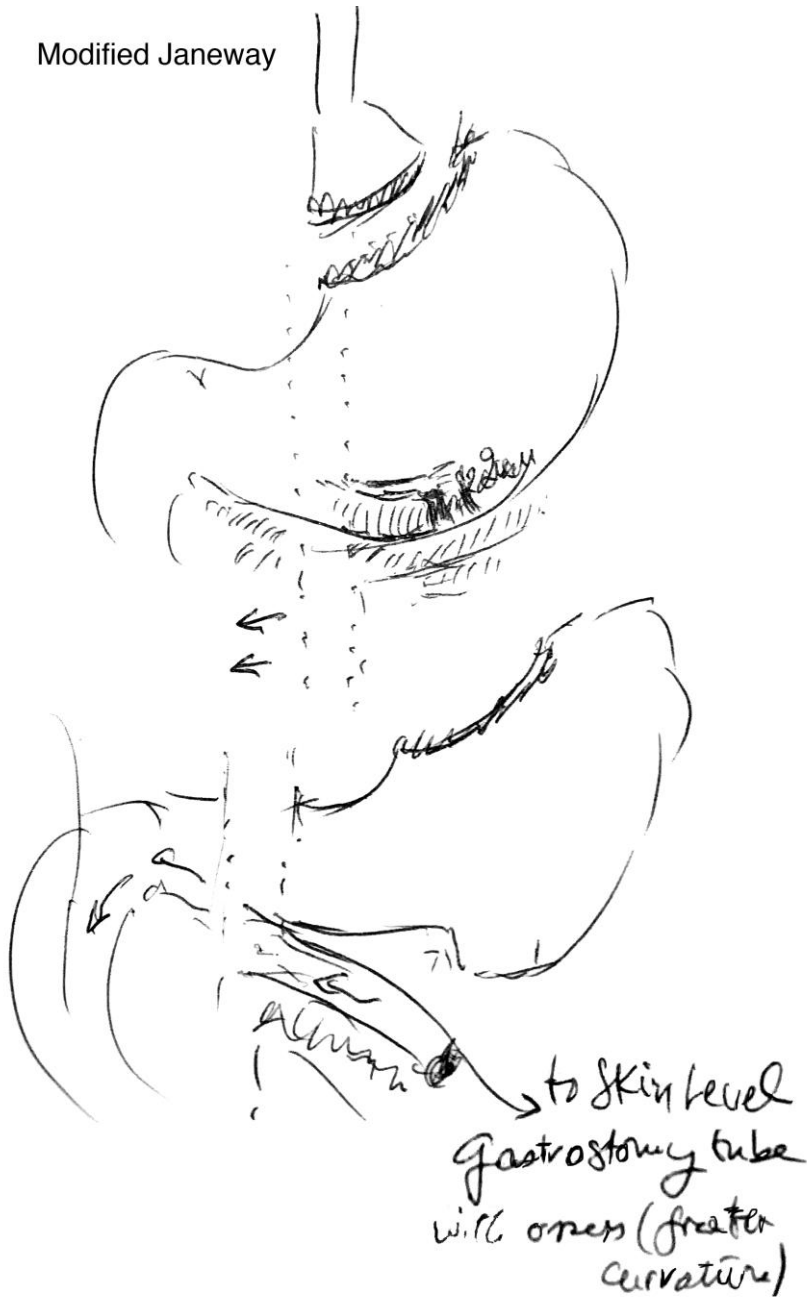


Gastric bypass procedure

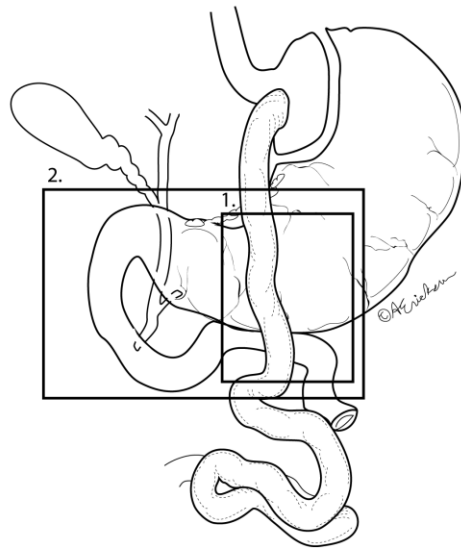




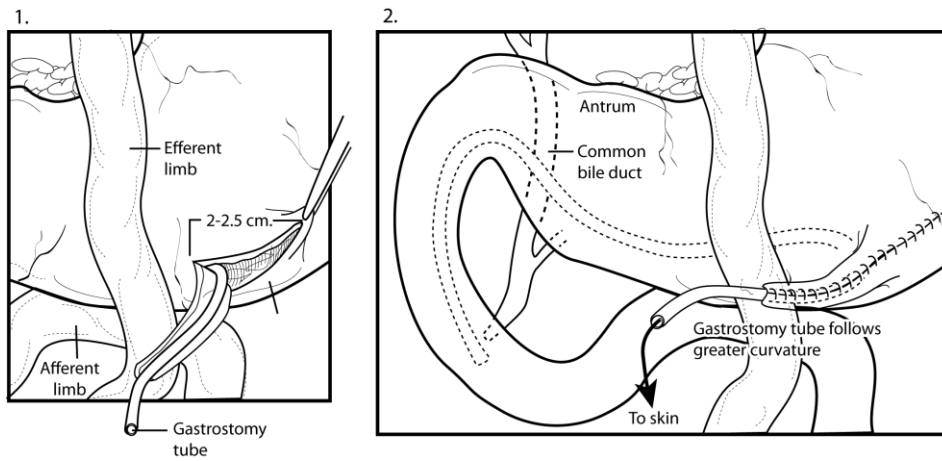
Modified Janeway



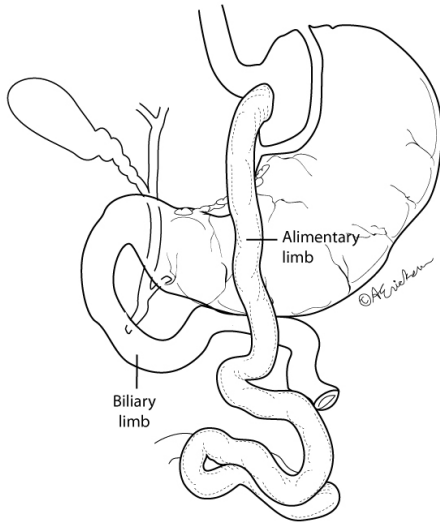
Altered RYGB anatomy



Modified Janeway procedure

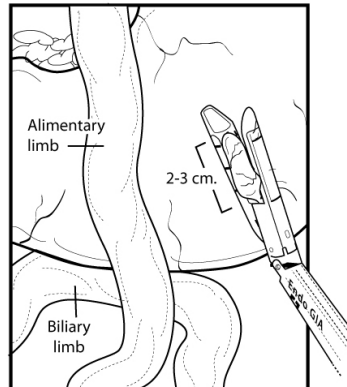


Altered RYGB anatomy

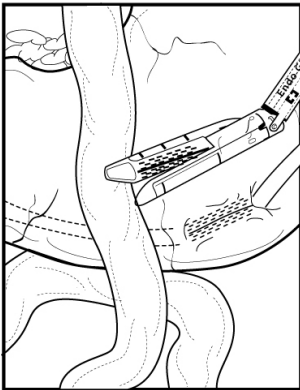


Modified Janeway procedure

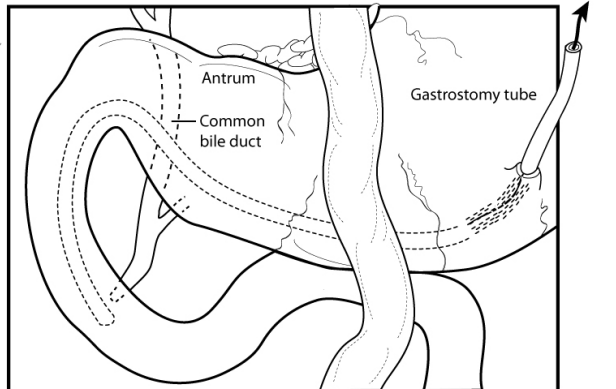
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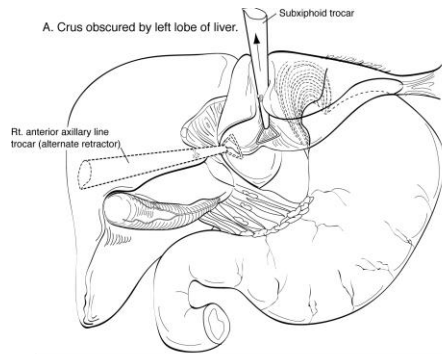


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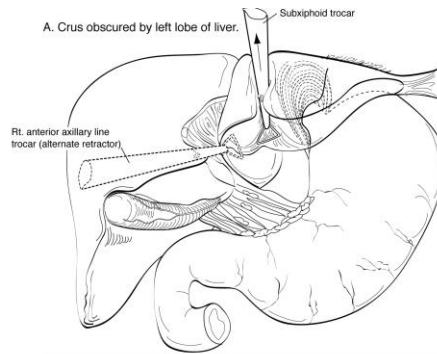
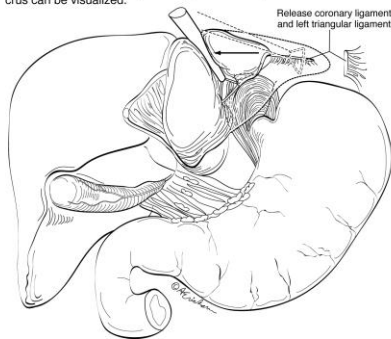


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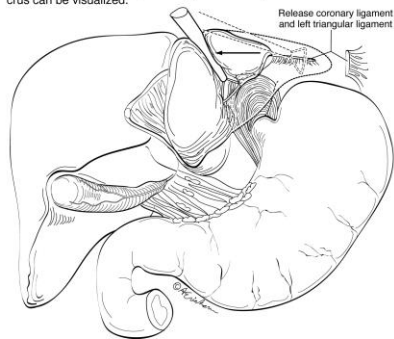


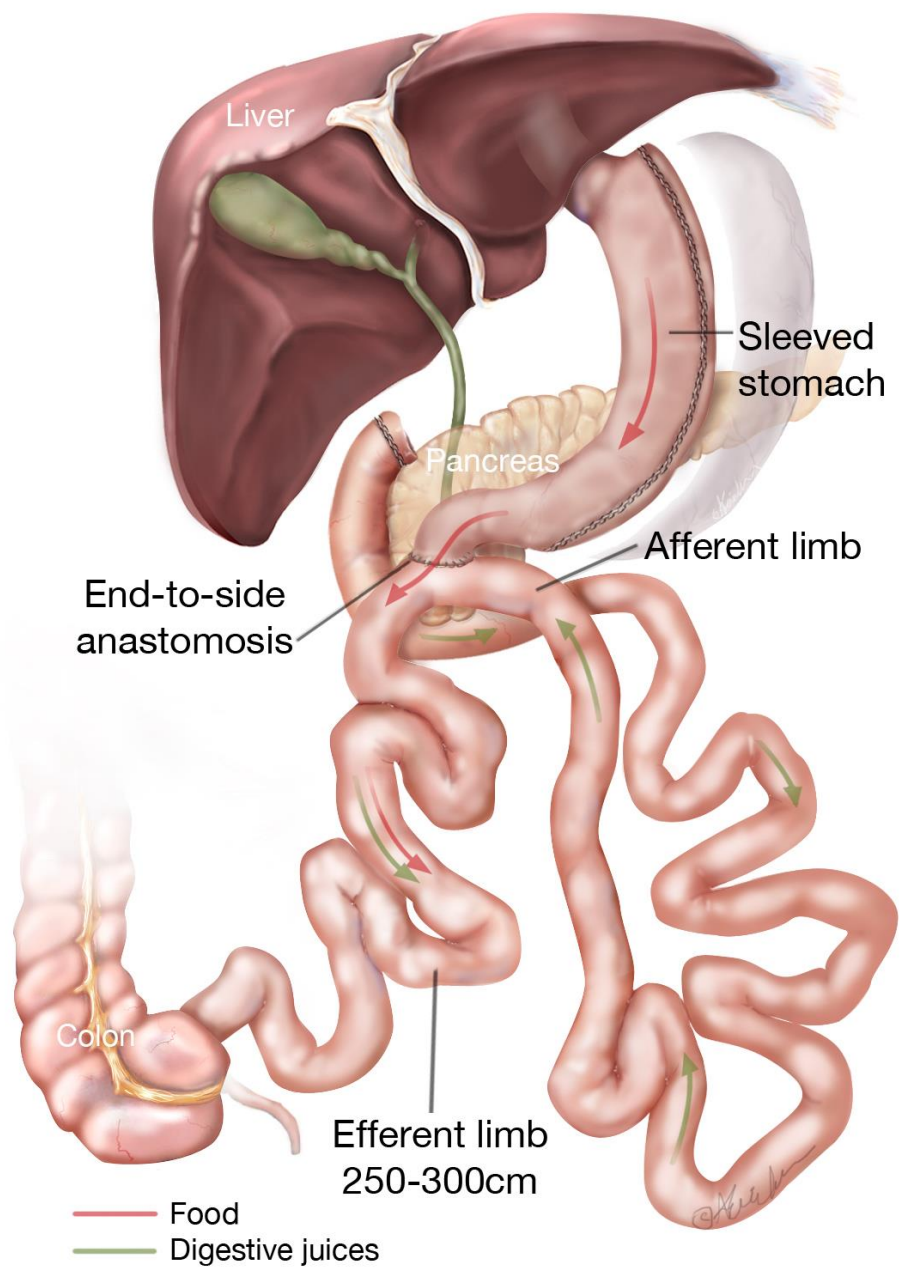


B. Left lobe of liver pushed posteriorly and to the right—crus can be visualized.

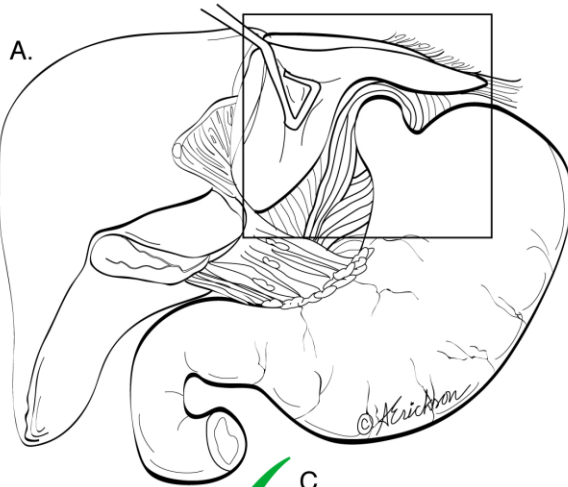


B. Left lobe of liver pushed posteriorly and to the right—crus can be visualized.

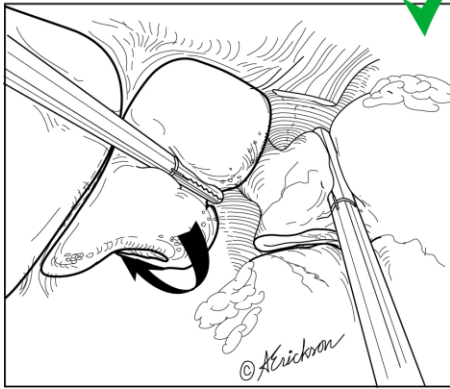




Hiatal exposure

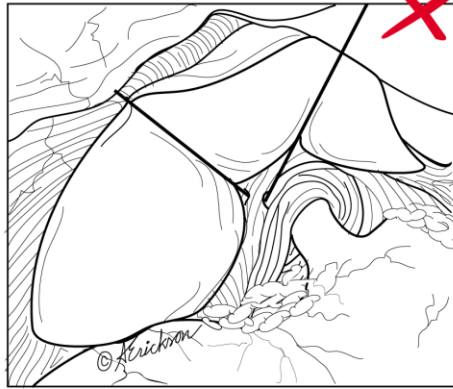


B.

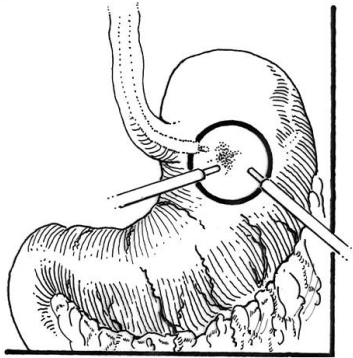


Left triangular ligament divided and liver folded.

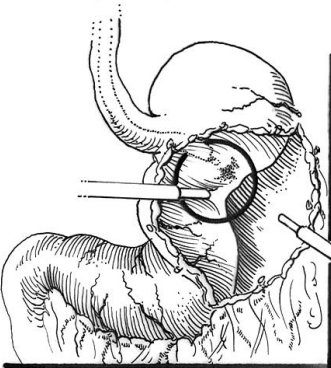
C.



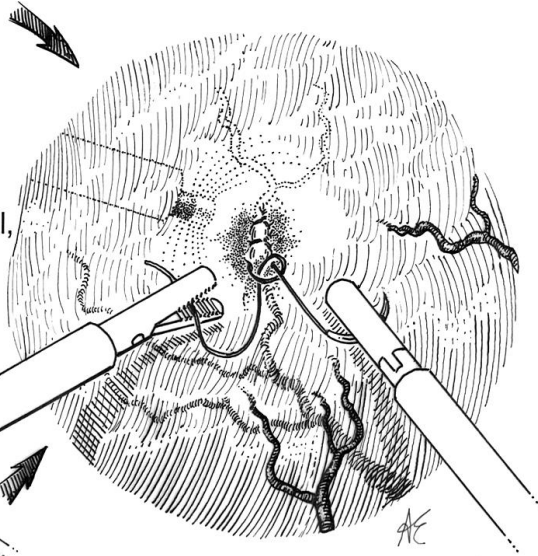
Crural stitch to elevate liver.



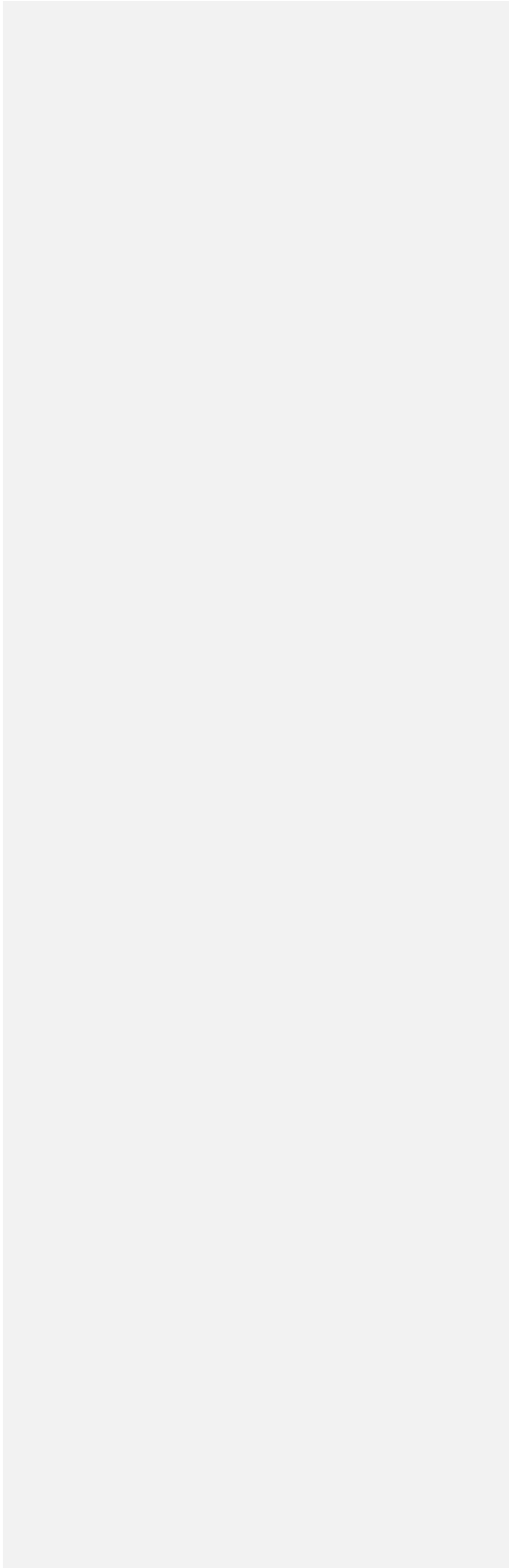
Bleeder located on ant. wall,
via transillumination.

