

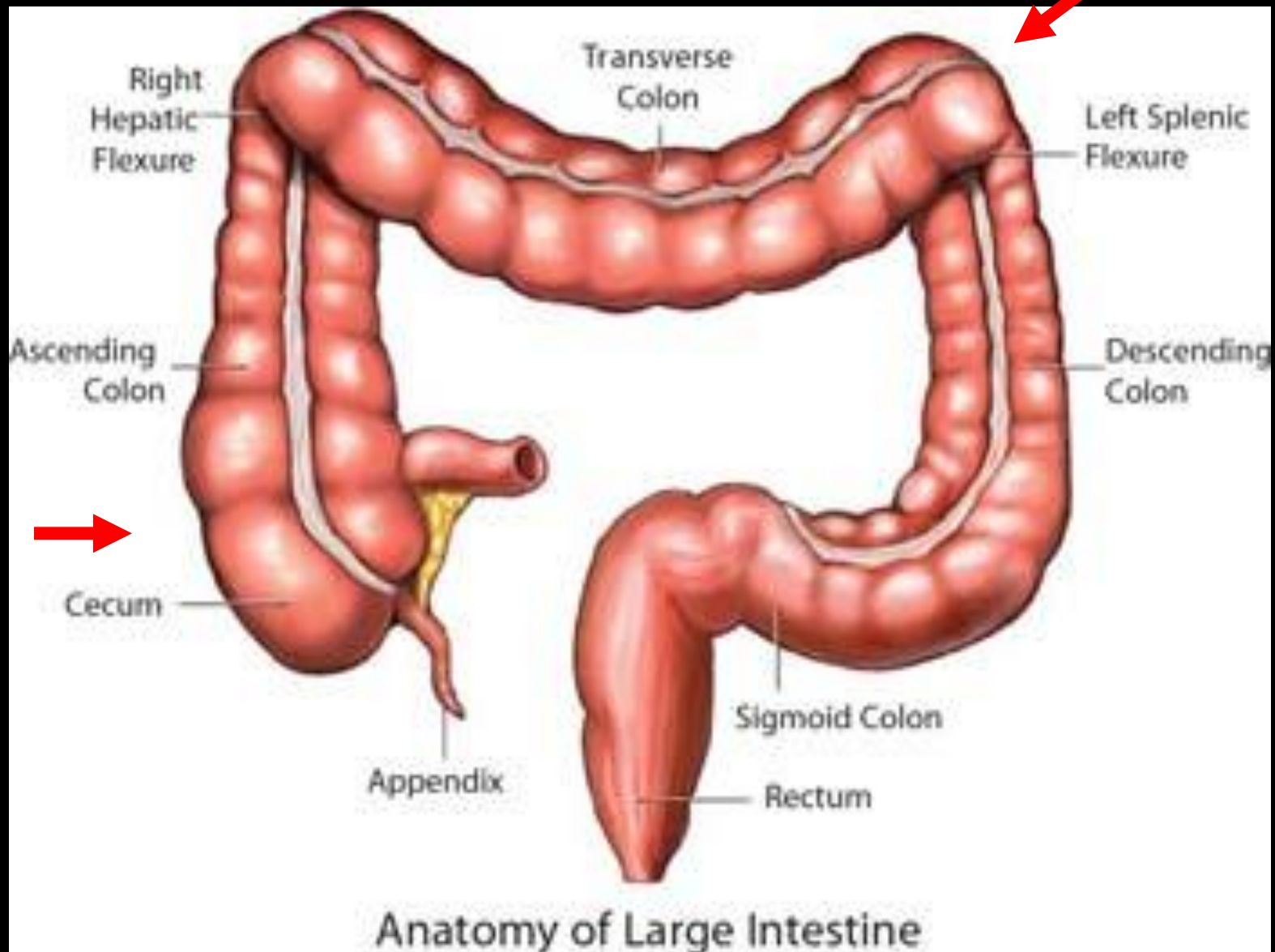
大腸直腸癌：外科治療
Surgical Aspect of Colorectal
Cancer