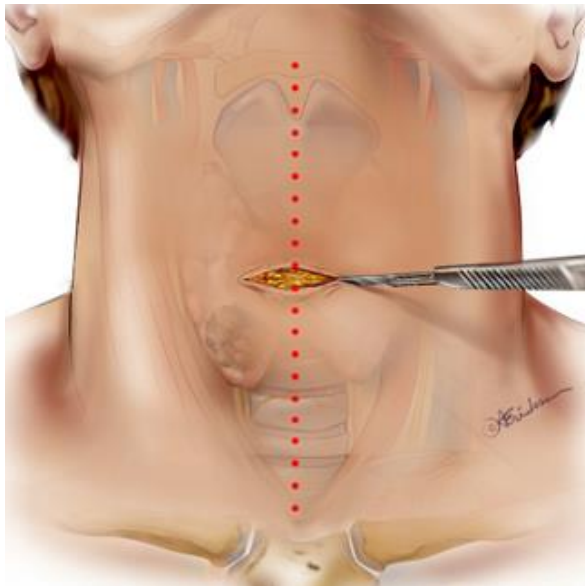
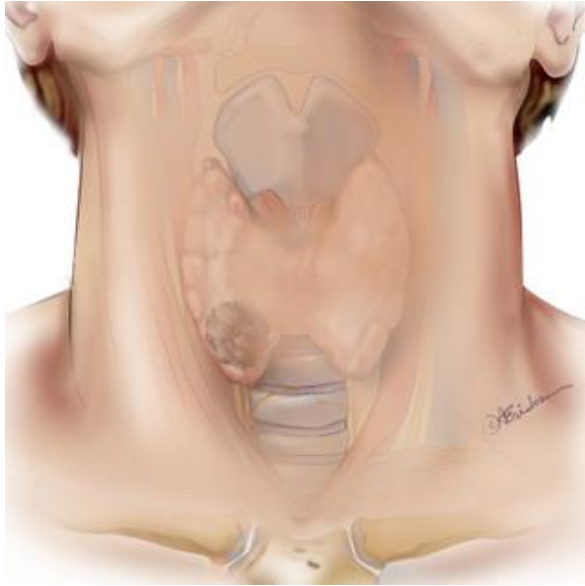


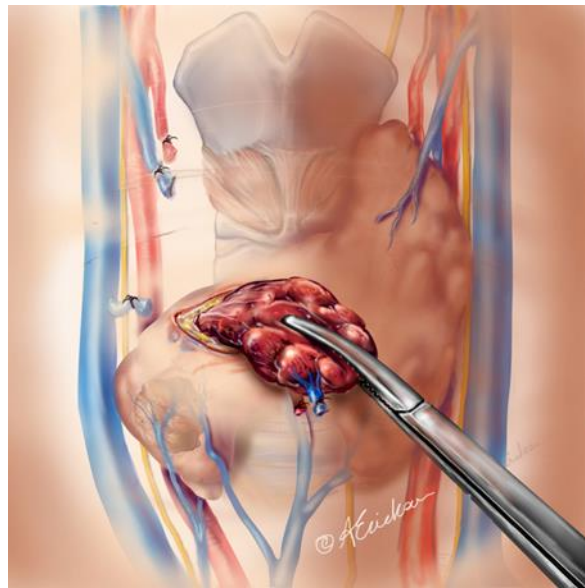
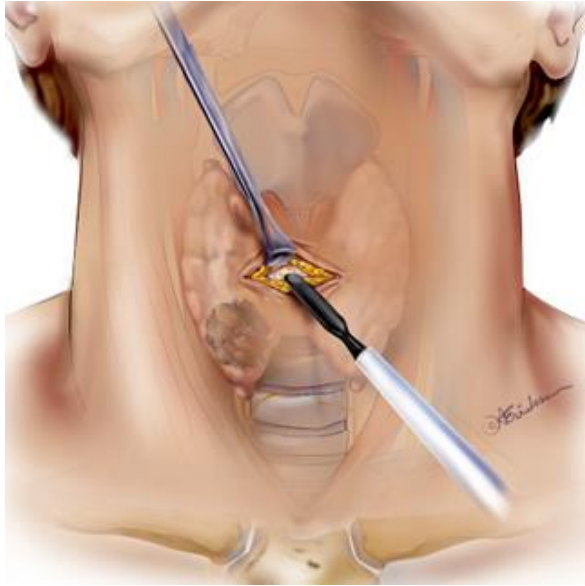
Bleeder located on post. wall,
via transillumination and/or
methylene blue dye injection.

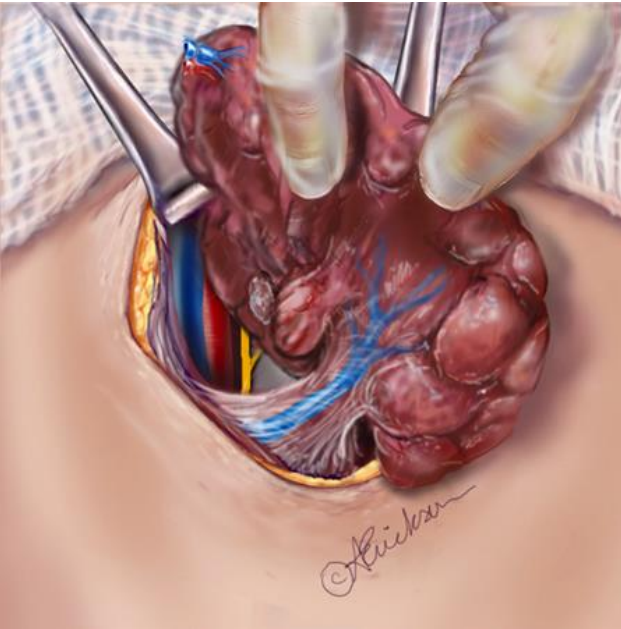
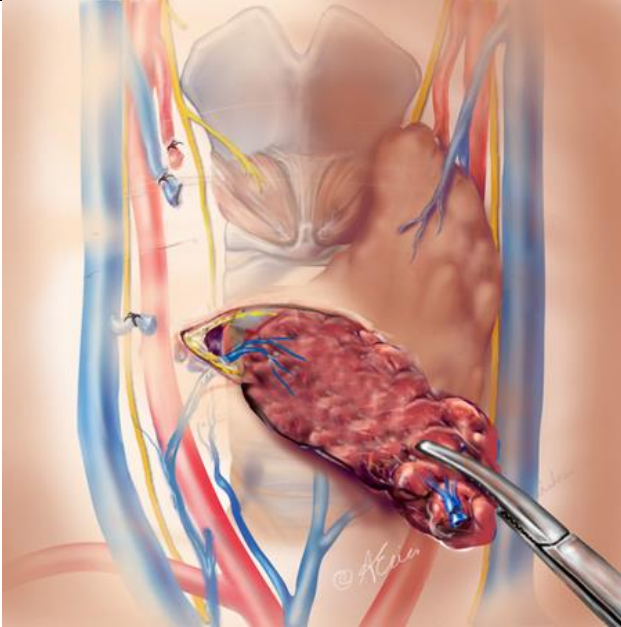


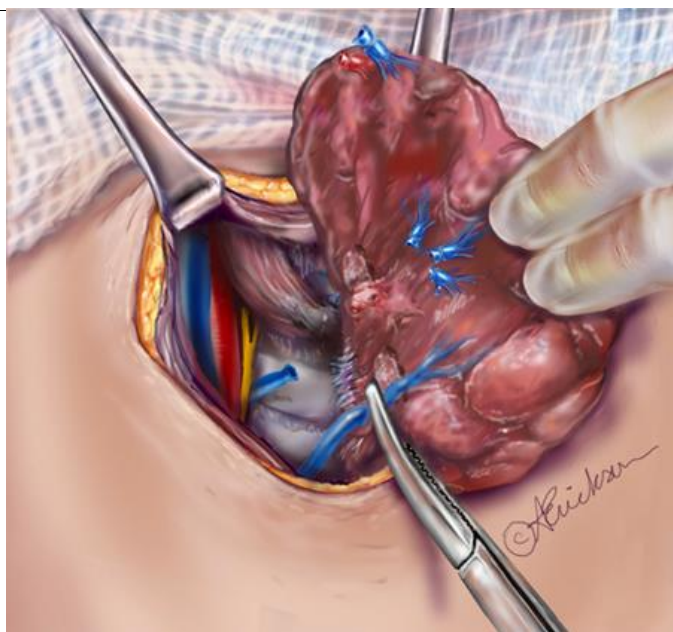
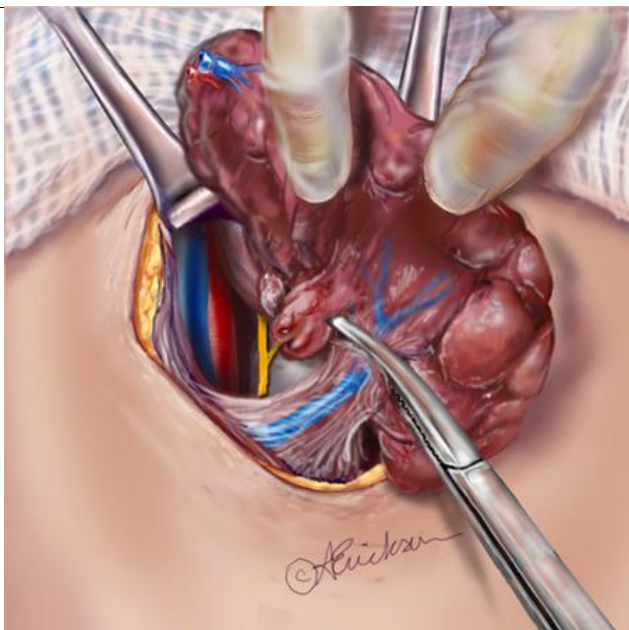
Thyroid

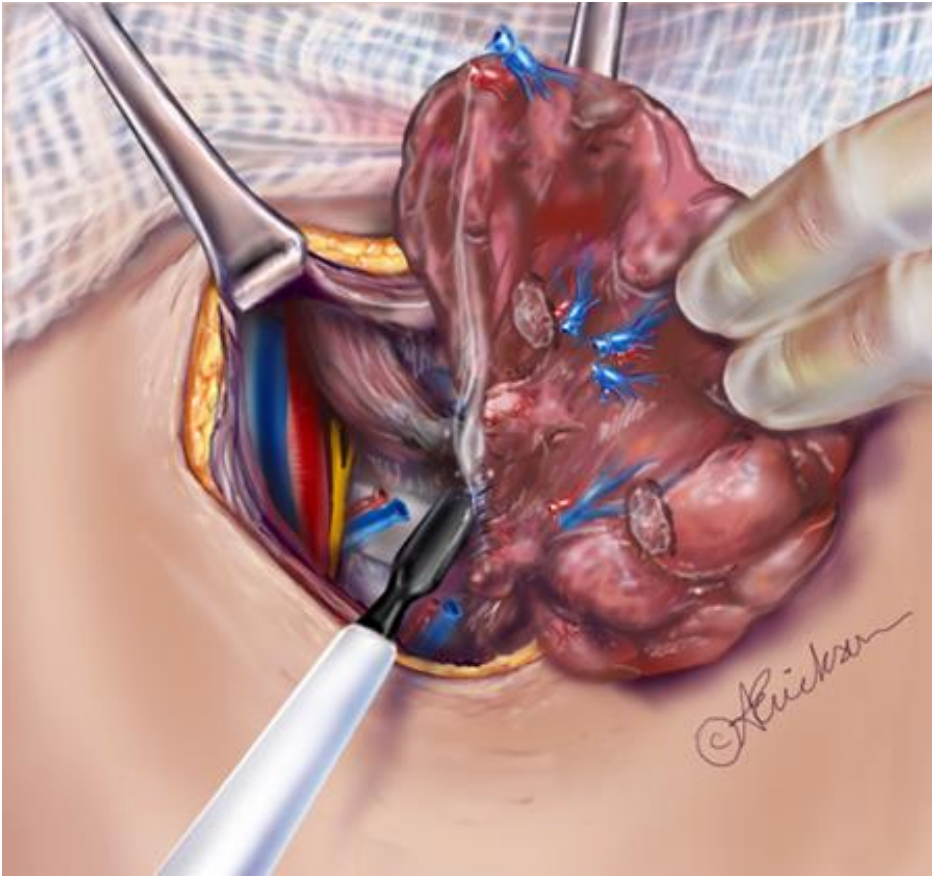


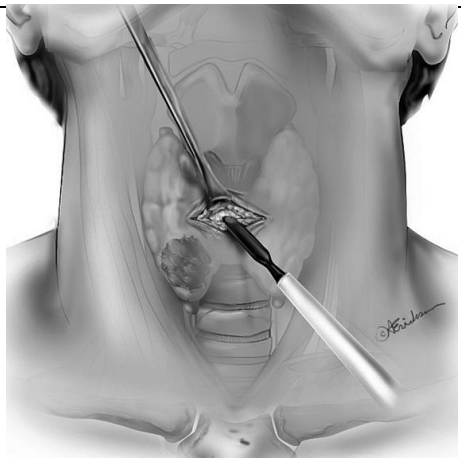
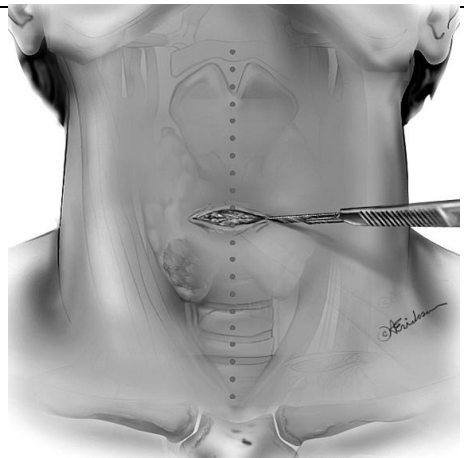
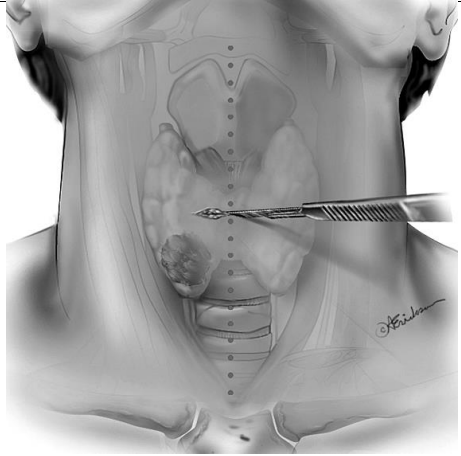
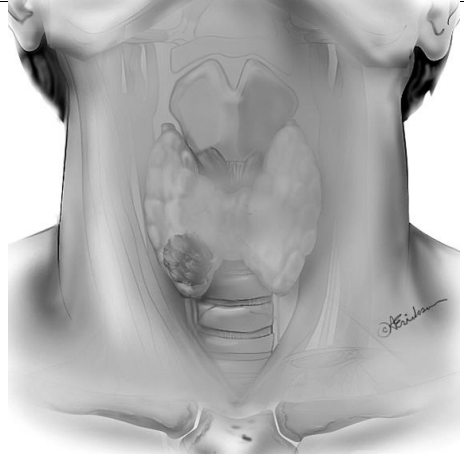