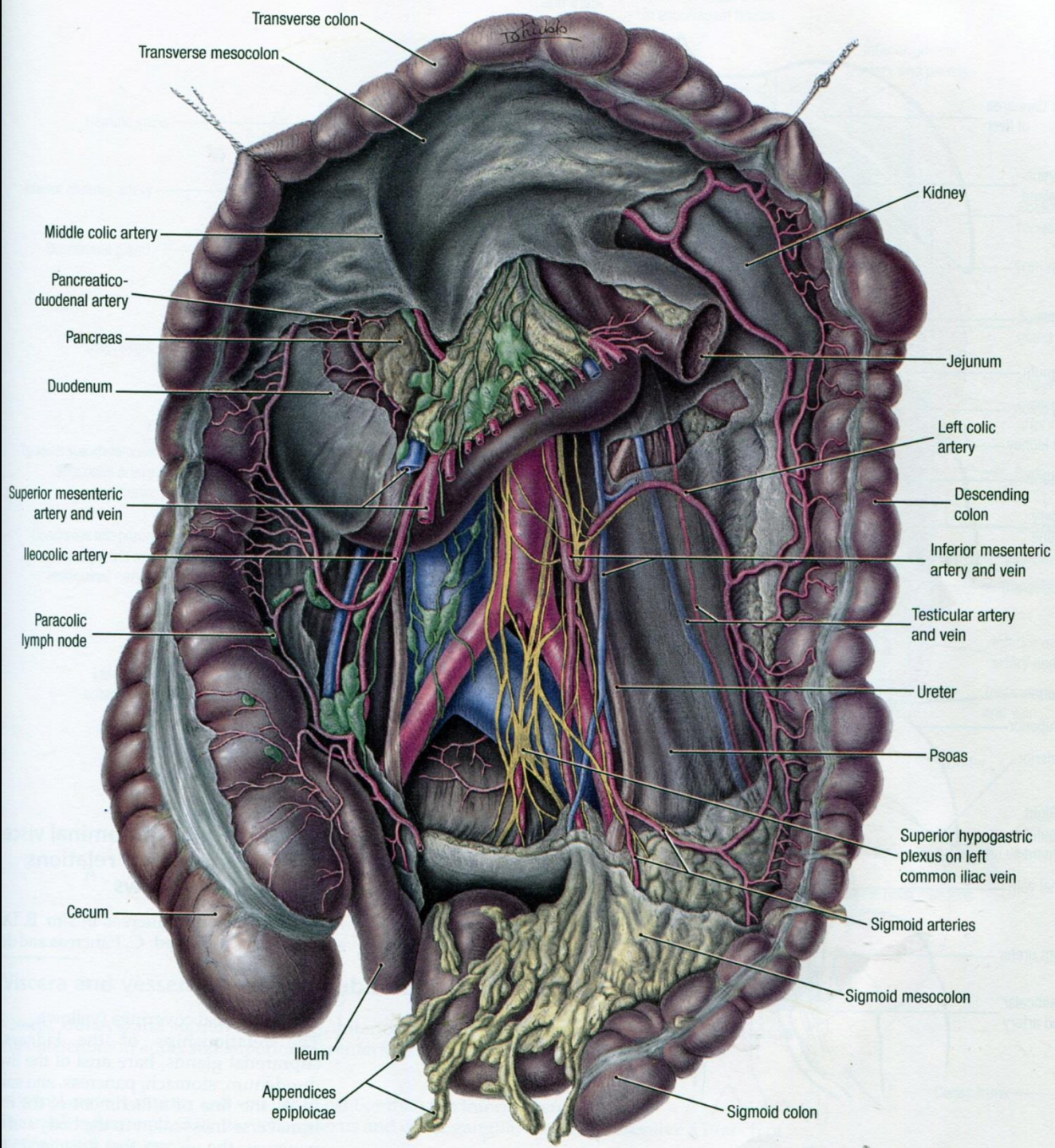
台大醫院雲林分院
一般外科及大腸直腸外科
廖御佐醫師
2013-12-07

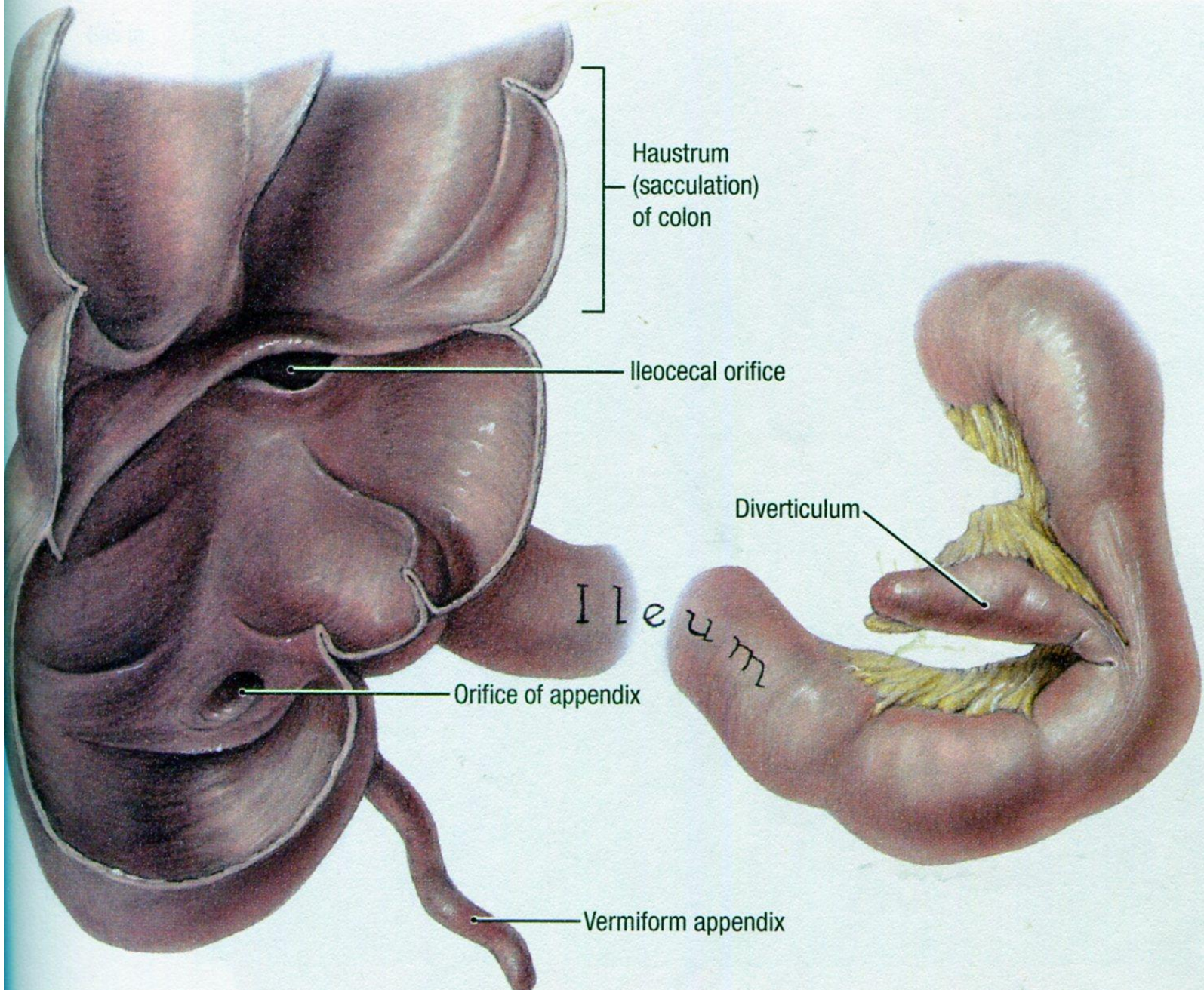
大綱

- 解剖學
- 傳統開腹手術
- 腹腔鏡手術video
- 達文西機器人手術
- 結論

腹腔解剖圖







Haustrum
(sacculum)
of colon

Ileocecal orifice

Diverticulum

Ileum

Orifice of appendix

Vermiform appendix