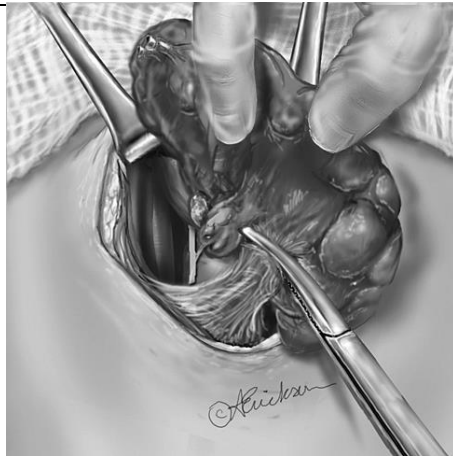




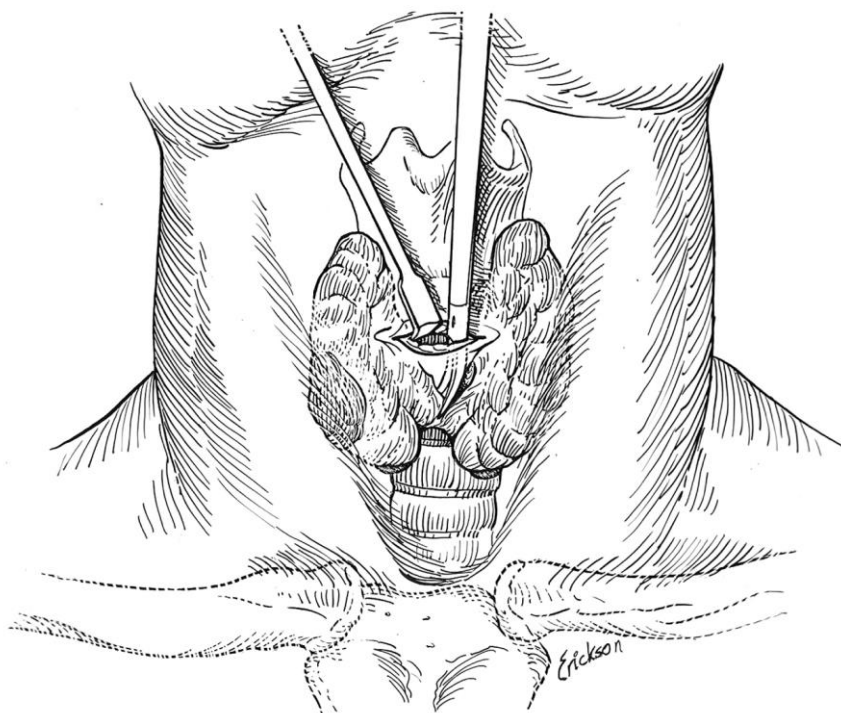


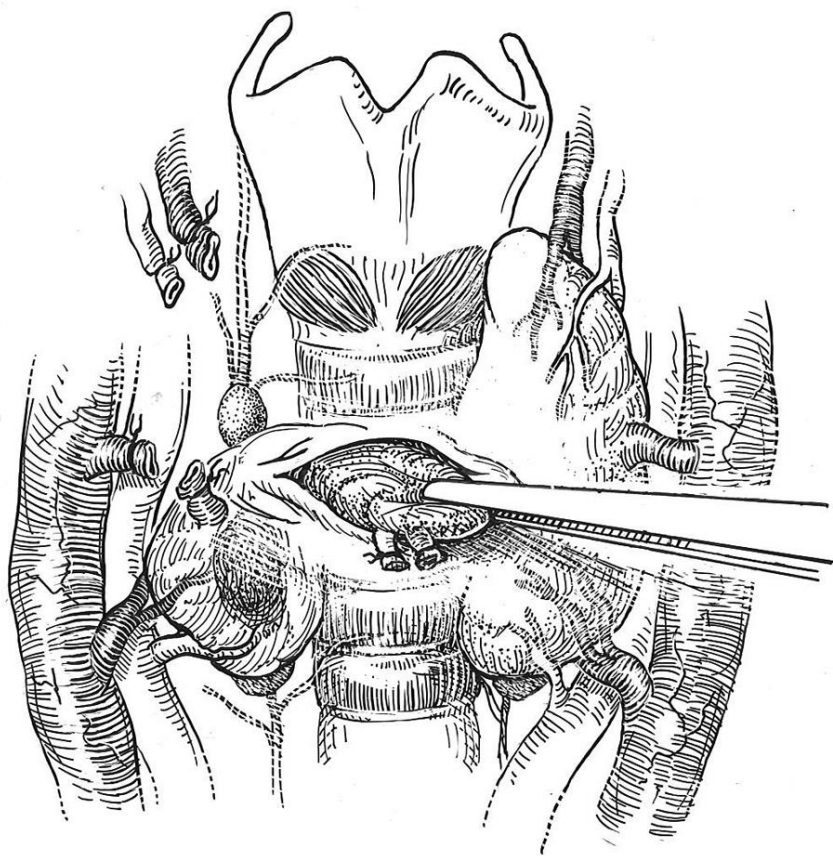


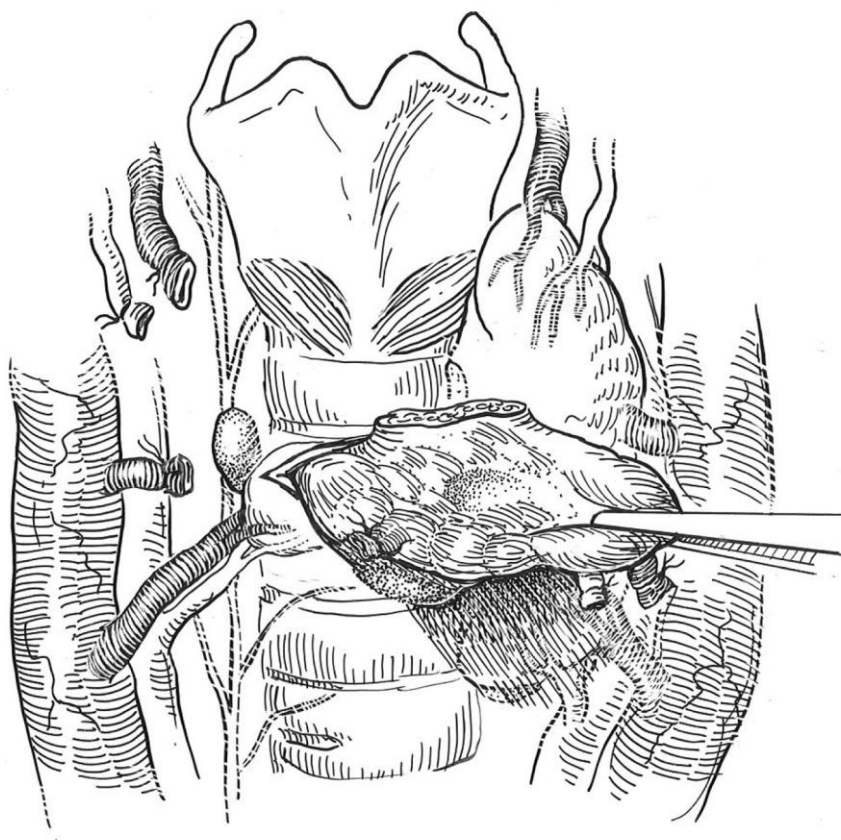




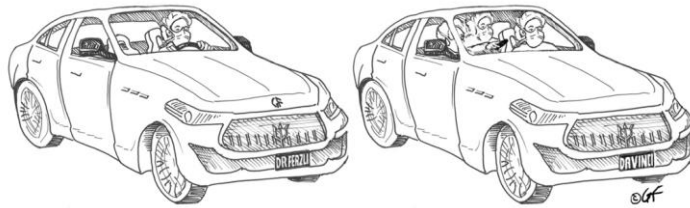








Robotics



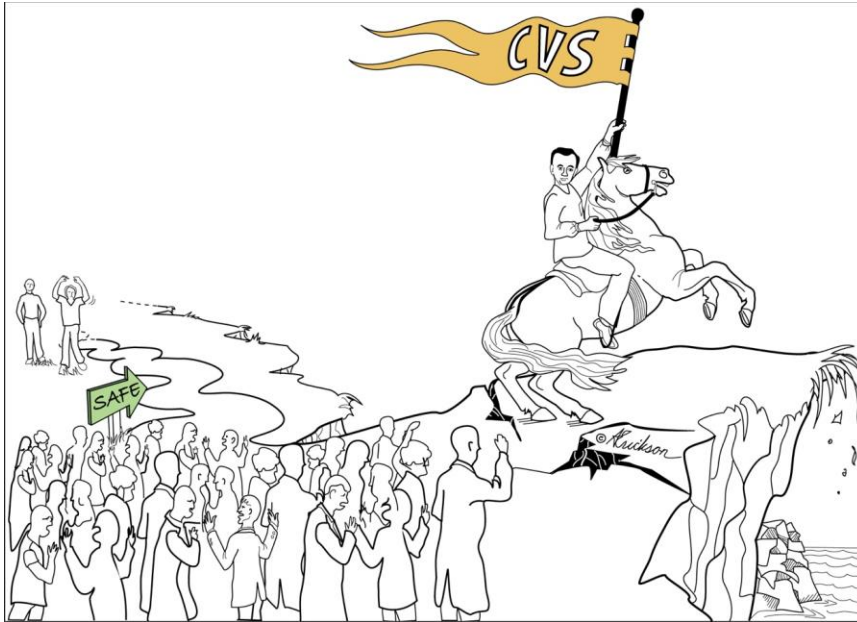
Perform laparoscopic surgery through careful education and experience?

Or be an ignorant passenger removed from actual experience?

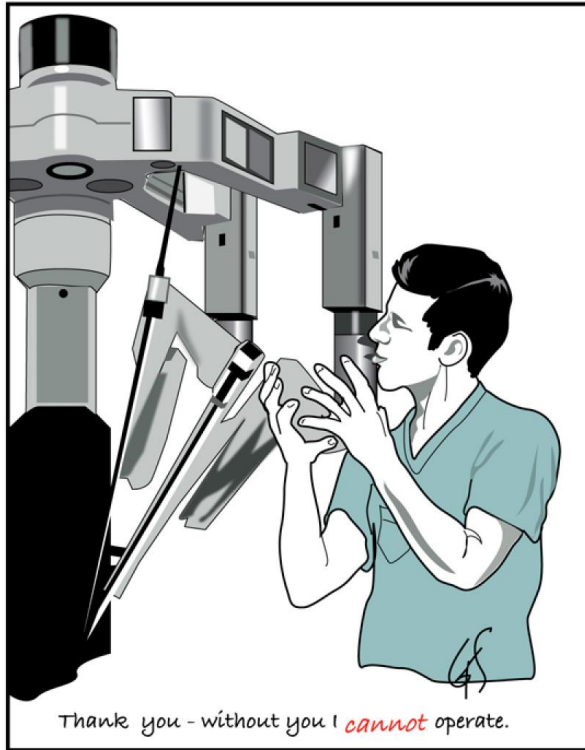
To surgical trainees:



If at every step of your training, you don't stop and think about what you're doing and why, as well as what is the next best step and why; then sadly, you will graduate as a robotic surgeon.

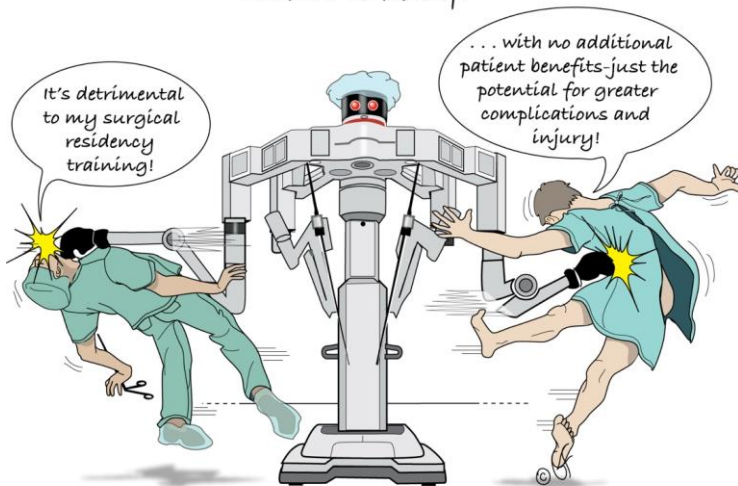








Robotics in Surgery --
DOUBLE WHAMMY!





But how did robotics receive education and training?



OLD EQUATION

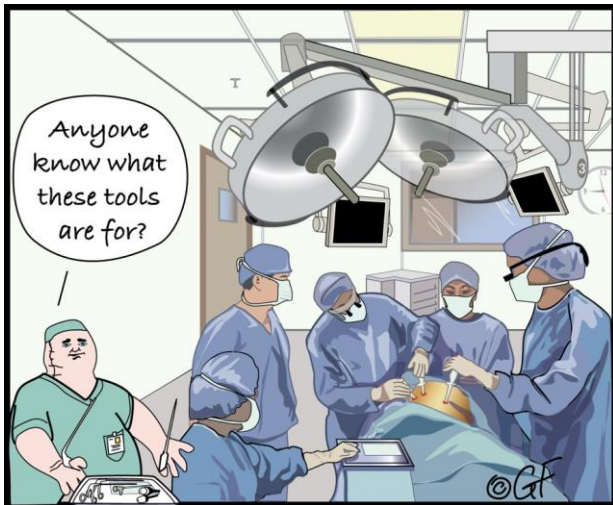
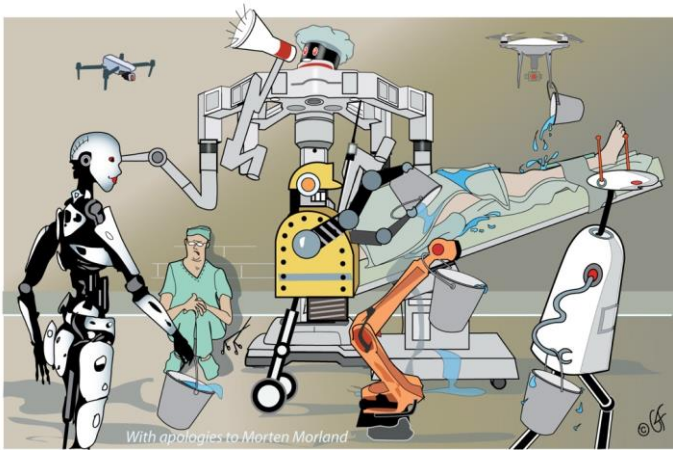
NEW EQUATION

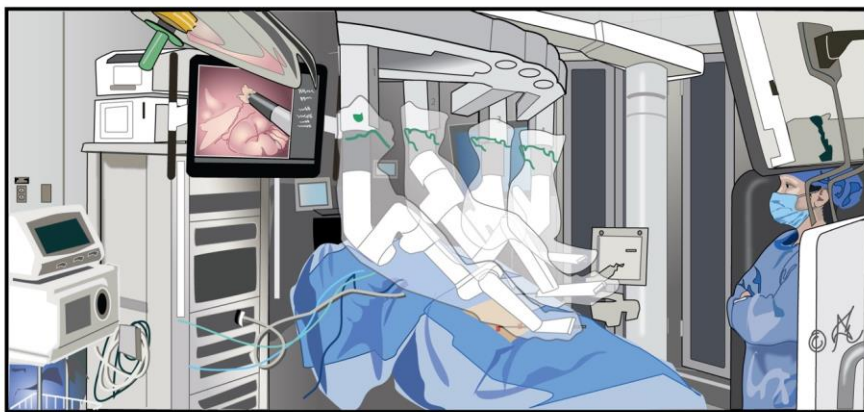
$$\text{VALUE} = \frac{\text{QUALITY}}{\text{COST}}$$

?

$$\text{VALUE} = \frac{\text{POLITIC\$} + \text{ROBOTIC\$}}{\text{COST}}$$



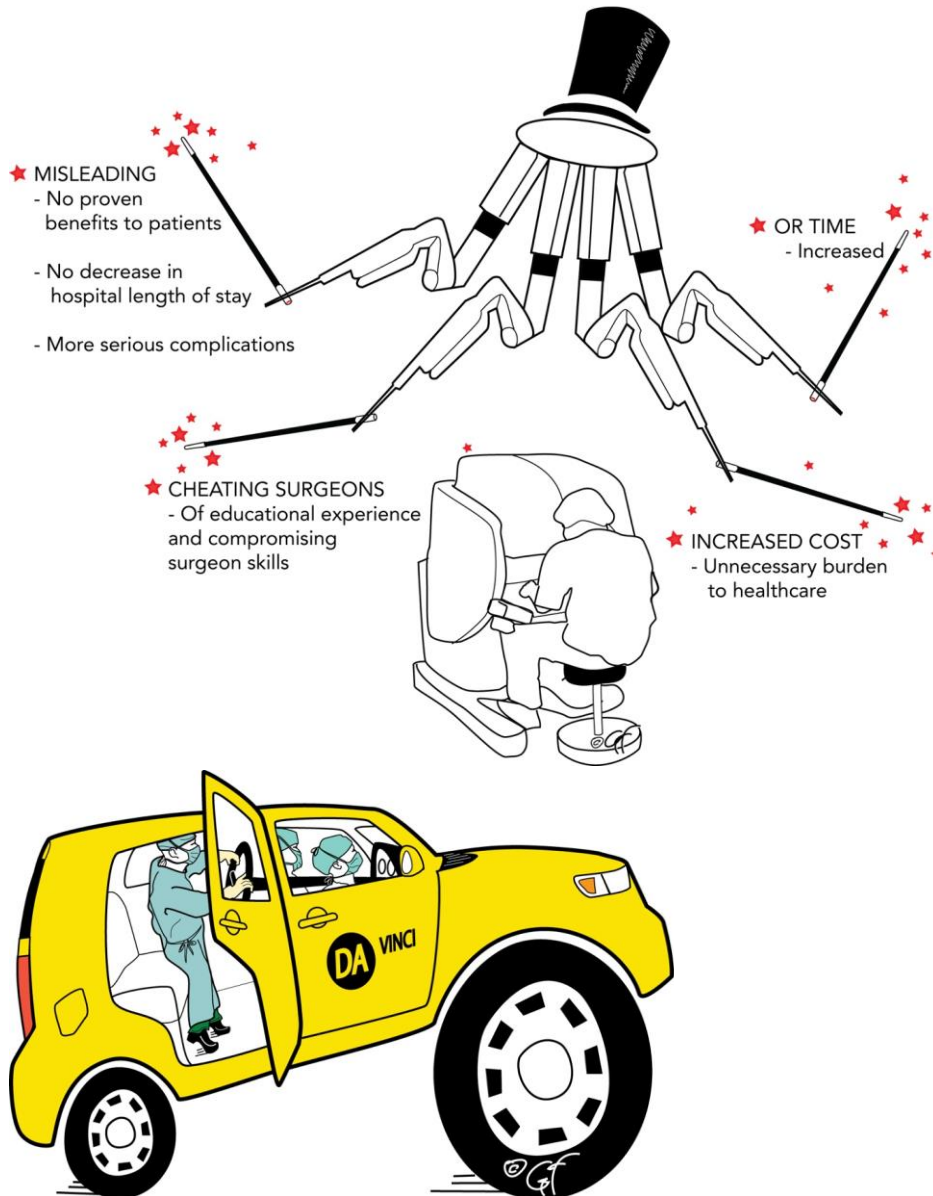




In robotic surgery, the only real robot in the room isn't the one with arms — it's the trainee. Every move is dictated, every light preset, every step rehearsed.

The irony? In a room full of machines, it's the human who loses autonomy.

Robotic surgery is deceptive
and a serious healthcare threat:



Evidence-based medicine?



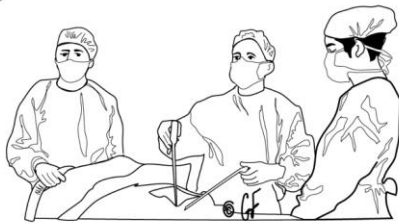
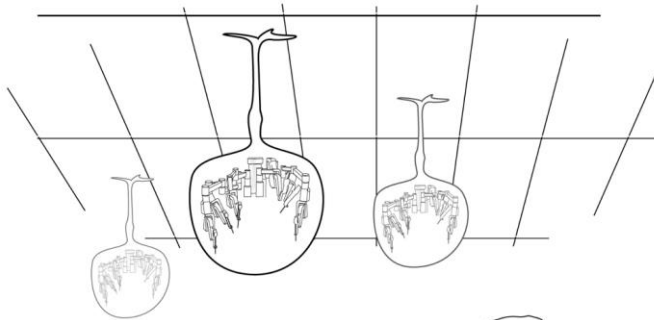
Reality:

...or marketing ploy?

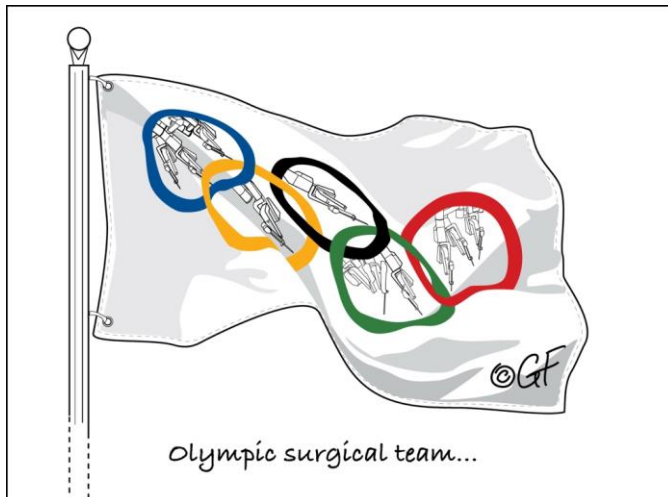
- Longer OR times
- No standardized regulations
- No improved patient outcomes
- Staggering equipment expense and space
- Large volume of robotic cases needed
- Upcharging costs by manufacturers
- FDA warnings and multiple lawsuits- featuring direct harm to patients
- Negative environmental impact
- Surgeon trainees are spectators

* from manufacturer's marketing materials

Robotics as needed =



Successful operation / undistracted teaching....



Olympic surgical team...

The Surgery Game

ROBOTOPOLY

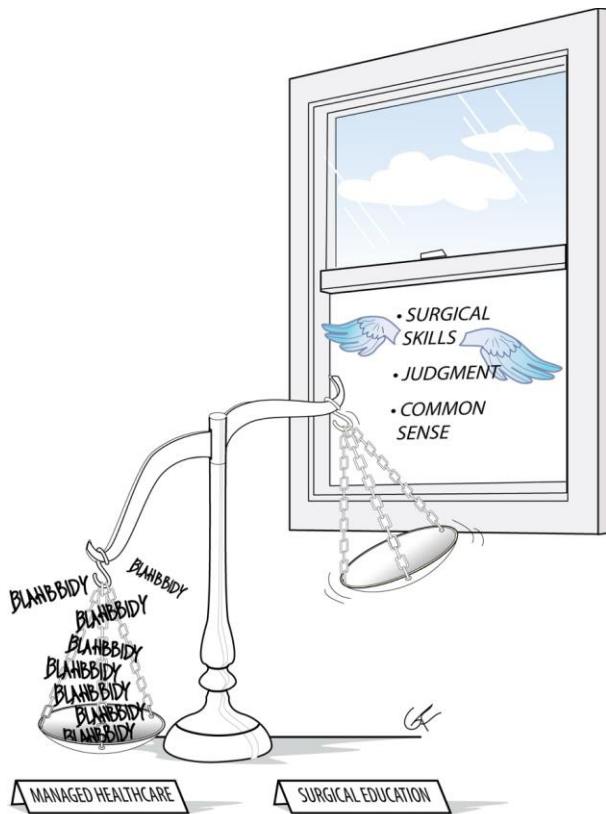
*"Take
The Risk!"*

"Ambition!"



"Never Look Back!"

"Ideas!"



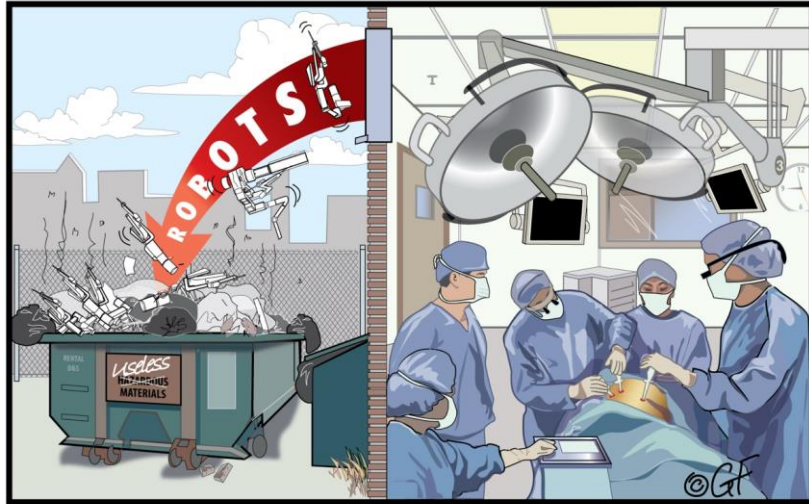
The current state of surgery in the US.

The Brushoff:



***We live in a time where "laparoscopic" surgery is being silenced
so that "robotic" surgery won't be offended.***

How to run a successful surgery residency:



If your surgeon truly knows how to operate,
why would he or she need a robot to help
complete the procedure?

Expertise is an art, not a machine.



In robotic surgery, the only real robot in the room isn't the one with steel arms — it's the trainee: Every light, port, and move is preset.

The paradox of progress: the more advanced the technology, the less human autonomy remains.



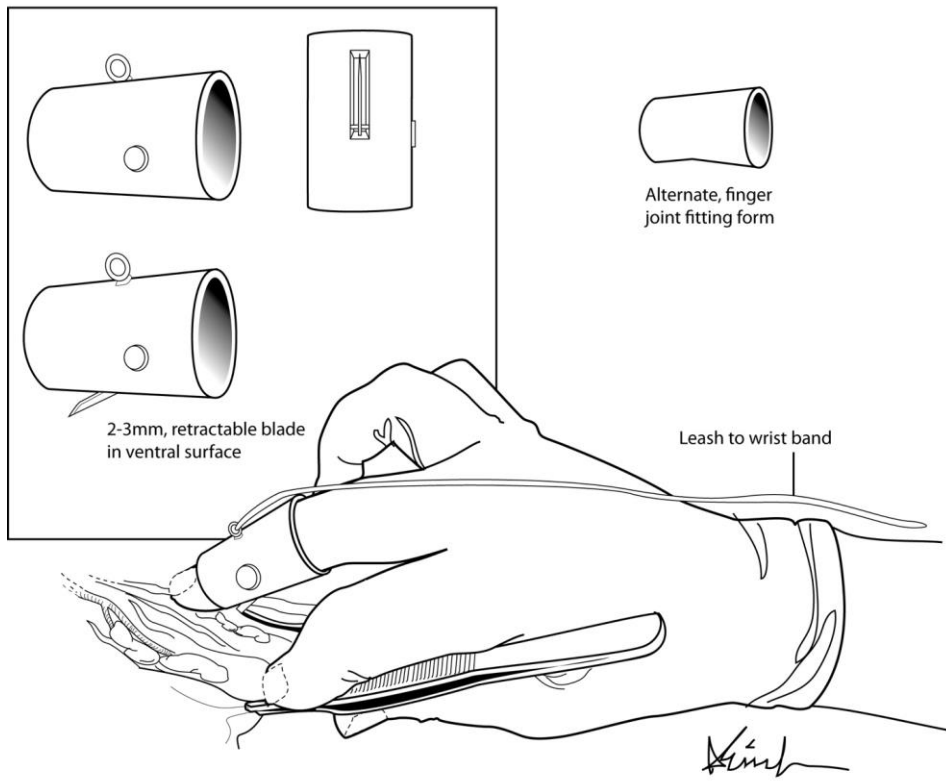




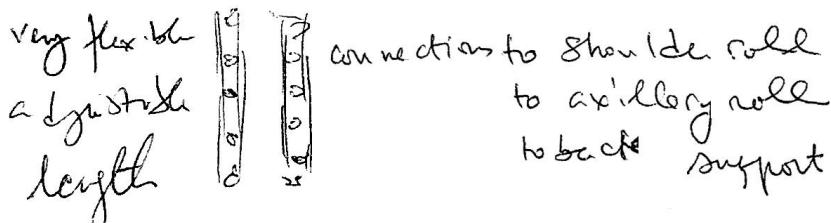
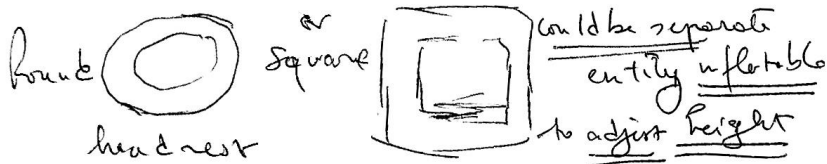
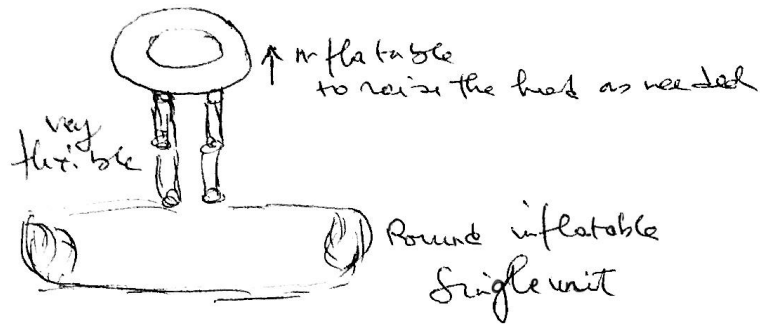
Discharge Before Noon?
 Of course-we need to pay for the robots! 🤖🤖

Inventions

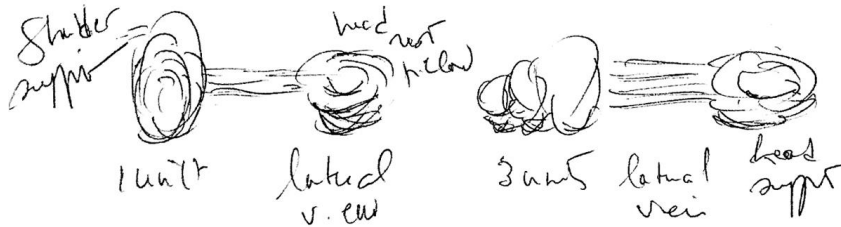
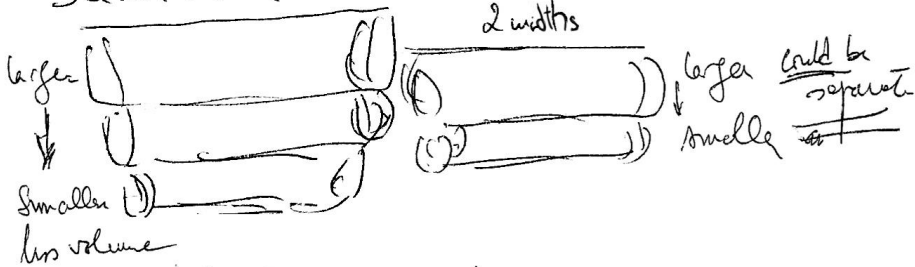
Finger cuff tissue dissector



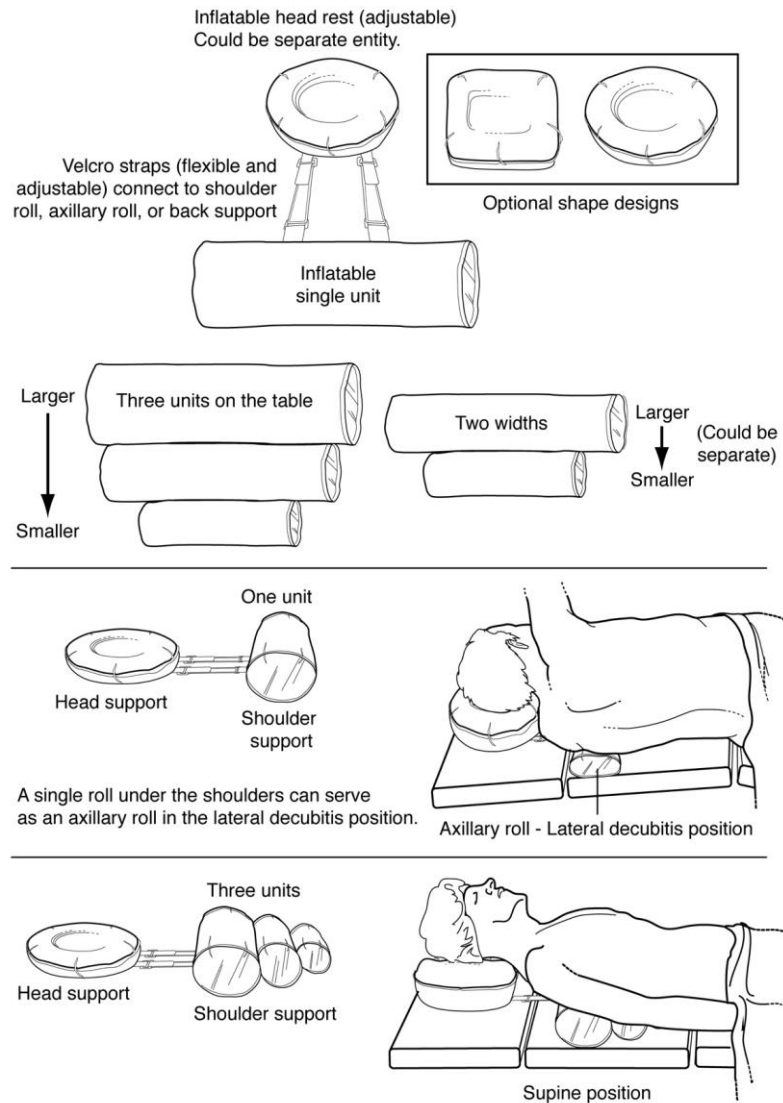
Finger cuff tissue dissector allows multiple actions of fingers.



3 units inflatable



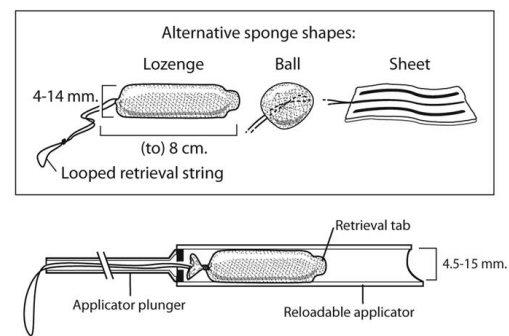
Adjustable Patient Surgical Support System for Safer Intubation and Patient Positioning



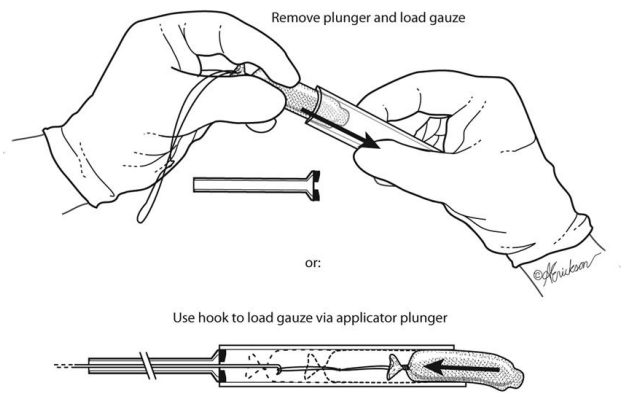
Adjustable patient surgical support system for safer intubation and patient positioning. The shoulder roll can be inflated via a foot pedal or hand-controlled remote up to 15 cm. in height, the pillow can be inflated as needed to 25-30 cm.

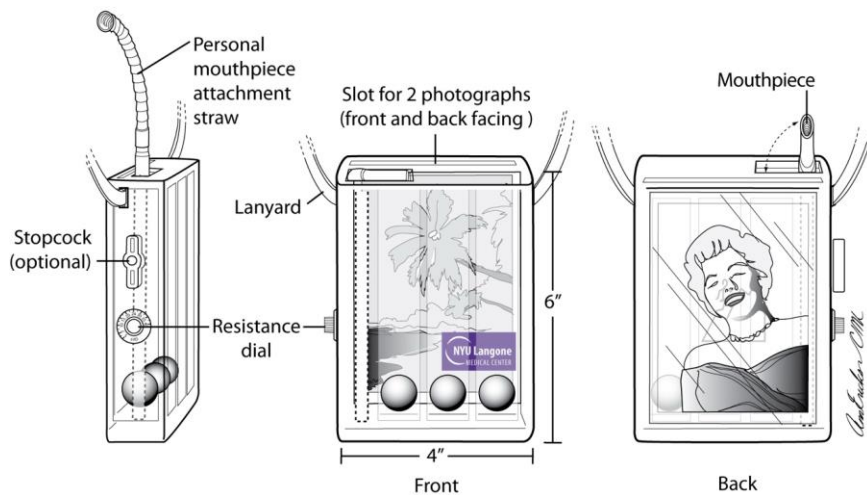
The same idea is applicable in the prone position except there will be two inflatable cylinders parallel to the body placed on each side and inflated along with the head rest.

Tonsil sponge adapted to use in visual clearing of laparoscopic field

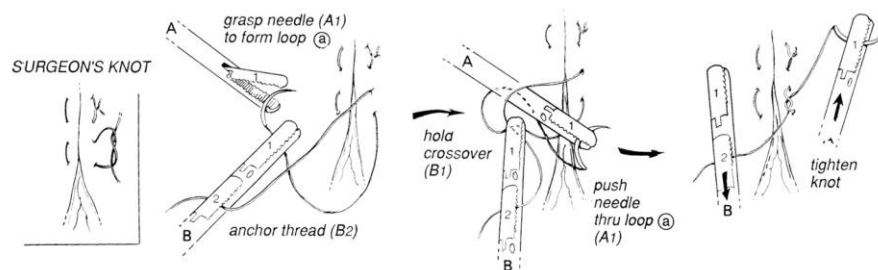


Loading gauze sponge:

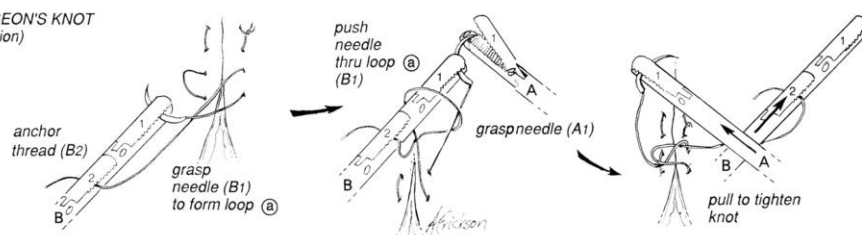




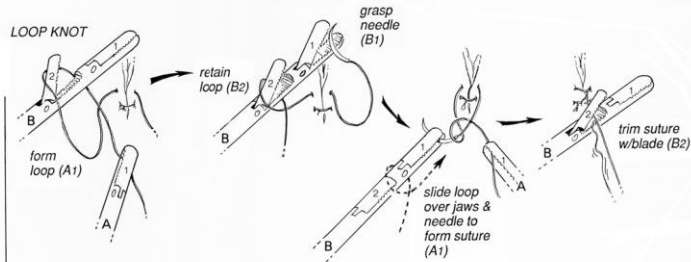
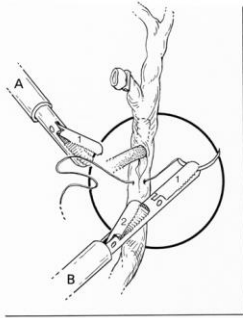
SPECIFIC CLINICAL APPLICATIONS



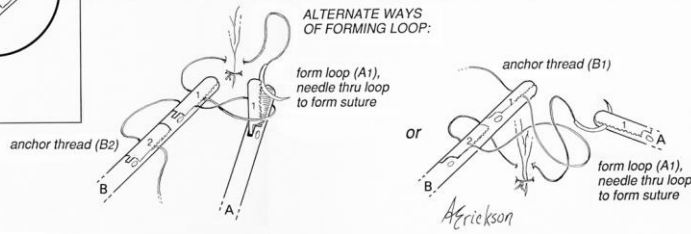
SURGEON'S KNOT (variation)



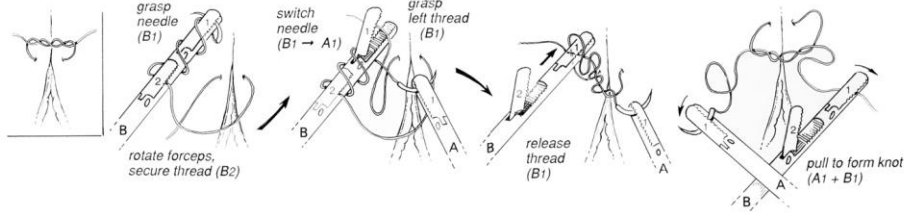
LAPAROSCOPIC SUTURE TECHNIQUE



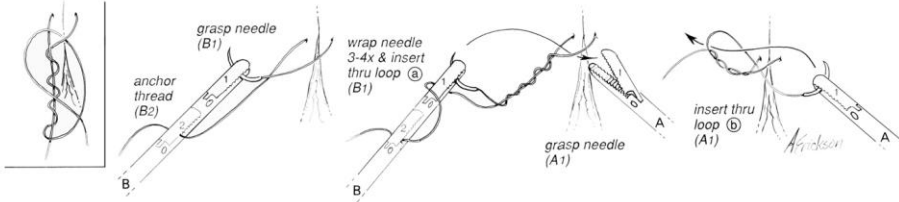
ALTERNATE WAYS OF FORMING LOOP:



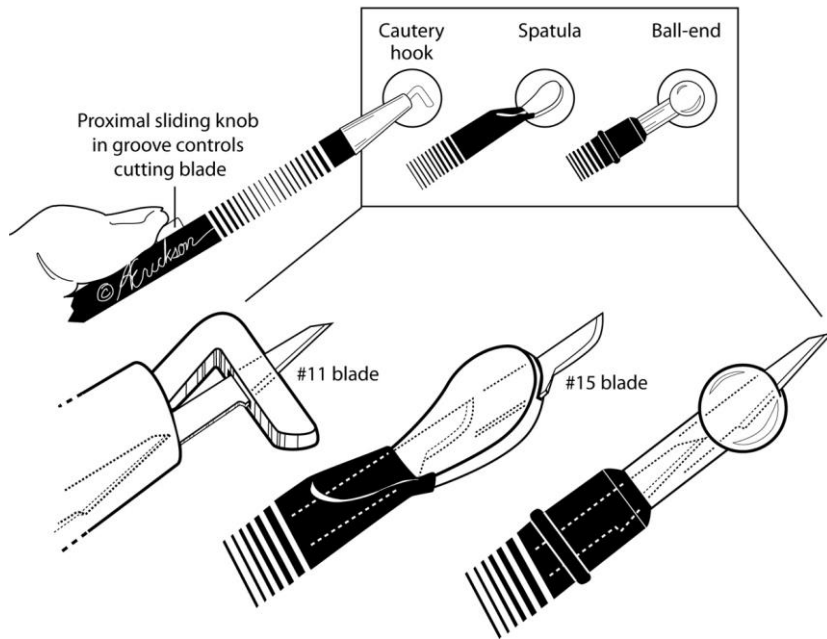
ROTATIONAL KNOT



CLINCH (Fisherman's) KNOT

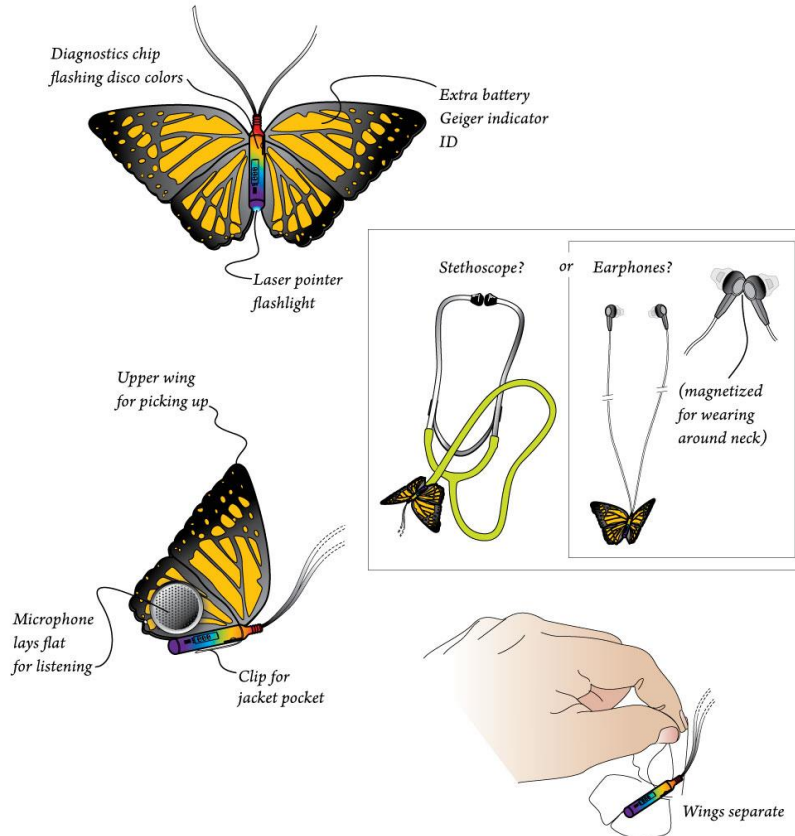
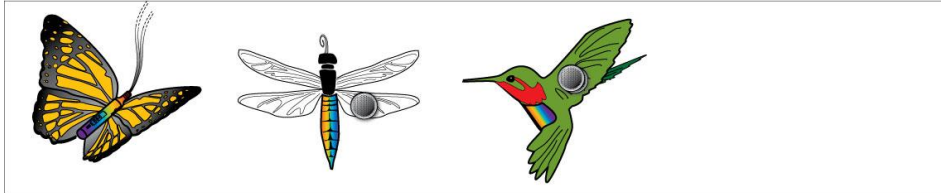