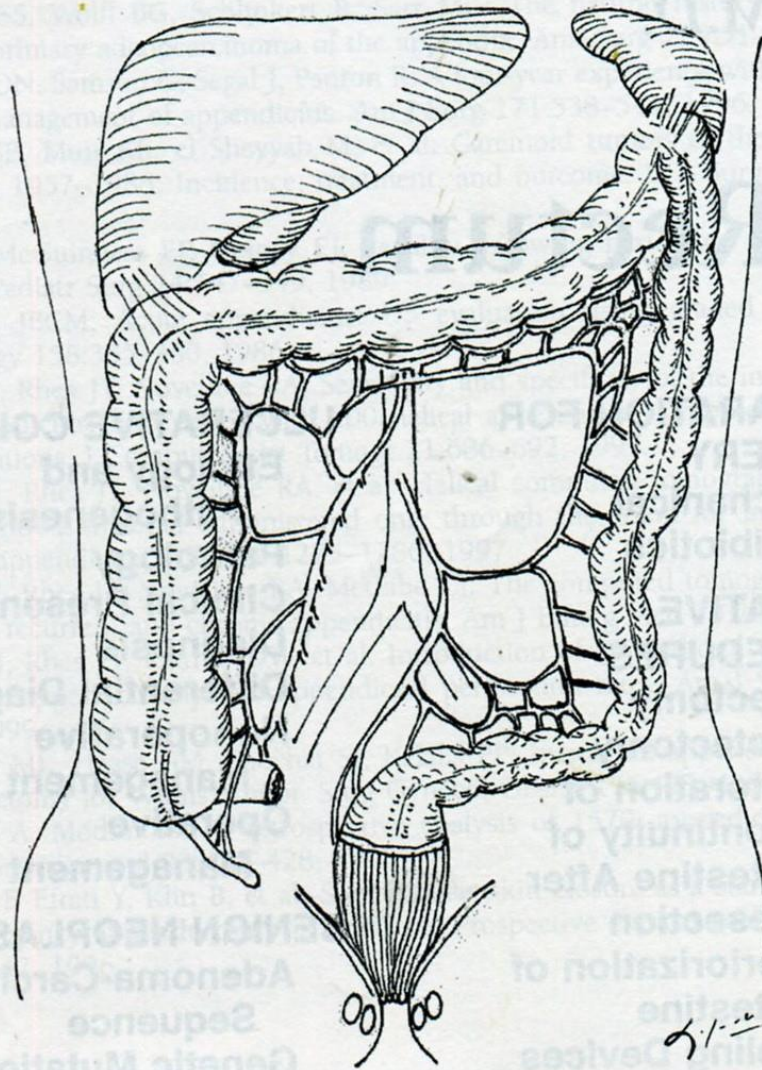
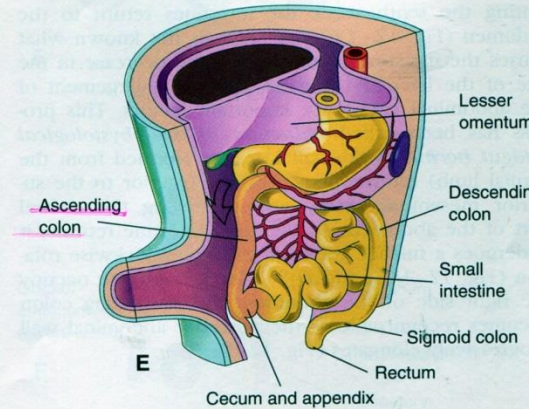
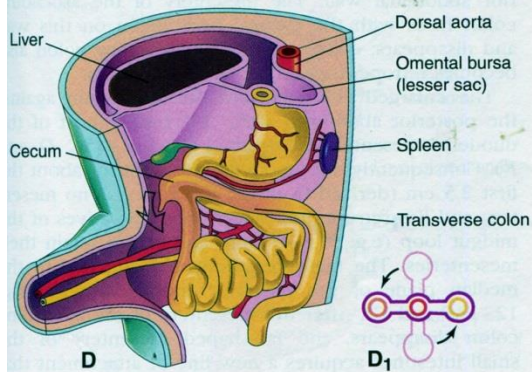
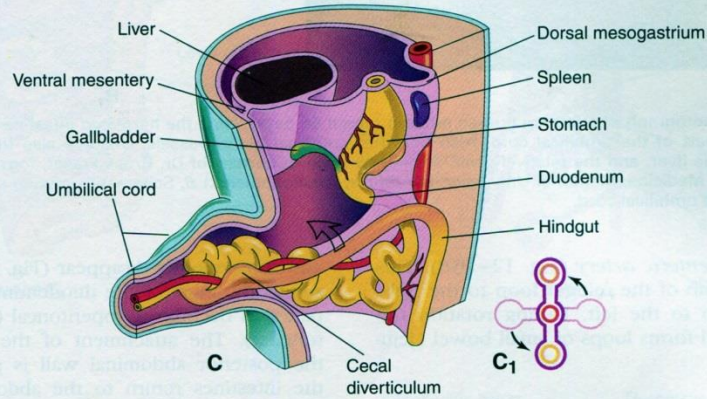
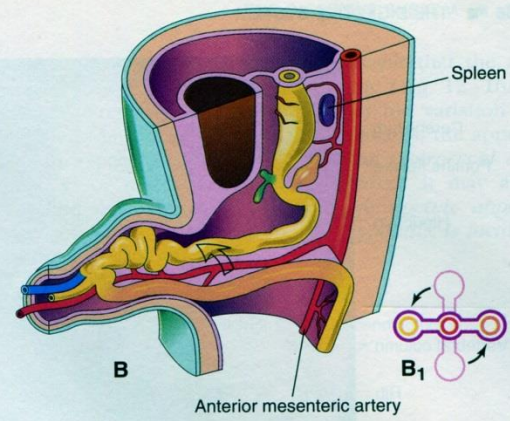
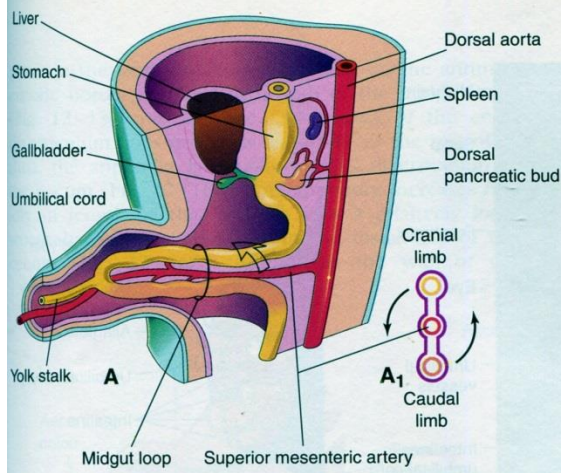
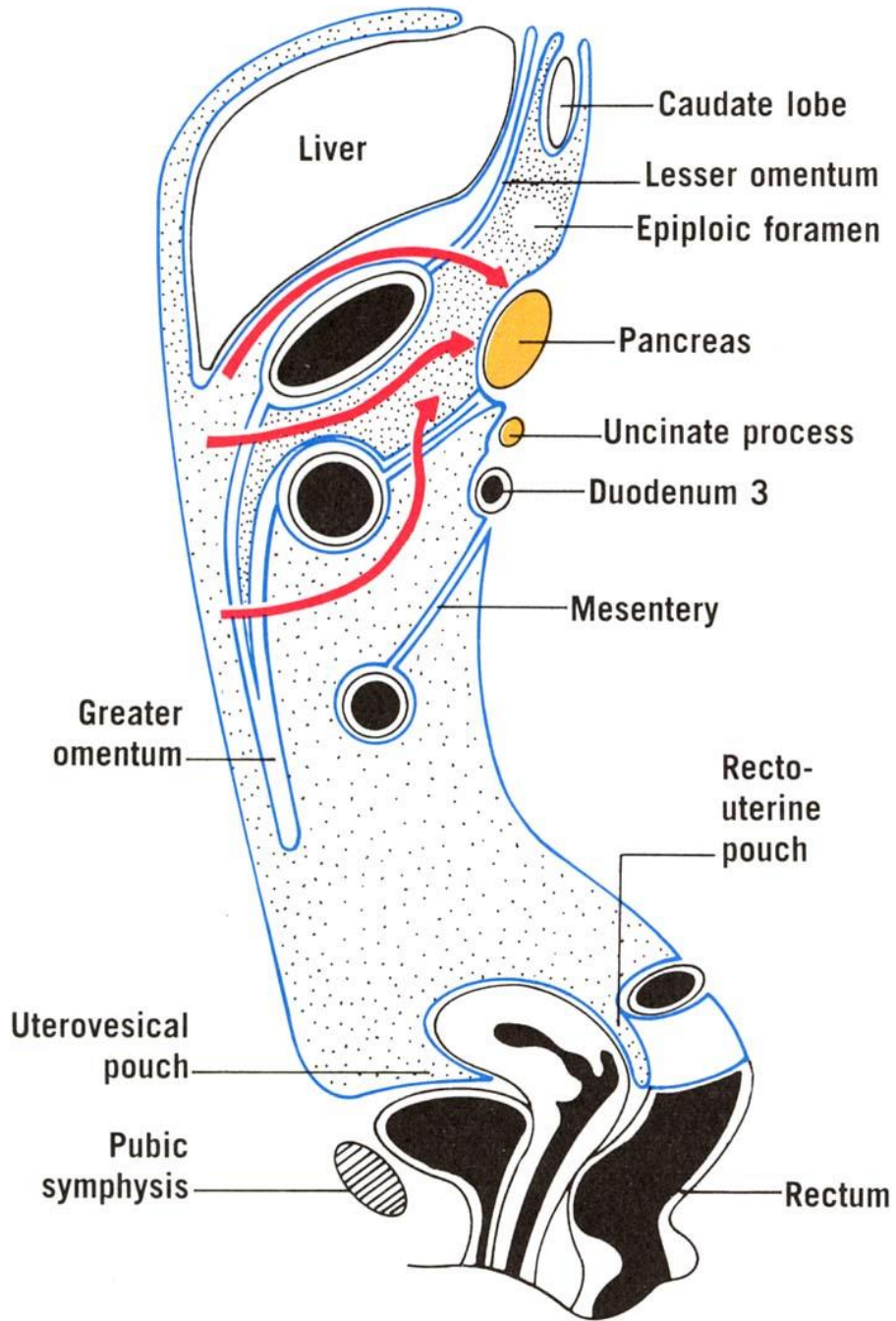
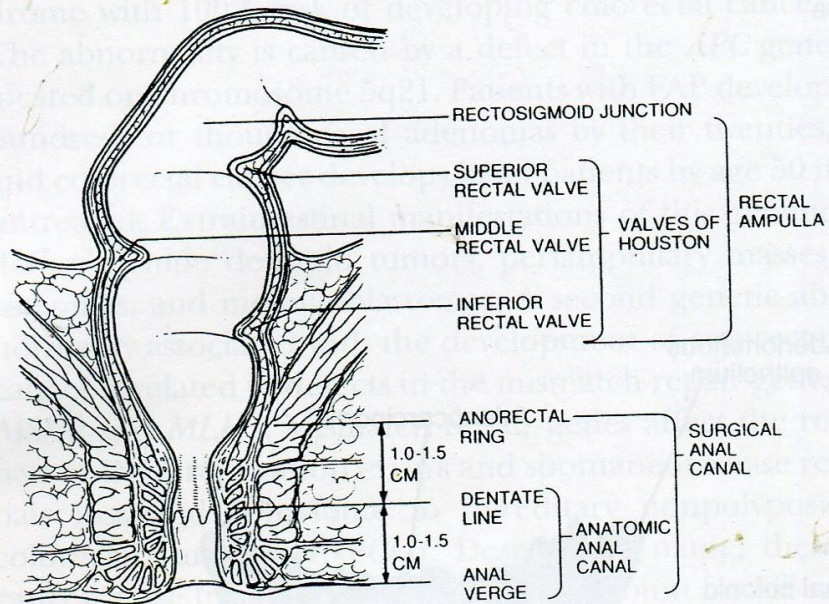