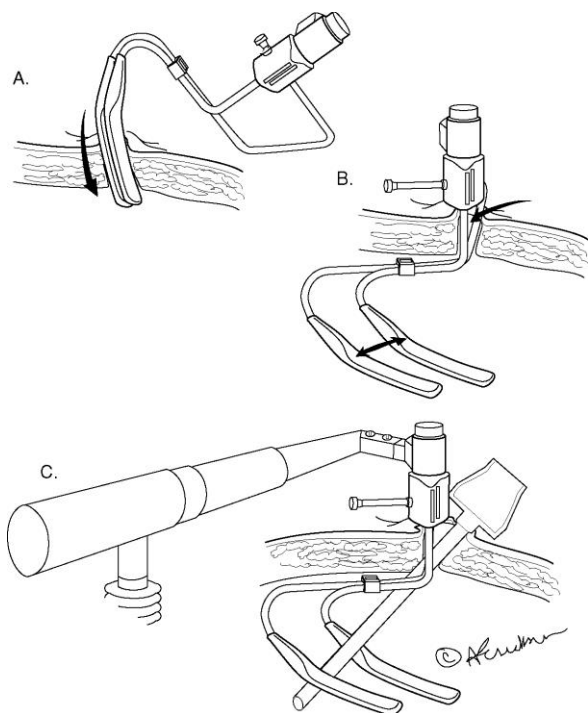
Dual-purpose laparoscopic tool
(addition of retractable cutting blade)

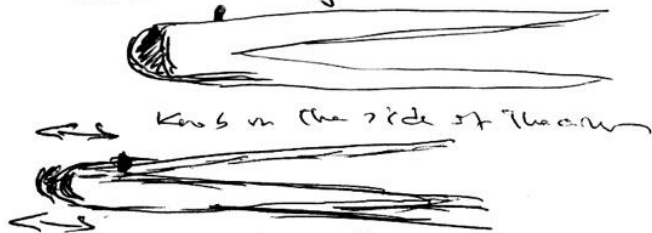
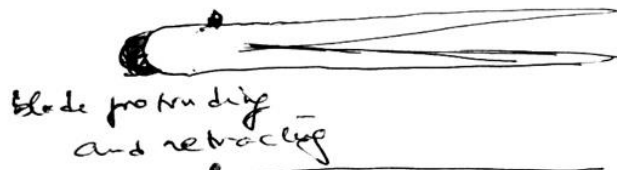


Pediatric "Faunascopes" (Stethoscopes)

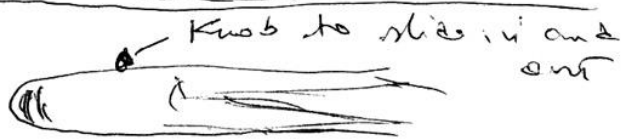
George Ferli MD, FACS
September 16, 2010



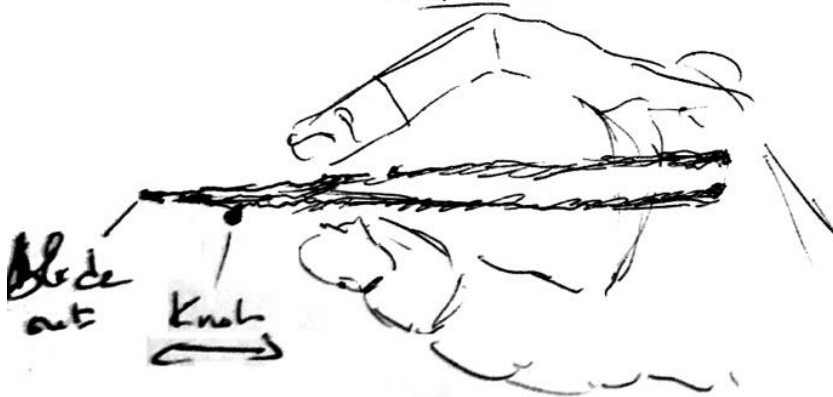




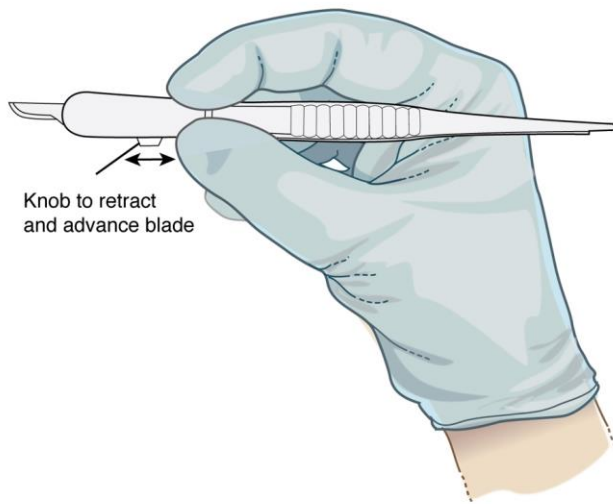
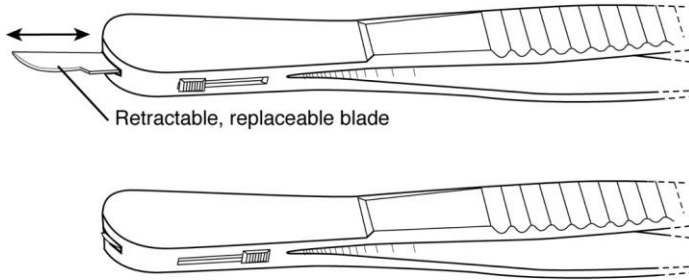
Side view



Top view

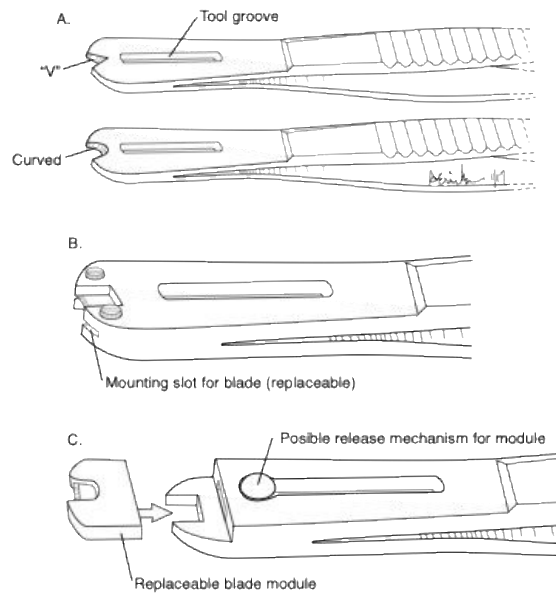


Retractable Blade Pickup:

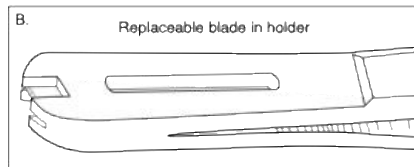
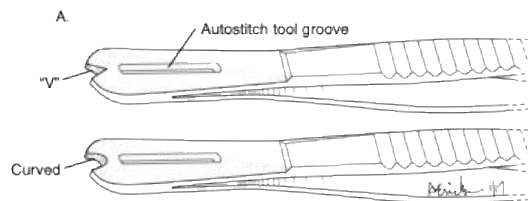


Africkson 2/17

Bladed and Grooved Pickup



Multi-Purpose Tool
(increased functionality for single surgeon use)



other side of debakey

sharp edges



Box with

Debakey ~~clamp~~
pick up
like in the outline
above

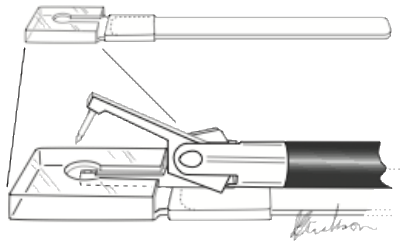
a V opening
sharp edges at
end of V to

act as a scissor
to cut sutures

on

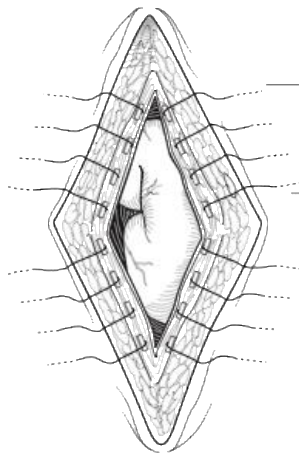
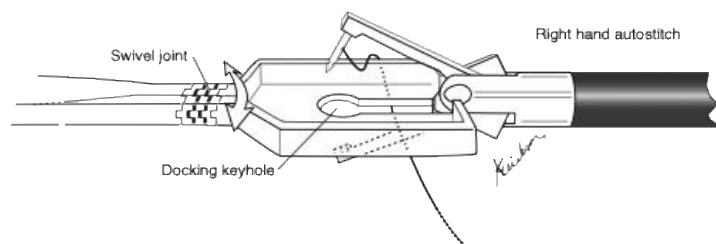
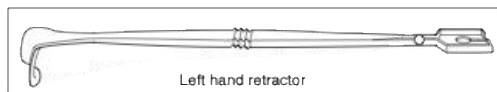


blade like
inner aspect
to cut
sutures

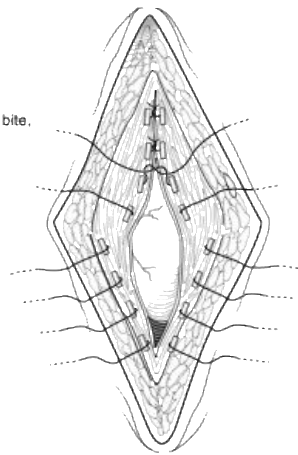


Optional disposable, clear plastic autosuture assist device.

Self Endostitch

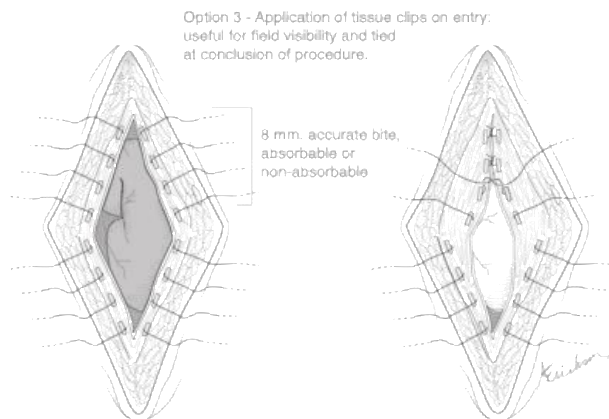
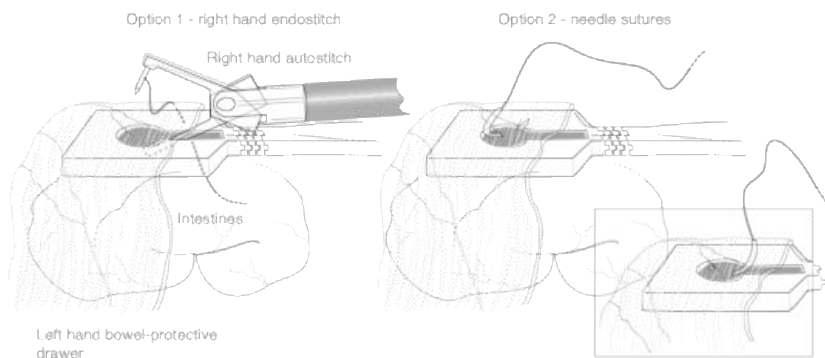
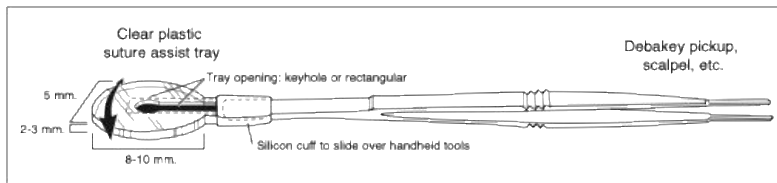


Application of tissue clips on entry: useful for field visibility and tied at conclusion of procedure.



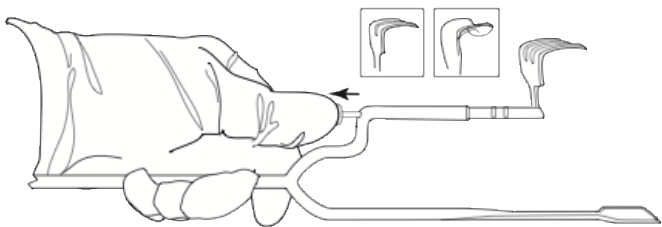
Trocar site closure

Suture Assist Device

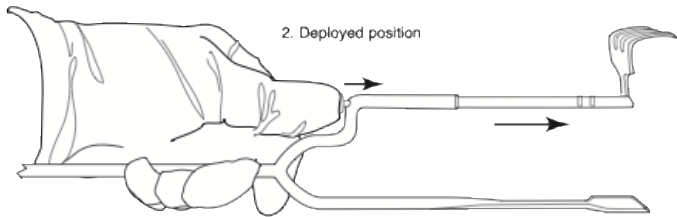


Multi-function Retractor

1. Non-deployed position

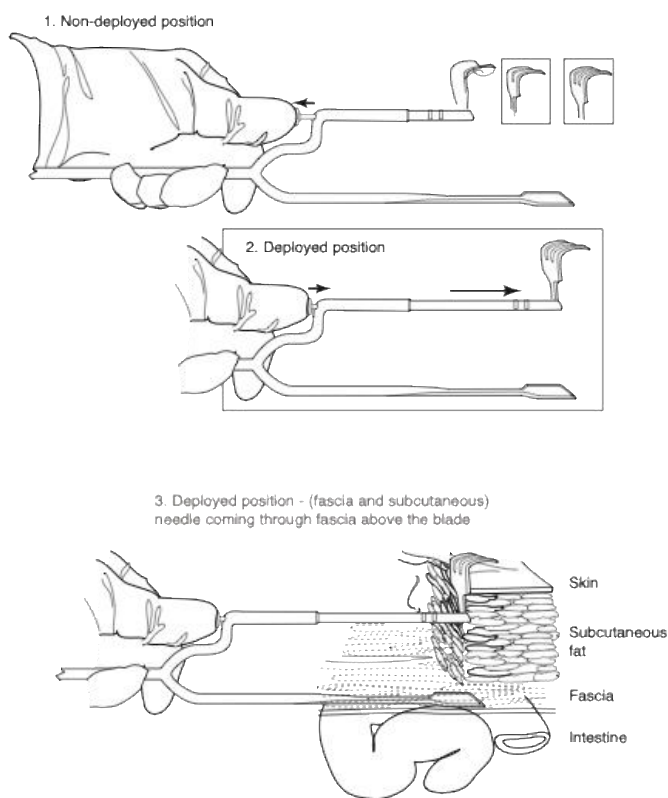


2. Deployed position

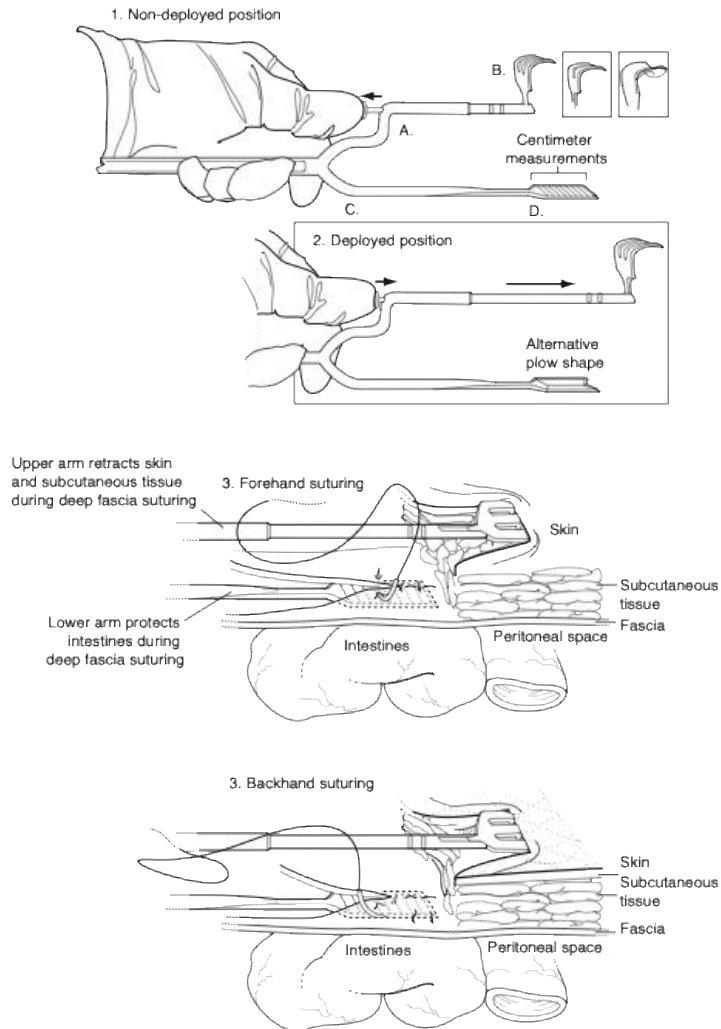


3. Deployed position - (fascia and subcutaneous)

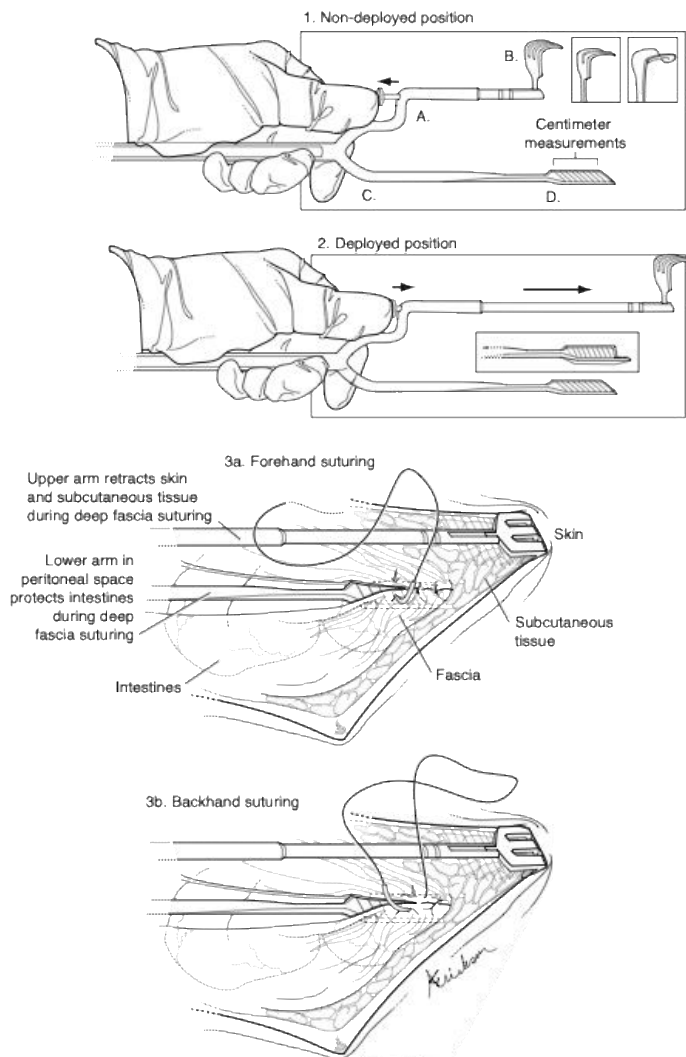
Multi-function Retractor

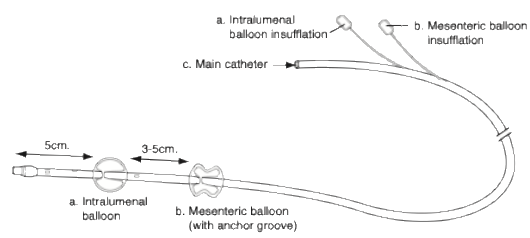


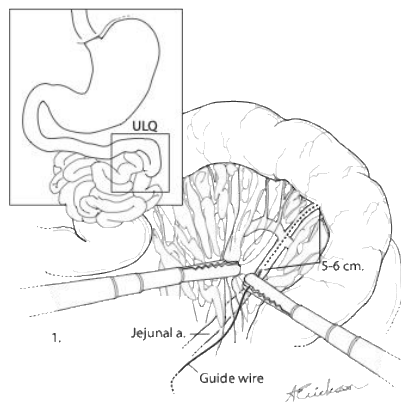
Dual-function Retractor



Dual-function Retractor







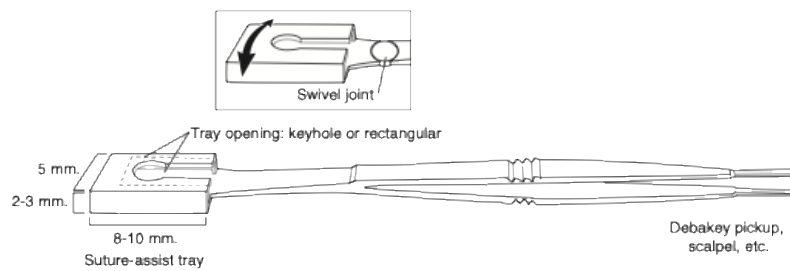
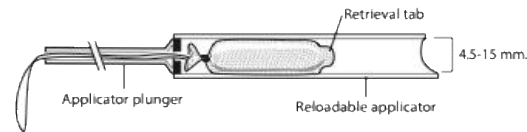
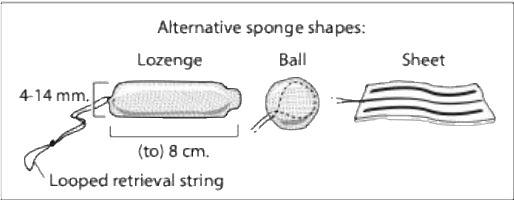
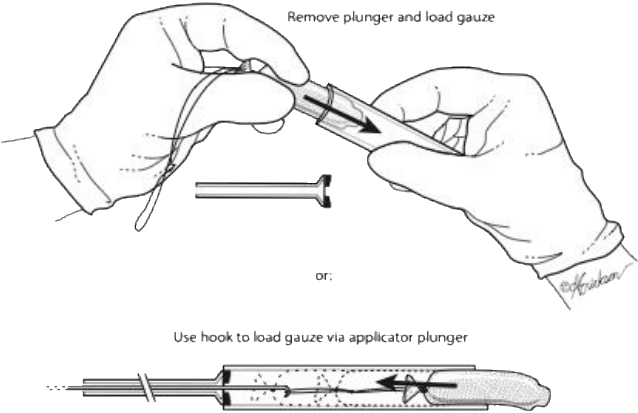


Figure 1. Suture Assist Device.