Figure 46-1. Anatomy of the colon and rectum: coronal view. Illustrated are the differences in diameter of the right and left colon, the much higher location of the splenic flexure compared with the hepatic flexure, and the extraperitoneal nature of the pelvic rectum. In addition, the two main sources of blood supply to the colon are shown: the superior mesenteric artery, supplying the right colon via the ileocolic, the right colic and the middle colic arteries, and the inferior mesenteric artery, via the sigmoid arteries and the superior rectal artery. Both vessels join via the arch of Rioli and the marginal artery of Drummond.

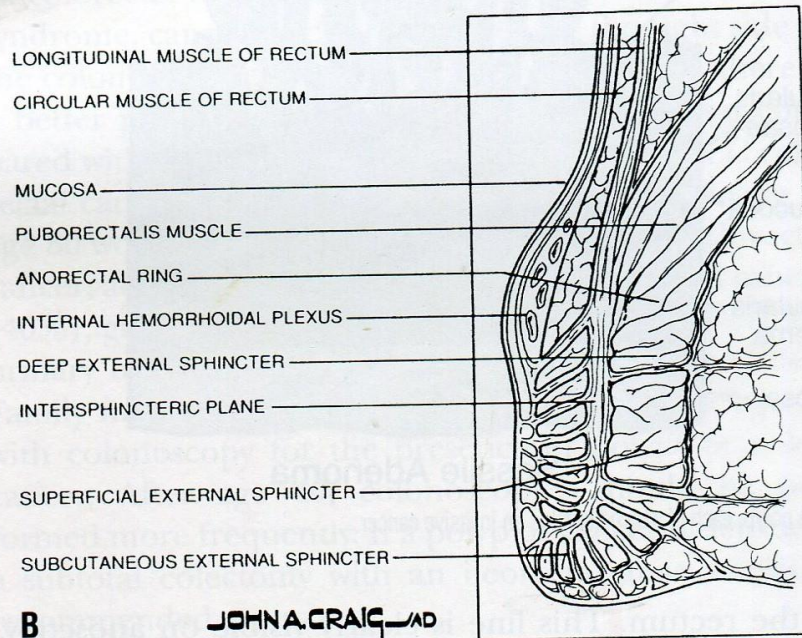


逆时针 270°





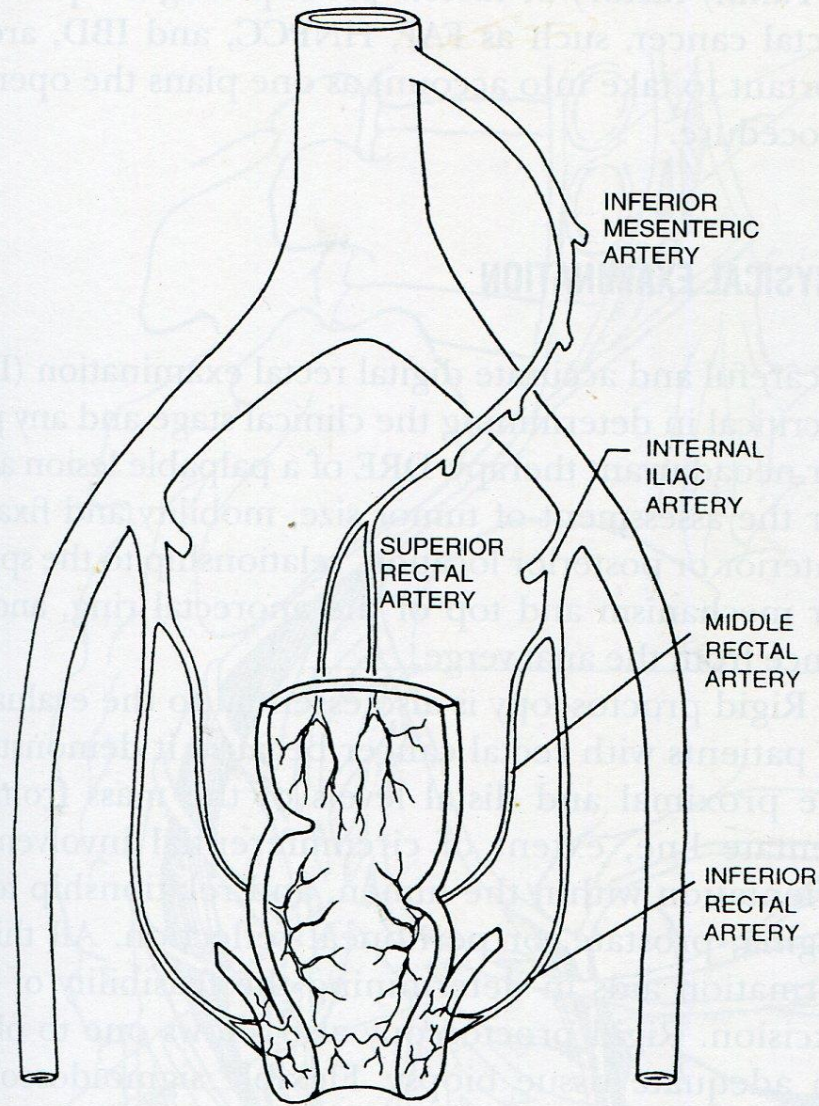
A



B

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Figure 25-2. Anatomic landmarks of the rectum and anus.

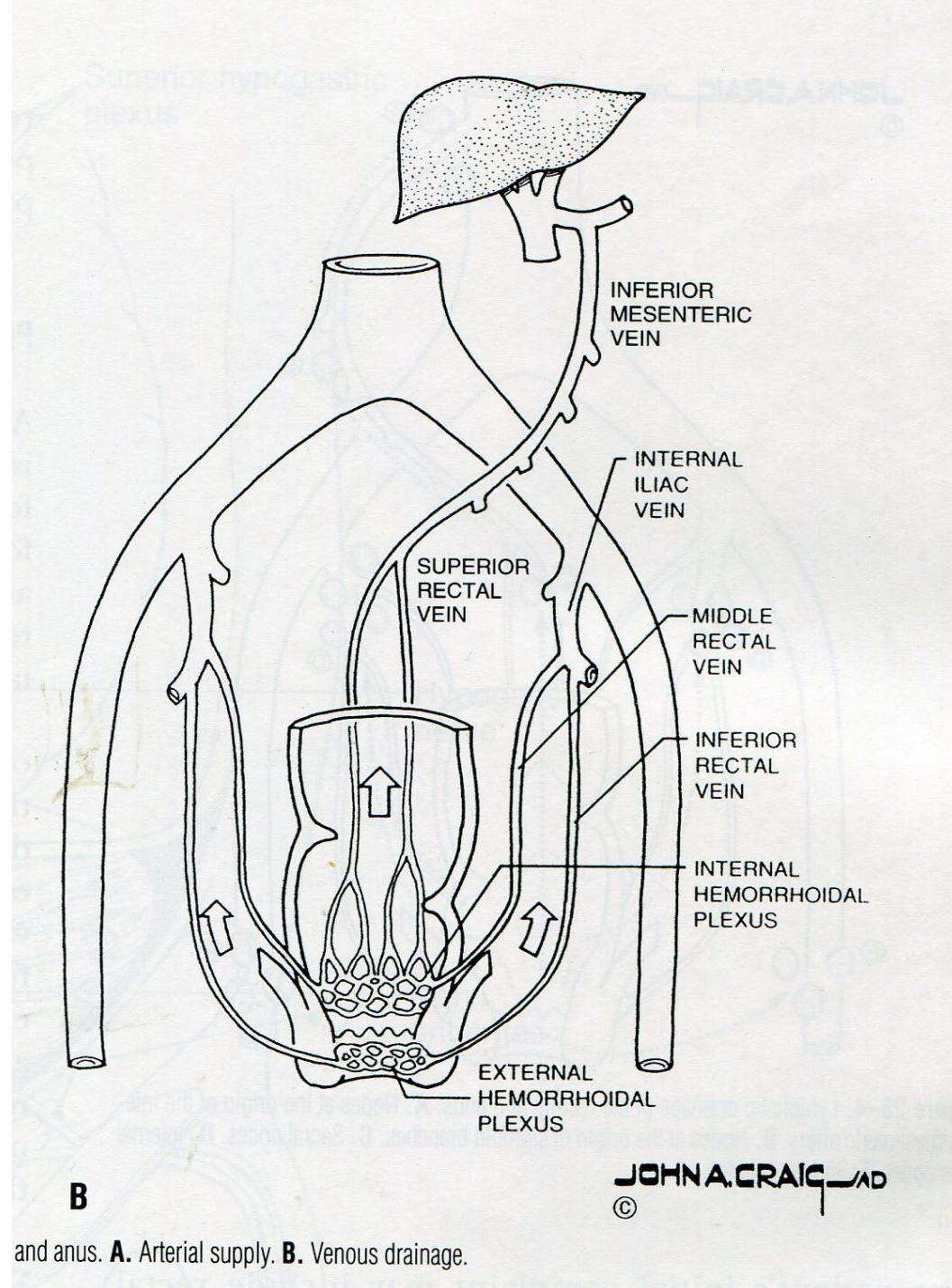


A

Figure 25-3. Vasculature of the rectum at

腹腔解剖圖

Venous supply



JOHN A. CRAIG AD