Tonsil sponge adapted to use in visual clearing of laparoscopic field



Loading gauze sponge:



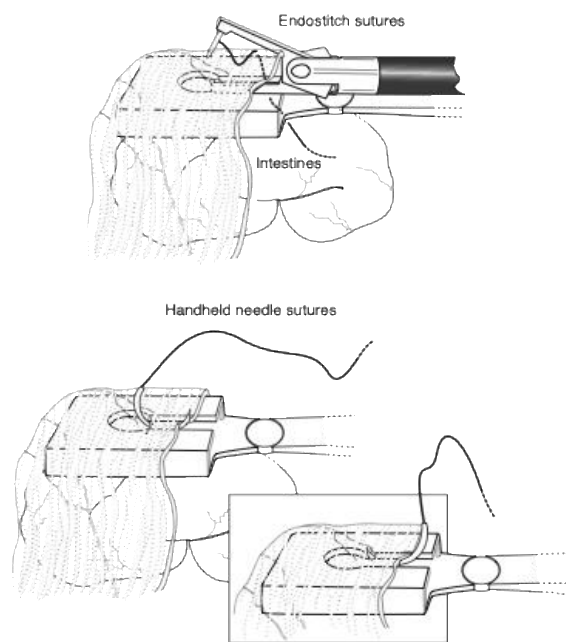
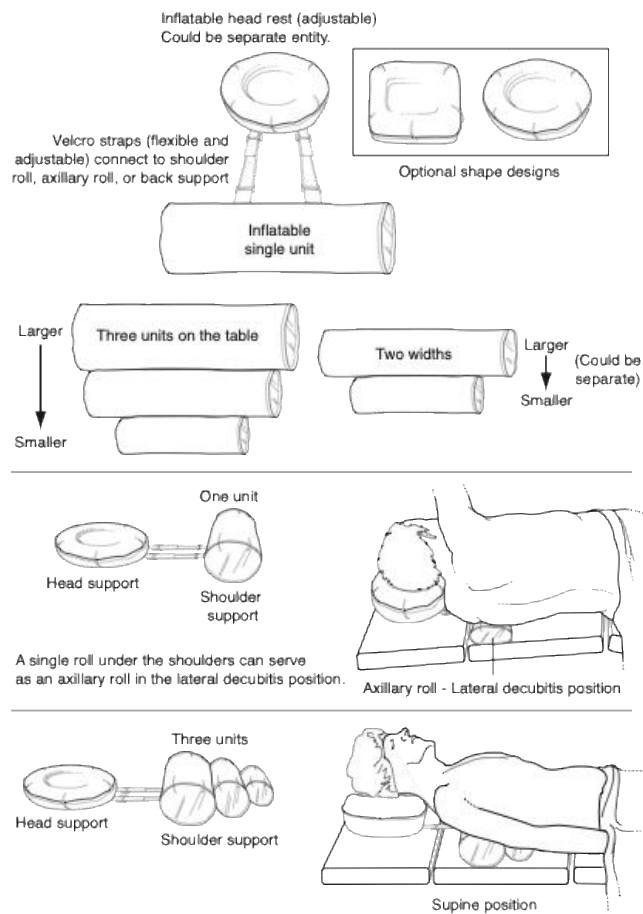


Figure 2. Abdominal fascial closure; needle or endostitch.

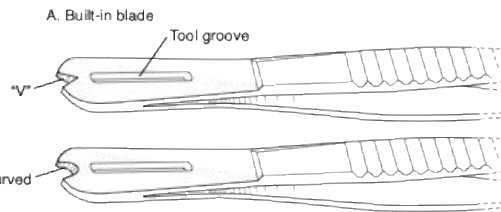
Adjustable Patient Surgical Support System for Safer Intubation and Patient Positioning



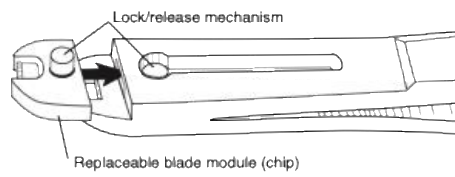
Adjustable patient surgical support system for safer intubation and patient positioning. The shoulder roll can be inflated via a foot pedal or hand-controlled remote up to 15 cm. in height, the pillow can be inflated as needed to 25-30 cm.

The same idea is applicable in the prone position except there will be two inflatable cylinders parallel to the body placed on each side and inflated along with the head rest.

Pickup End Options:

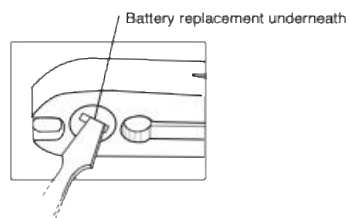
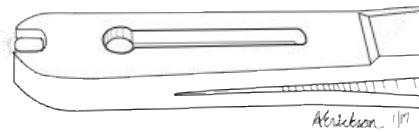


B. Replaceable blade*

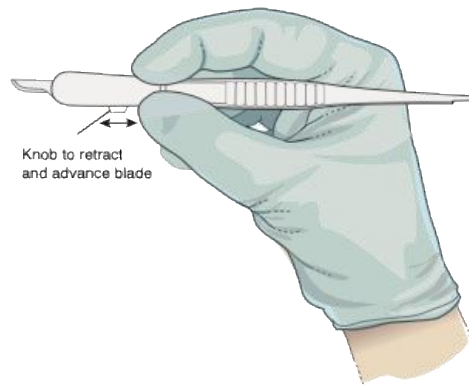
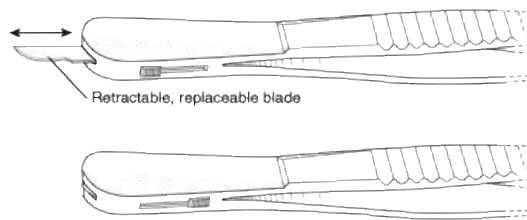


* One, of several possible mechanisms of lock/release.

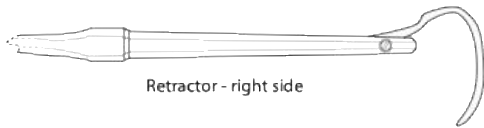
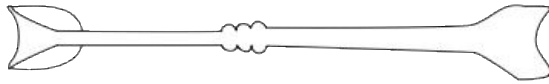
C. Alternate flashlight end



Retractable Blade Pickup:



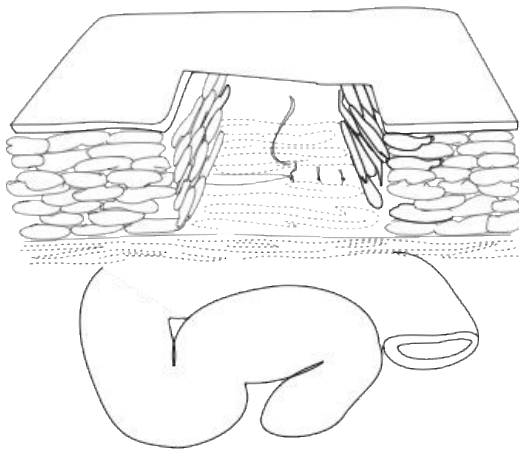
Atkinson 2/17



Retractor - right side



Retractor - top



Retractor

Skin

Subcutaneous fat

Fascia

Intestine

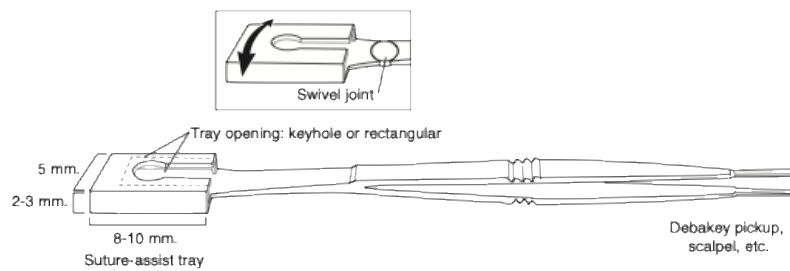
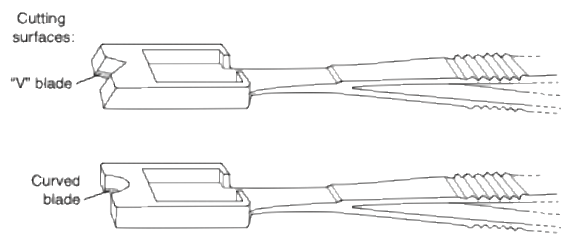
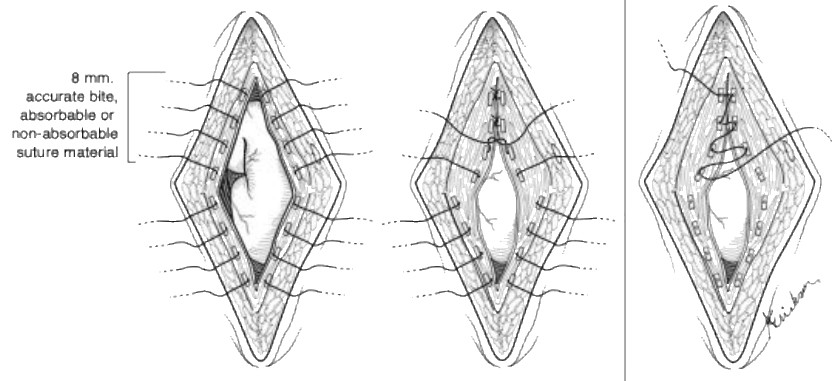


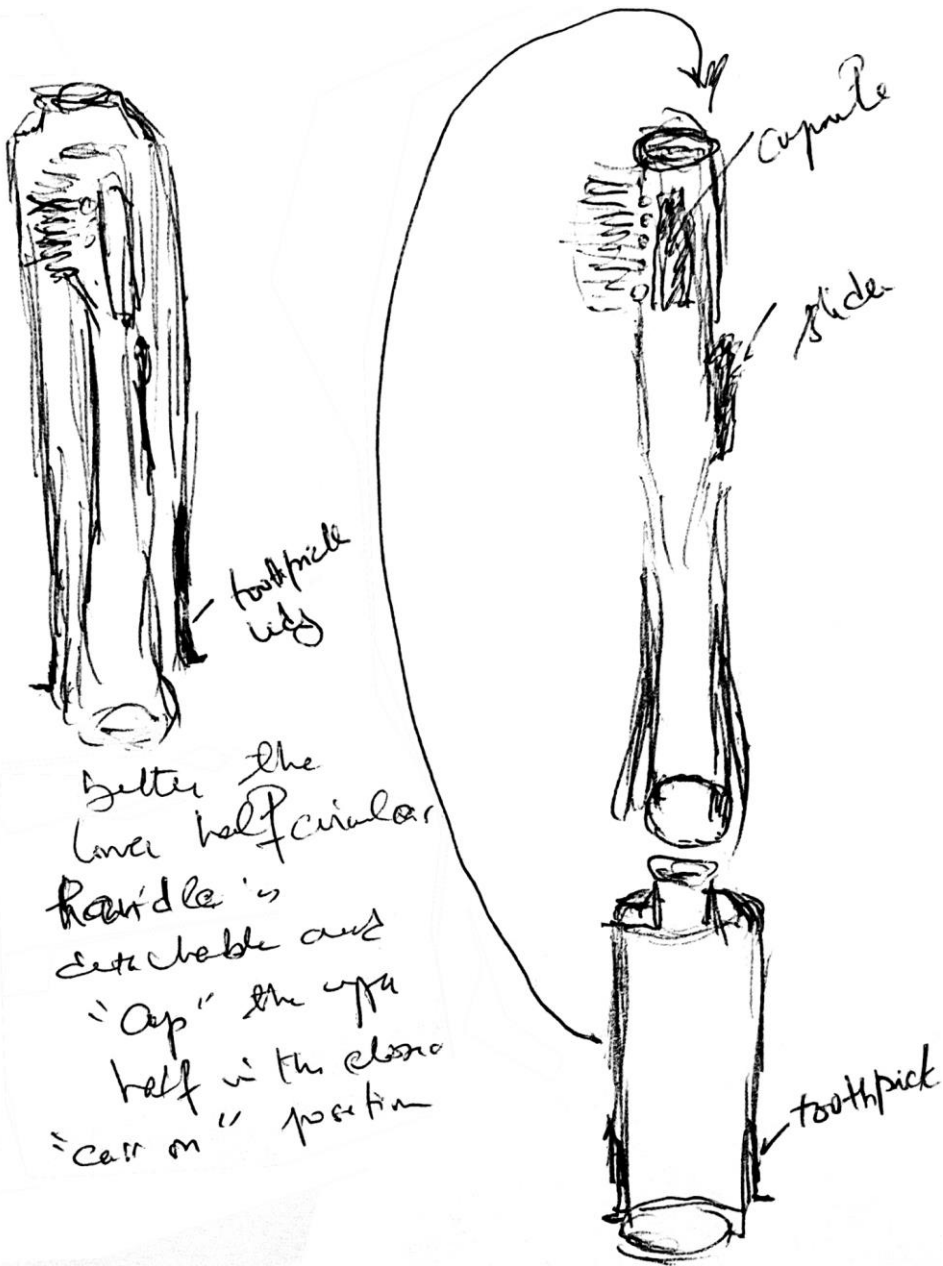
Figure 1. Suture Assist Device.

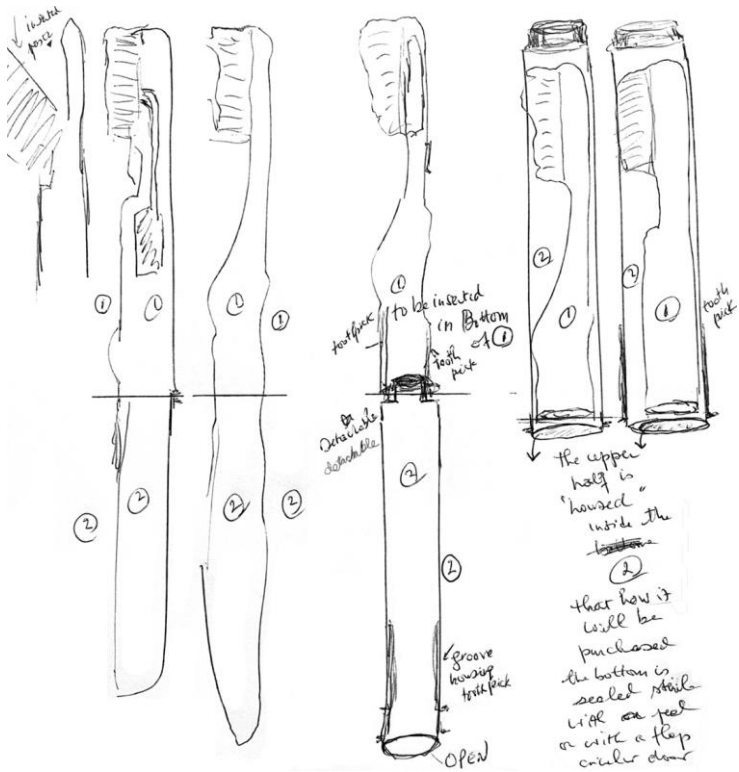
Suture Assist Tray;
(mounted on Debakey pickup, scalpel)

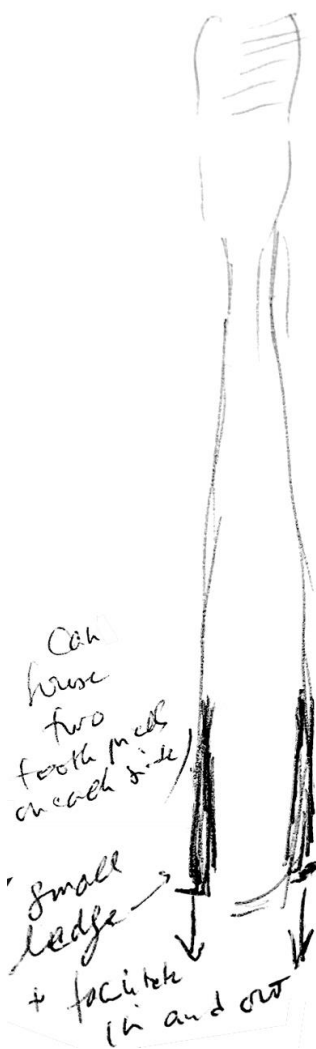




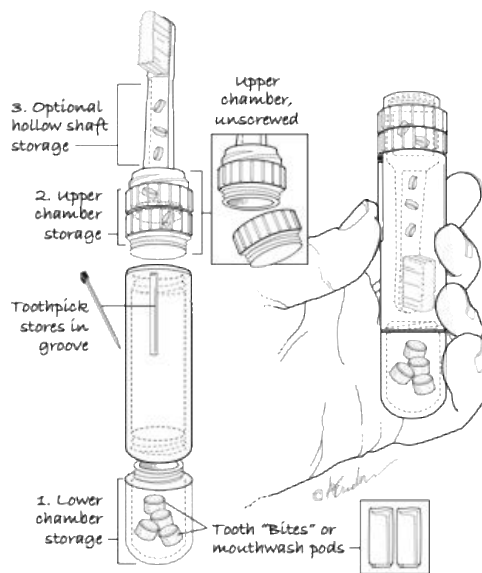
Laparotomy site closure: Application of tissue clips on entry: useful for field visibility and tied at conclusion of procedure (either interrupted or continuous).