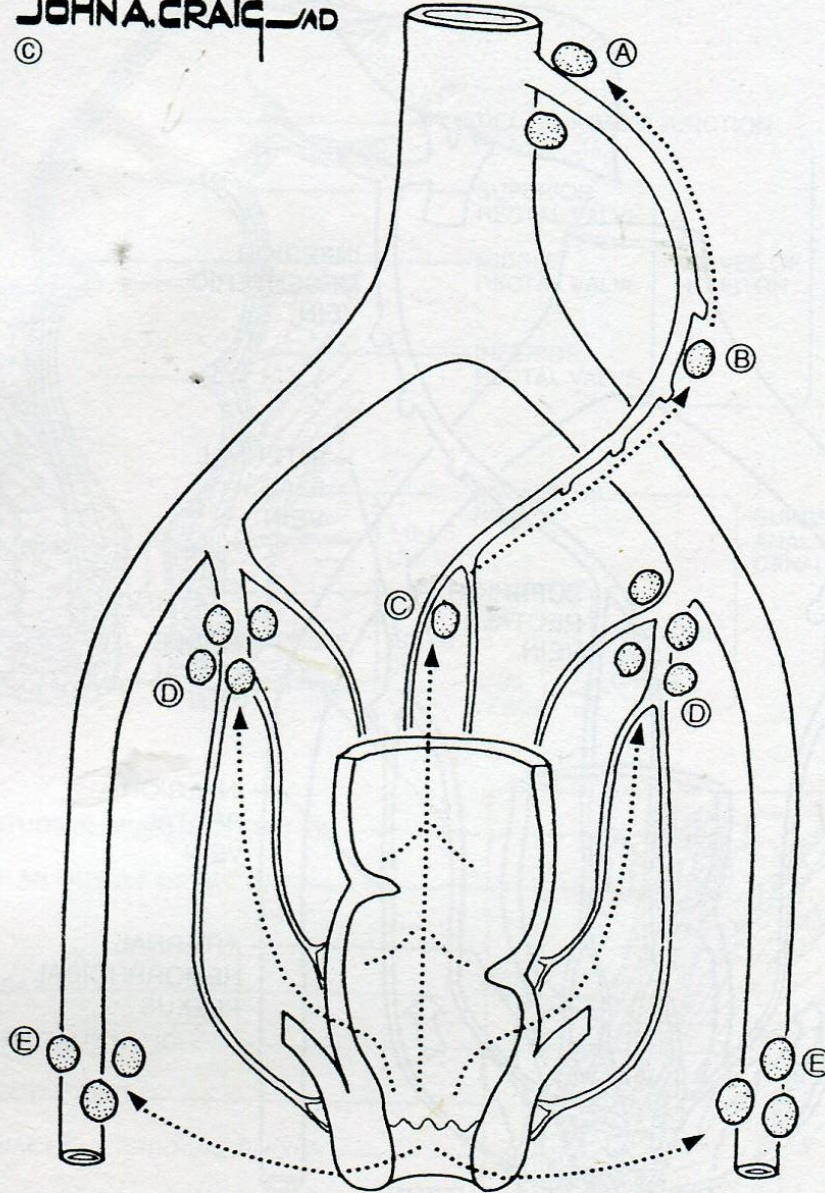
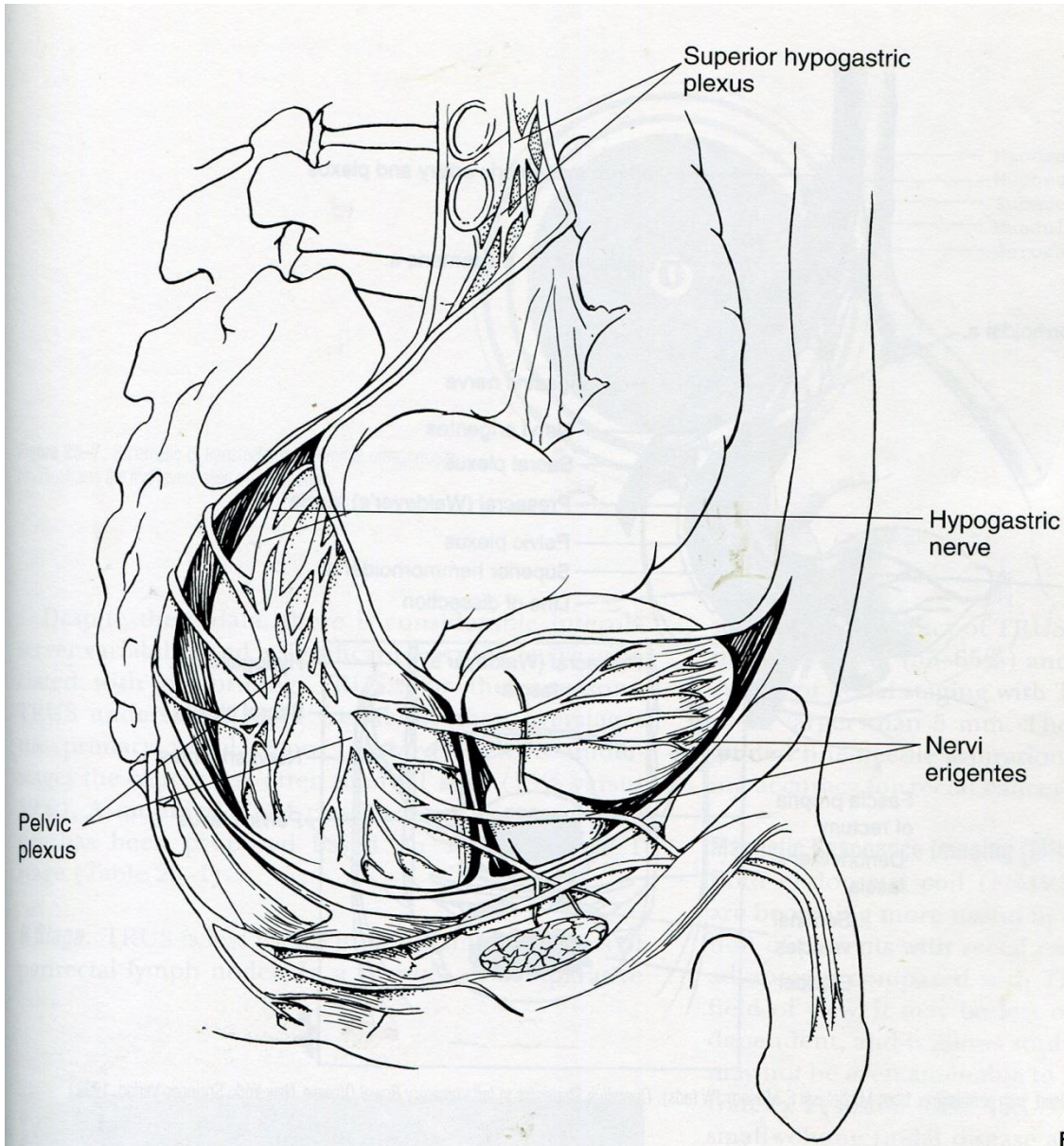
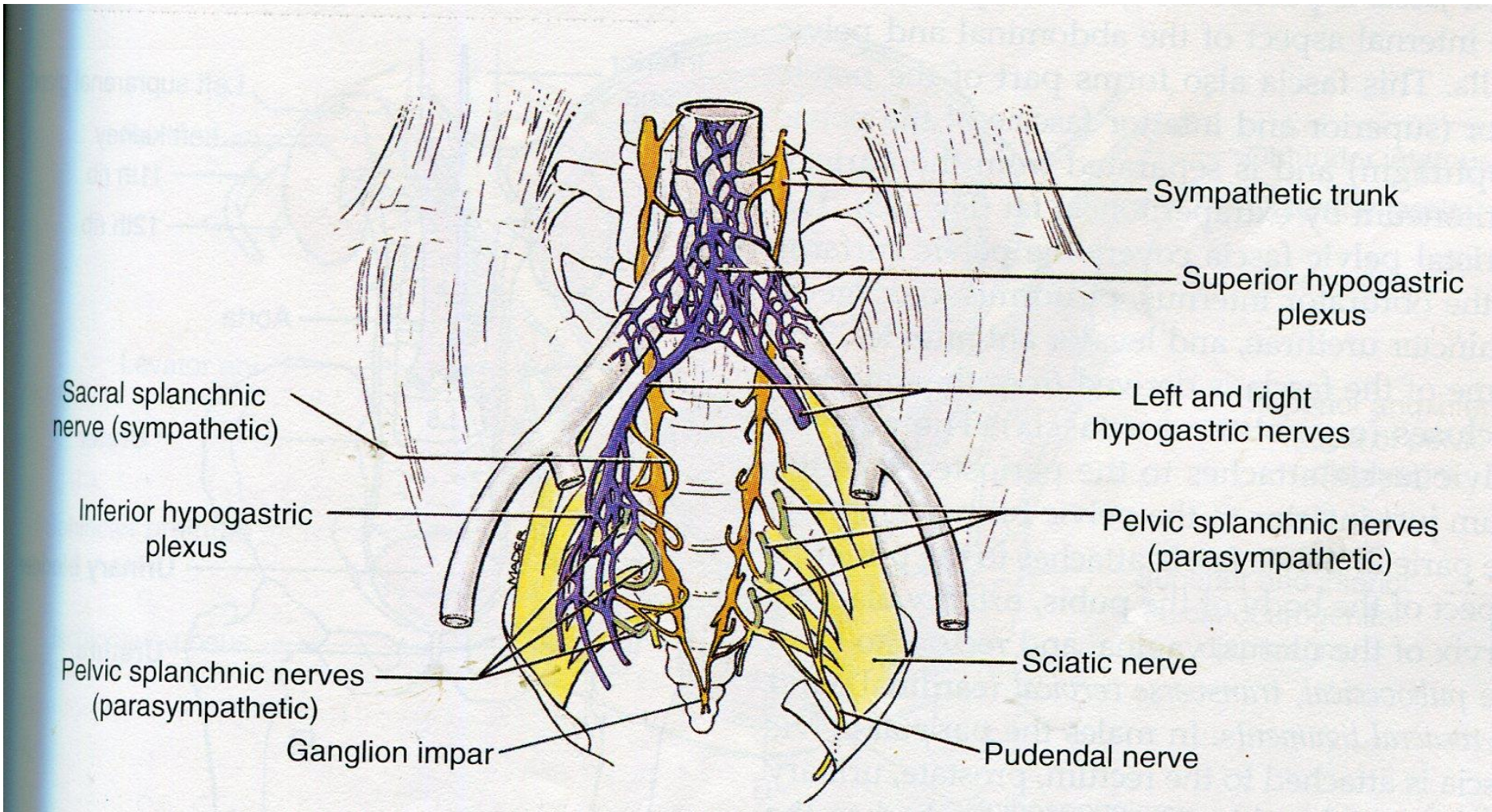