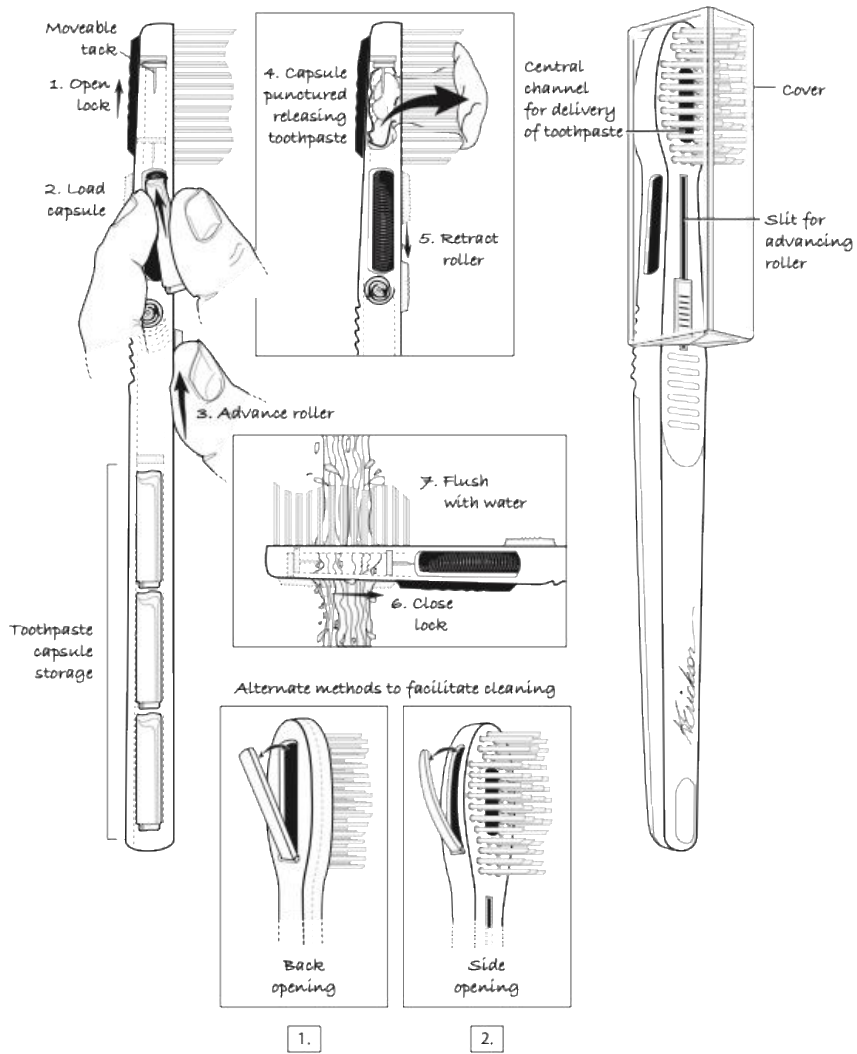




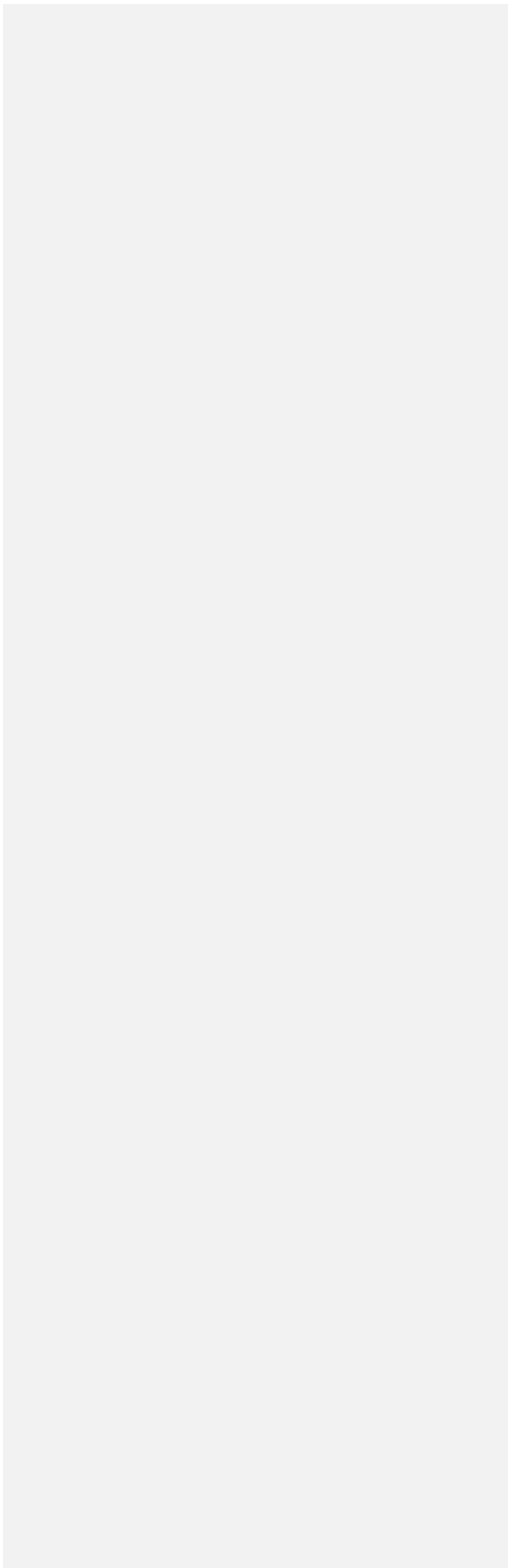
Portable toothbrush with storage for pills,
tooth "Bites" or mouthwash



Single Dose Toothpaste Dispenser



Lebanon





Lebanon has become a hijacked state
at best and more realistically, a
disposable pawn for the rats.

Justice must prevail. Corruption must end.

The rats must be flushed. ❤️ 🇱🇧



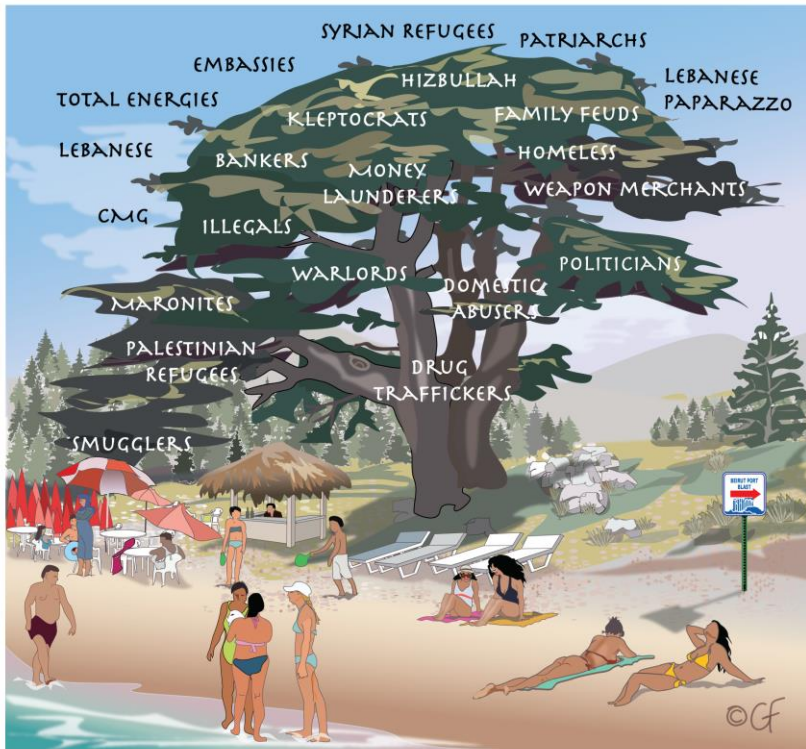


"Lebanon Strong"



Friendly fire.

"BEAUTIFUL" LEBANON



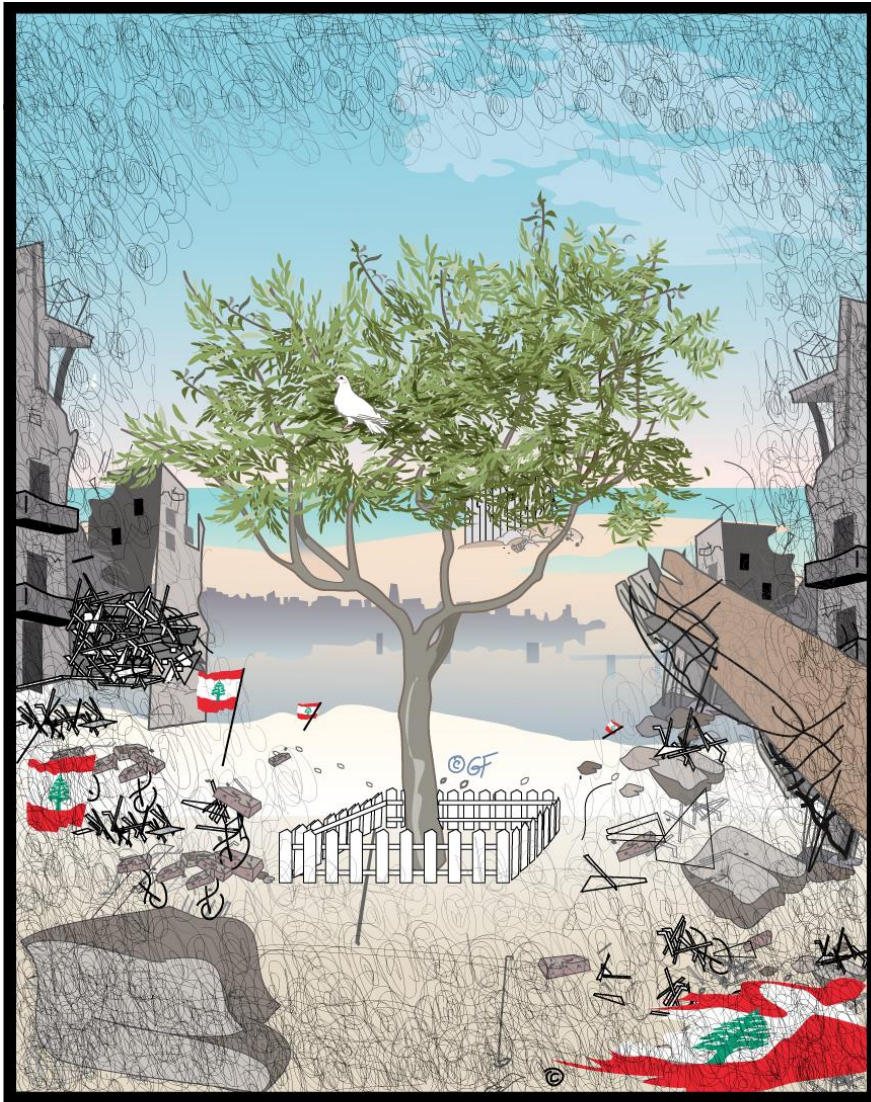












If we grow from the wreckage, the lost lives
will not be for naught.



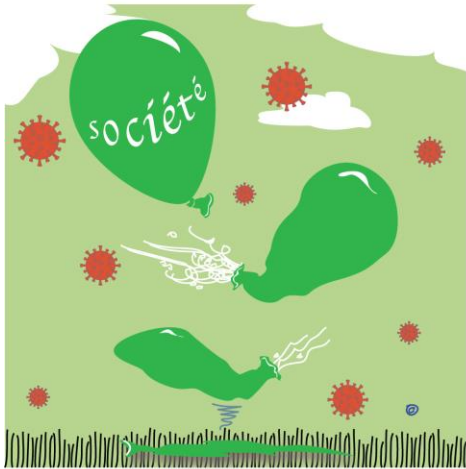
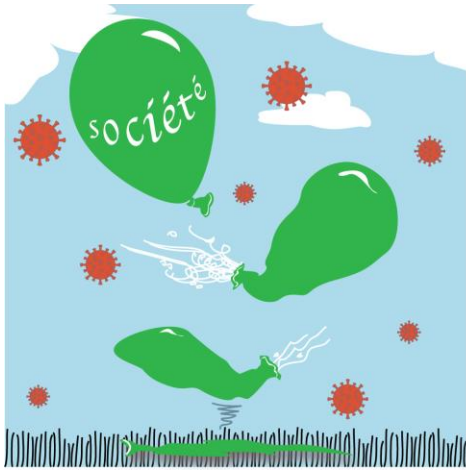




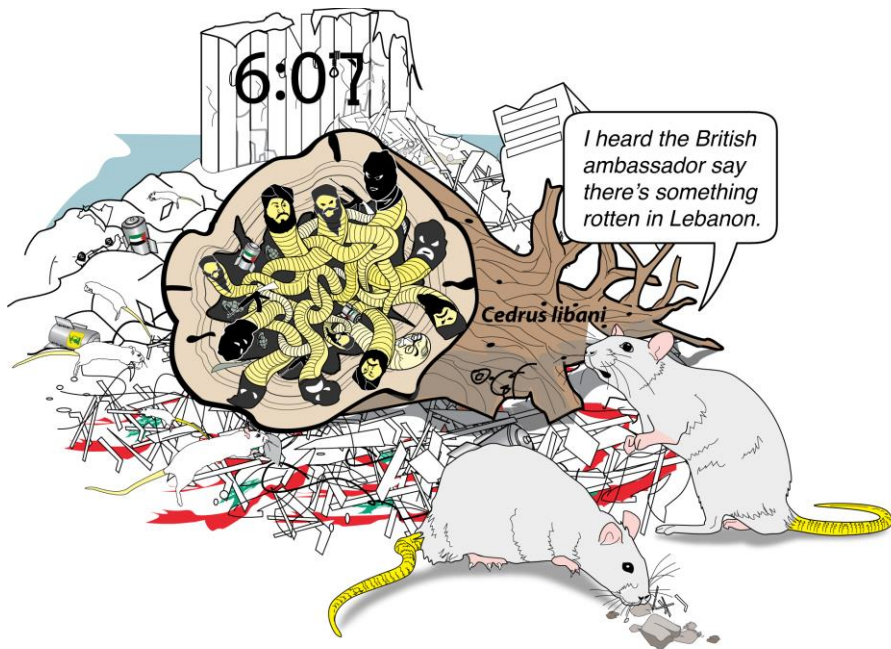
Troubled waters without escape - no government on duty.



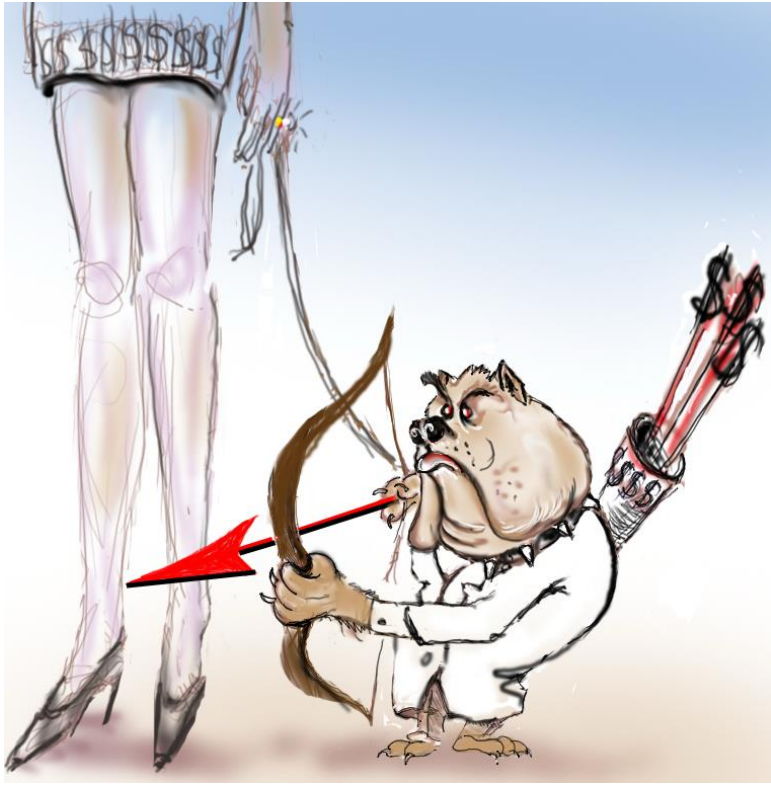
















Fair elections? 🤔 🇸🇩

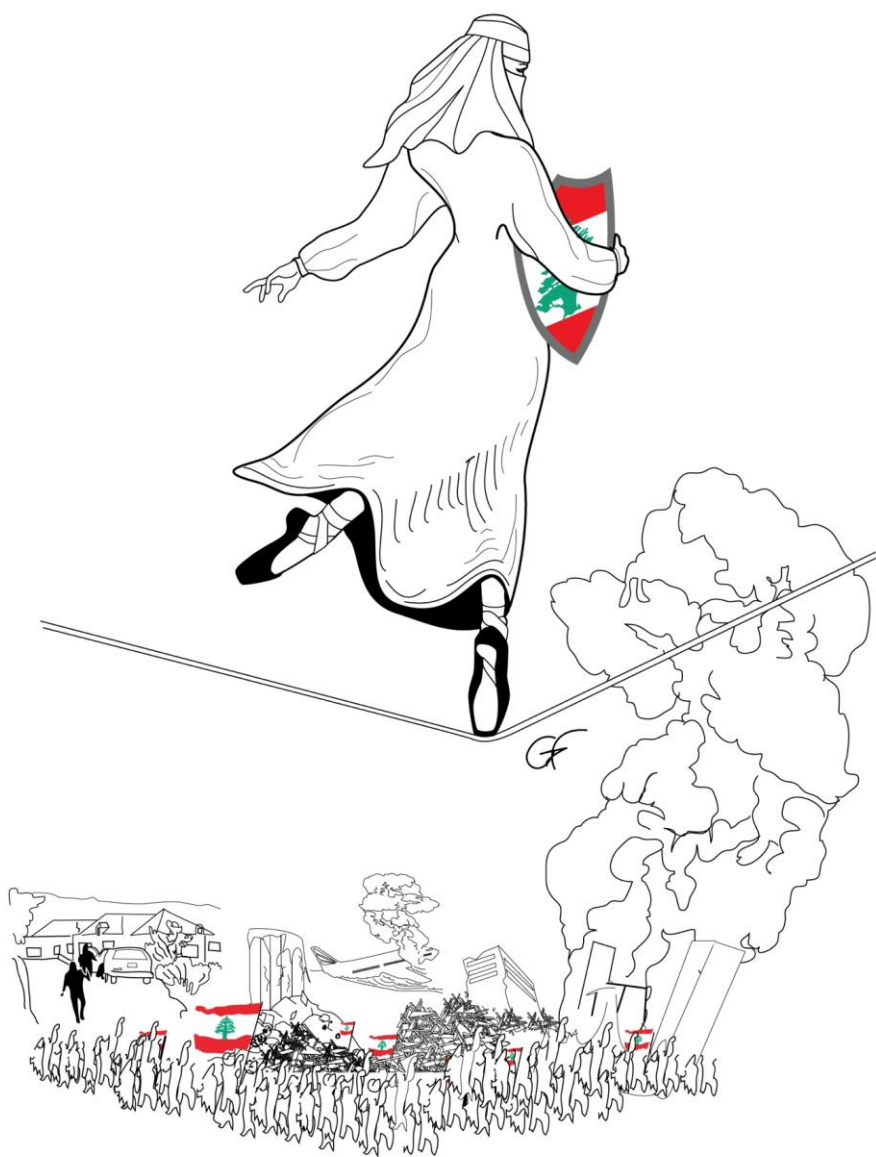


Fair elections? 😬



Independence Day? 🤔 🇱🇧

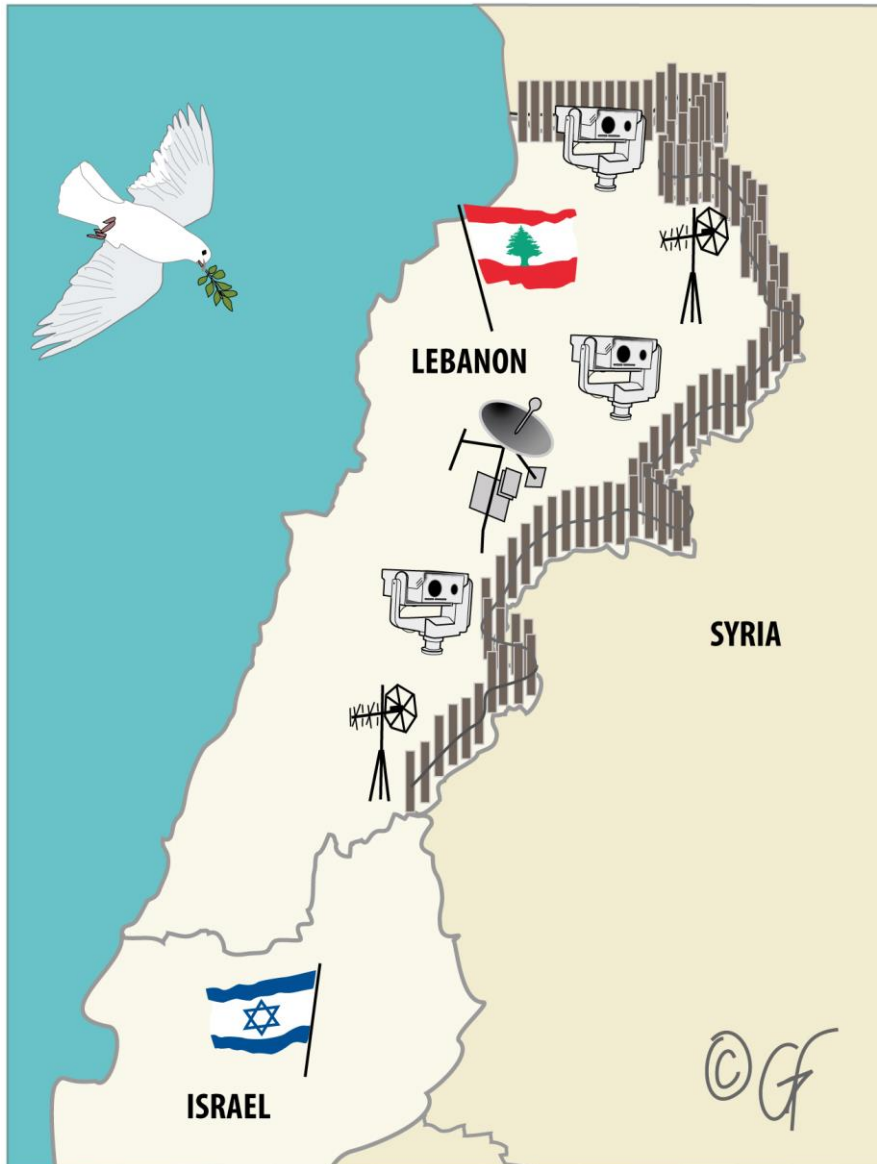




Absent a steadfast, foolproof, solid, and monitored control of the border between Lebanon and Syria, there will be no reprieve for Lebanon and consequently none to Israel.



Absent a steadfast, foolproof, solid, and monitored control of the border between Lebanon and Syria, there will be no reprieve for Lebanon and consequently none to Israel.



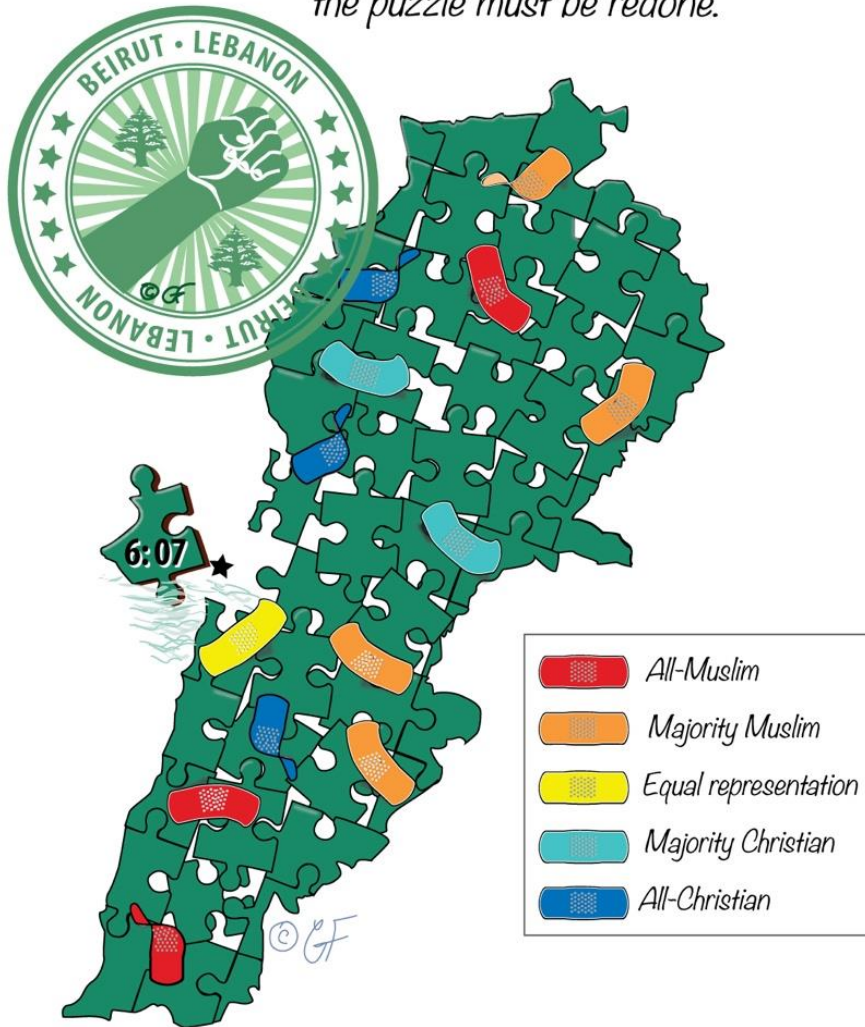


*At this point, Lebanon could even try an exorcism.
#savelebanon #whateverittakes*

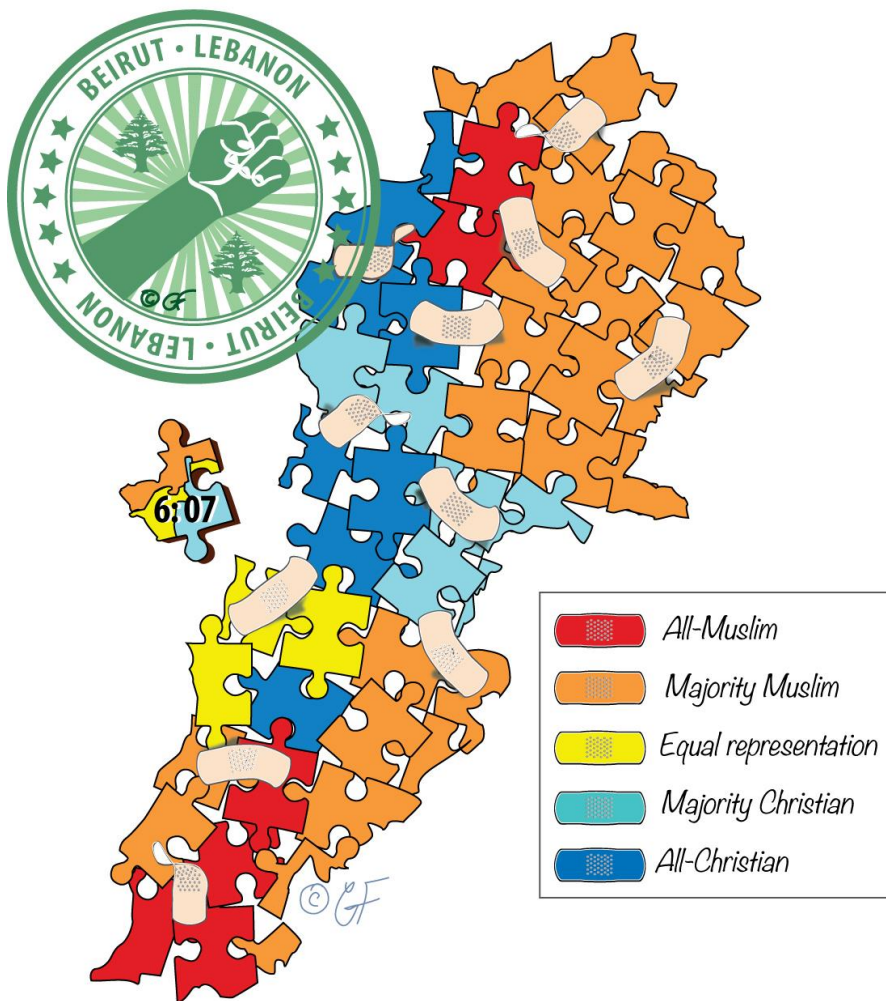
6:07 



*Lebanon - band-aids can't keep the pieces together;
the puzzle must be redone.*



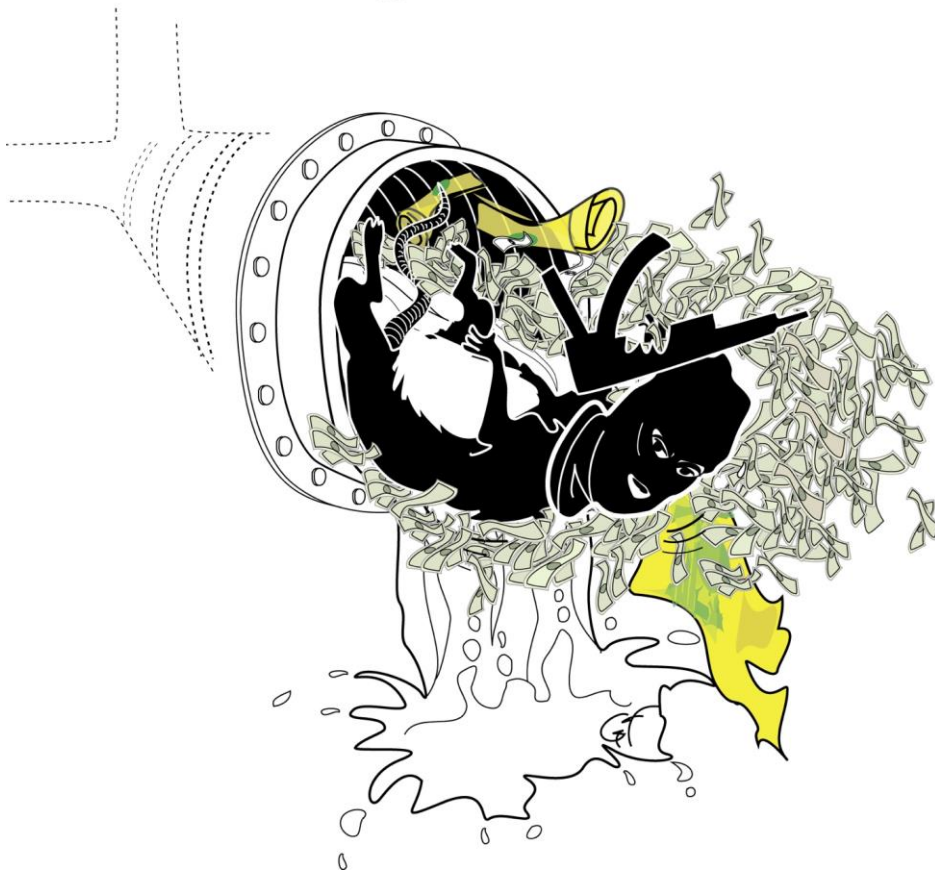
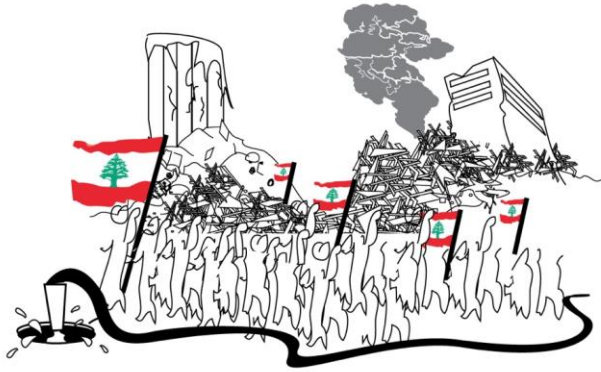
*Lebanon - band-aids can't keep the pieces together;
the puzzle must be redone.*







Flush the Rats!!!





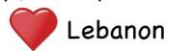
It really is time.



Lebanese factions are stuck in a soccer game, each pursuing his own ball with no common goal: **CHAOS!**

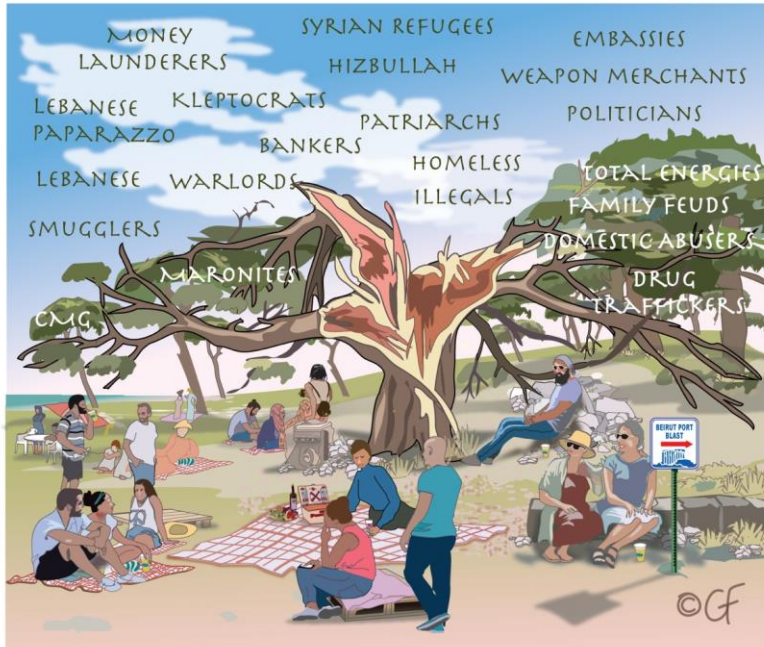


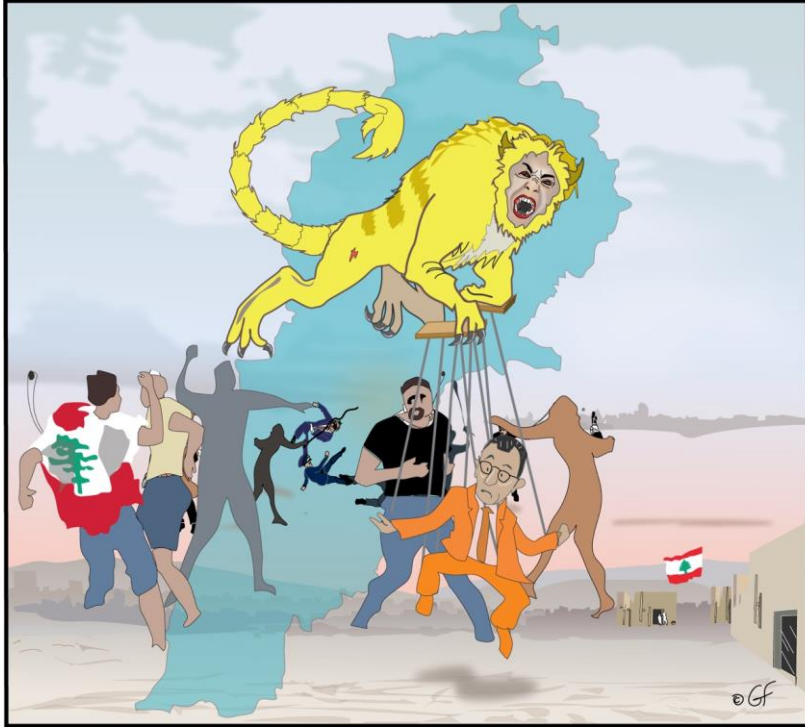
Happy Independence Day





AHLA BAL' AD



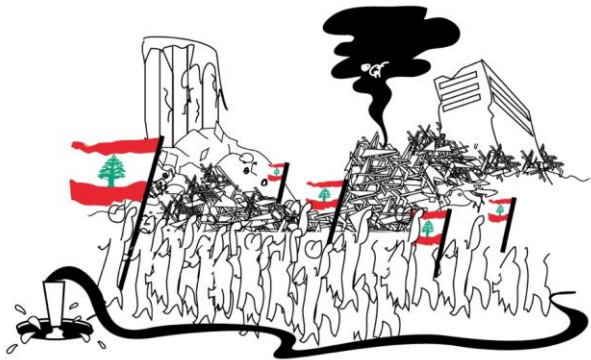






After Salvador Dali.

Flush the Rats!!!





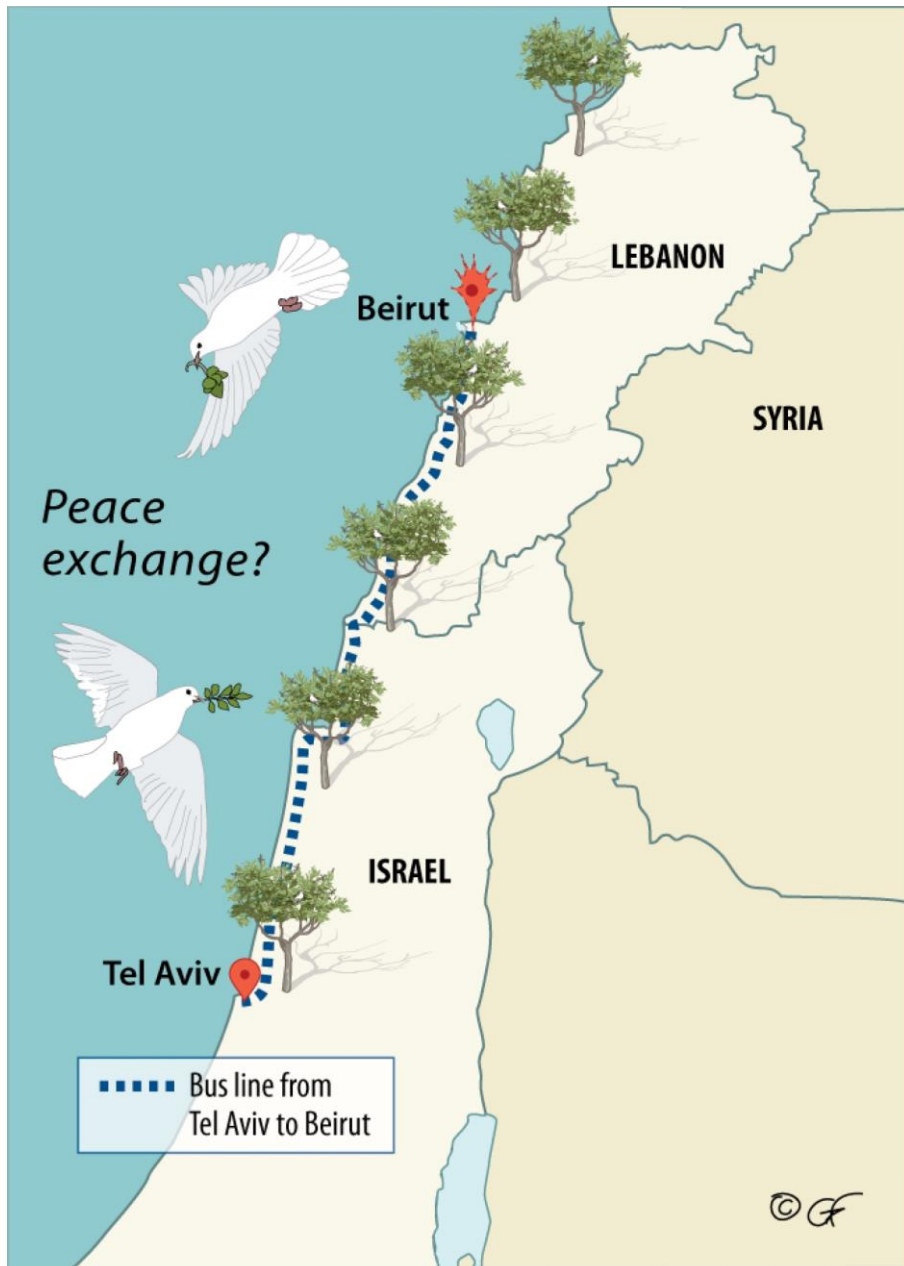


Welcome to Lebanon.



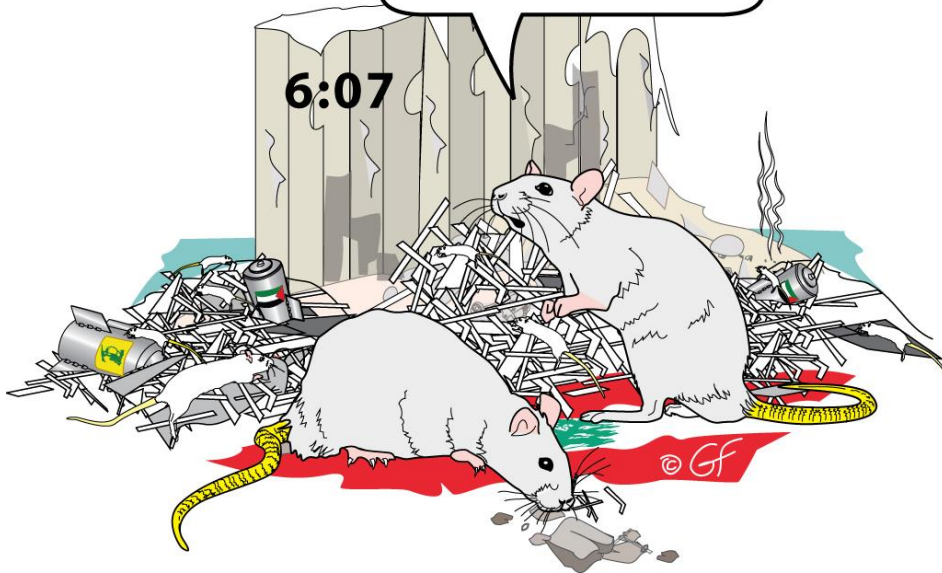
Oxygen tribes



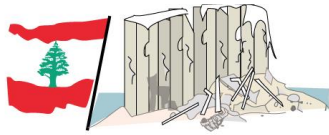


*I heard the British
ambassador say
there's something
rotten in Lebanon.*

6:07







6:07