Figure 25-4. Lymphatic drainage of the rectum and anus. **A.** Nodes at the origin of the inferior mesenteric artery. **B.** Nodes at the origin of sigmoid branches. **C.** Sacral nodes. **D.** Internal iliac nodes. **E.** Inguinal nodes.



- The subserosal
- Myenteric (Auerbach)
- Submucosal (Meissner)
- Mucosal plexus

F



Adenoma-Carcinoma Sequences

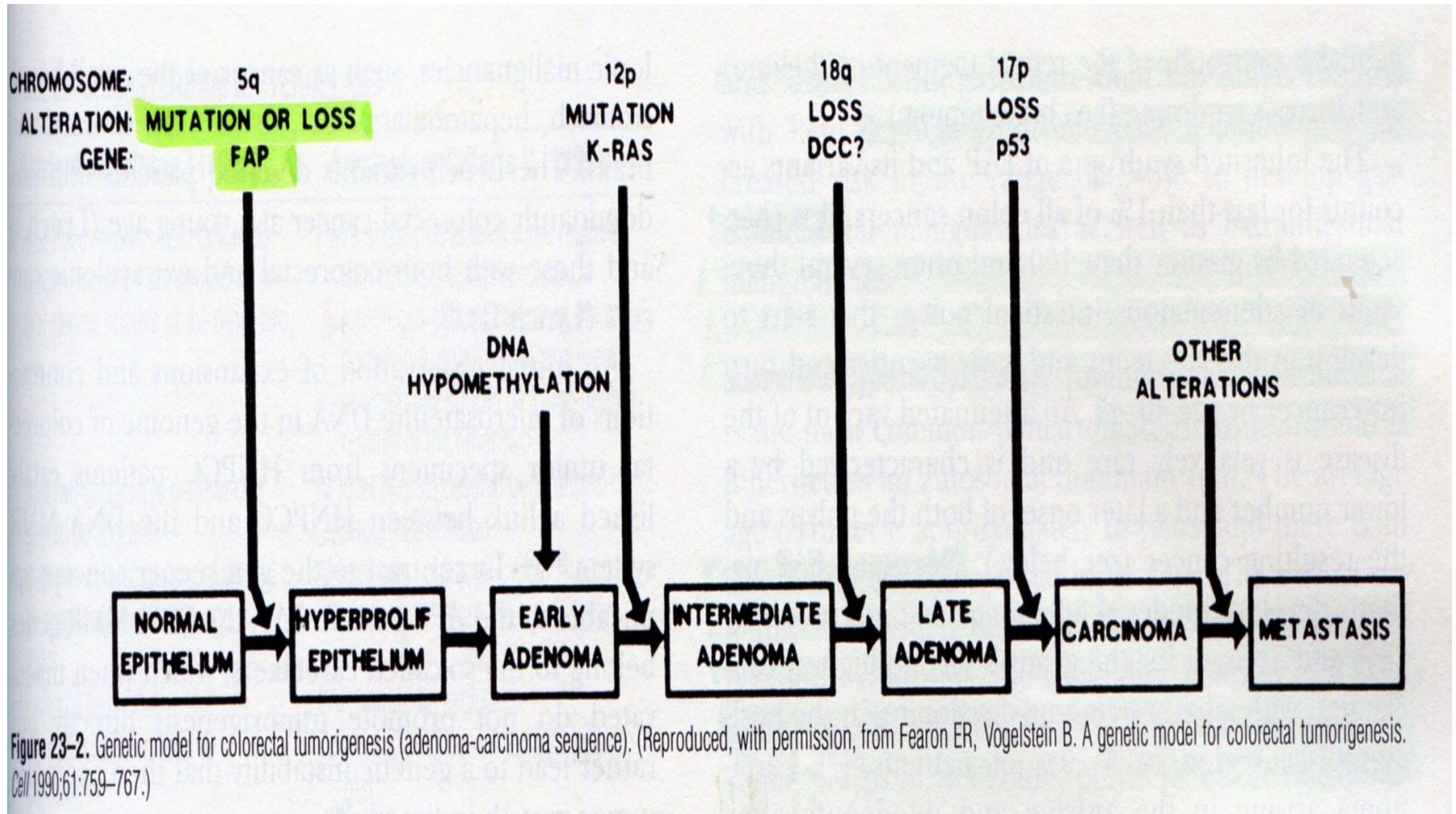


TABLE 23-10. TNM STAGING OF COLON CANCER

Stage	Definition
Primary Tumor (T)	
TX	Primary tumor cannot be assessed
T0	No evidence of primary tumor
Tis	Carcinoma in situ: intraepithelial or invasion of lamina propria
T1	Tumor invades submucosa
T2	Tumor invades muscularis propria
T3	Tumore invades through muscularis propria into the subserosa or into nonperitonealized pericolic or perirectal tissues
T4	Tumor perforates visceral peritoneum or directly invades other organs or structures
Regional lymph nodes (N)	
NX	Regional lymph nodes could not be assessed
N0	No regional lymph node metastases
N1	Metastasis in one to three regional lymph nodes
N2	Metastasis in four or more regional lymph nodes
Distant metastasis (M)	
MX	Distant metastasis could not be assessed
M0	No distant metastasis
M1	Distant metastasis
Extent of resection	
RX	Presence of residual tumor cannot be assessed
R0	No residual tumor
R1	Microscopic residual tumor
R2	Macroscopic residual tumor

發燒肺積水 李登輝延至月中出院

李辦：傷口沒感染 目前仍靠點滴補充營養 無法久站或下床活動

【記者陳雅梵／台北報導】

對於前總統李登輝手術後恢復的情形，李登輝辦公事主任王燕軍說，經榮總院方檢查，李登輝術後傷口沒有感染跡象，但仍無法正常進食。他說，李登輝因肺部術後積水，體溫超過**38**度，呈現發燒狀態，再加上傷口疼痛，肚子脹氣，導致睡眠品質不佳，原估計住院**7**至**10**日，現在可能延至**11**月中旬才能出院。

李登輝因罹患大腸癌，剛剛在台北榮總進行切除手術。王燕軍說，經院方醫師檢查後，李登輝的傷口沒有感染，今天早上已少量排氣，目前只能少量喝水，仍無法正常進食，需繼續靠靜脈注射補充營養。

王燕軍說，李登輝因肺部術後積水，體溫**38**度多，相對於正常一般體溫**35.6**度左右，呈現發燒狀態。他說，為配合術後用藥，院方已調整李登輝平常所服用包括高血壓、糖尿病、心臟病等用藥，持續進行左右側躺、起身等復健期程，李登輝目前仍無法久站或下床活動。

王燕軍表示，李登輝現在心情平靜，因傷口疼痛，持續發燒，肚子脹氣，術後復健及不斷調整用藥，以致睡眠品質不佳，略顯疲憊，無法多說話。他說，原估計住院**7**至**10**日，現在可能會延至**11**月中旬出院。

李辦表示，李登輝目前仍以治療為優先，關於特定人是否前去探病，李辦仍不分別證實回應，感謝國人關心。

術式

- 右側大腸切除術(Right hemicolectomy)
- 左側大腸切除術(Left hemicolectomy)
- 前位切除術(Anterior resection)
- 低前位切除術(Low anterior resection)
- 腹部會陰切除術(Abdomino-perineal resection)

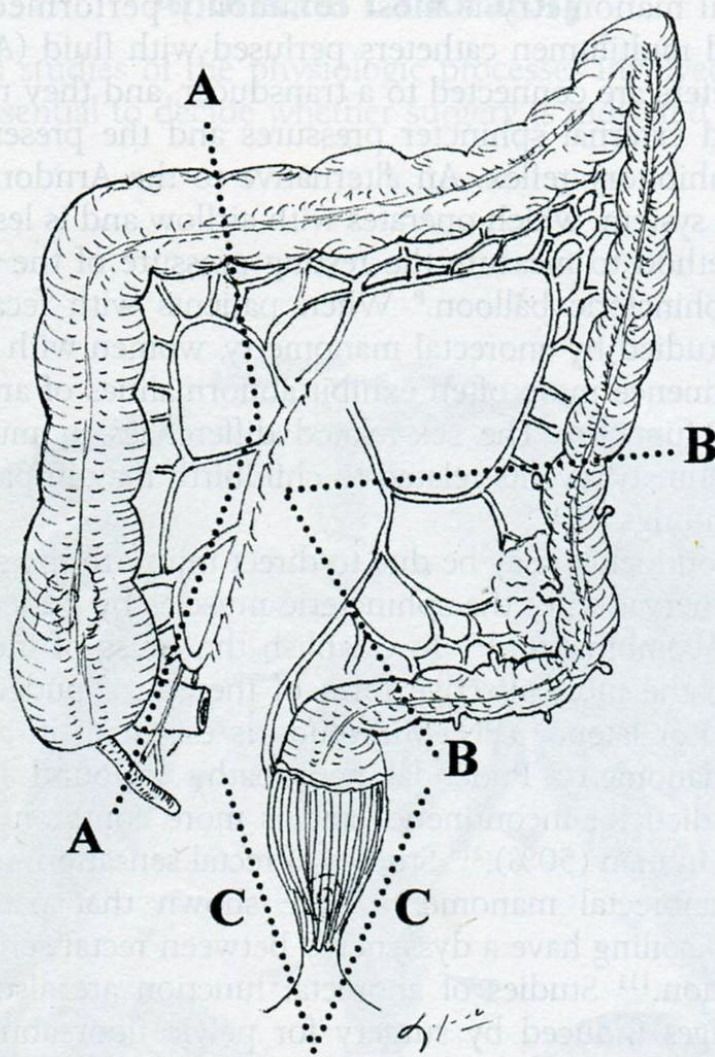


Figure 46-8. Operative procedures for right-sided colon cancer, sigmoid diverticulitis, and low-lying rectal cancer. A right hemicolectomy (A) involves resection of a few centimeters of terminal ileum and colon up to the division of the middle colic vessels into right and left. A sigmoidectomy (B) consists of removing the colon between the partially retroperitoneal descending colon and the rectum. An abdominoperineal resection of the rectum (C) is performed in a combined approach through the abdomen and through the perineum for the resection of the entire rectum and anus.

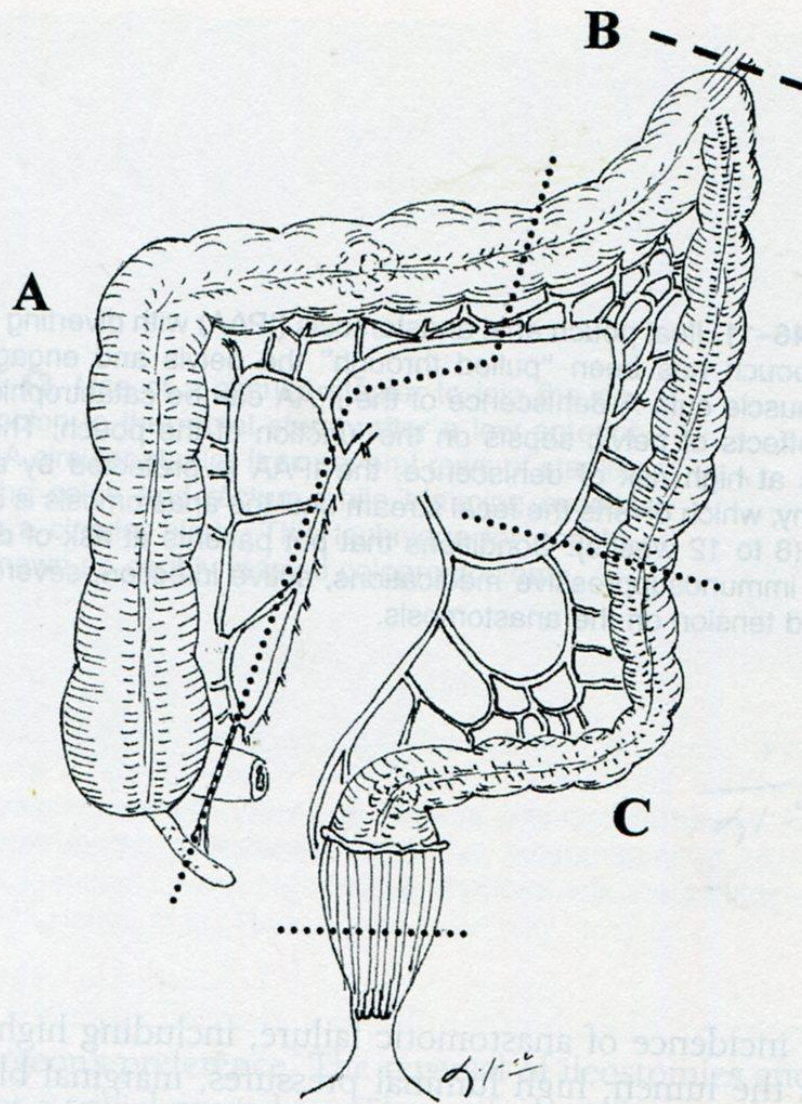


Figure 46-9. Operative procedures for transverse colon cancer and upper rectal cancer. Adenocarcinoma of the transverse colon is treated by an extended right hemicolectomy (A), which includes ligation of the middle colic vessels at their origin. An adenocarcinoma of the upper rectum requires a low anterior resection (C). To re-establish the continuity of the colon, the splenic flexure is detached from the left upper quadrant (B).

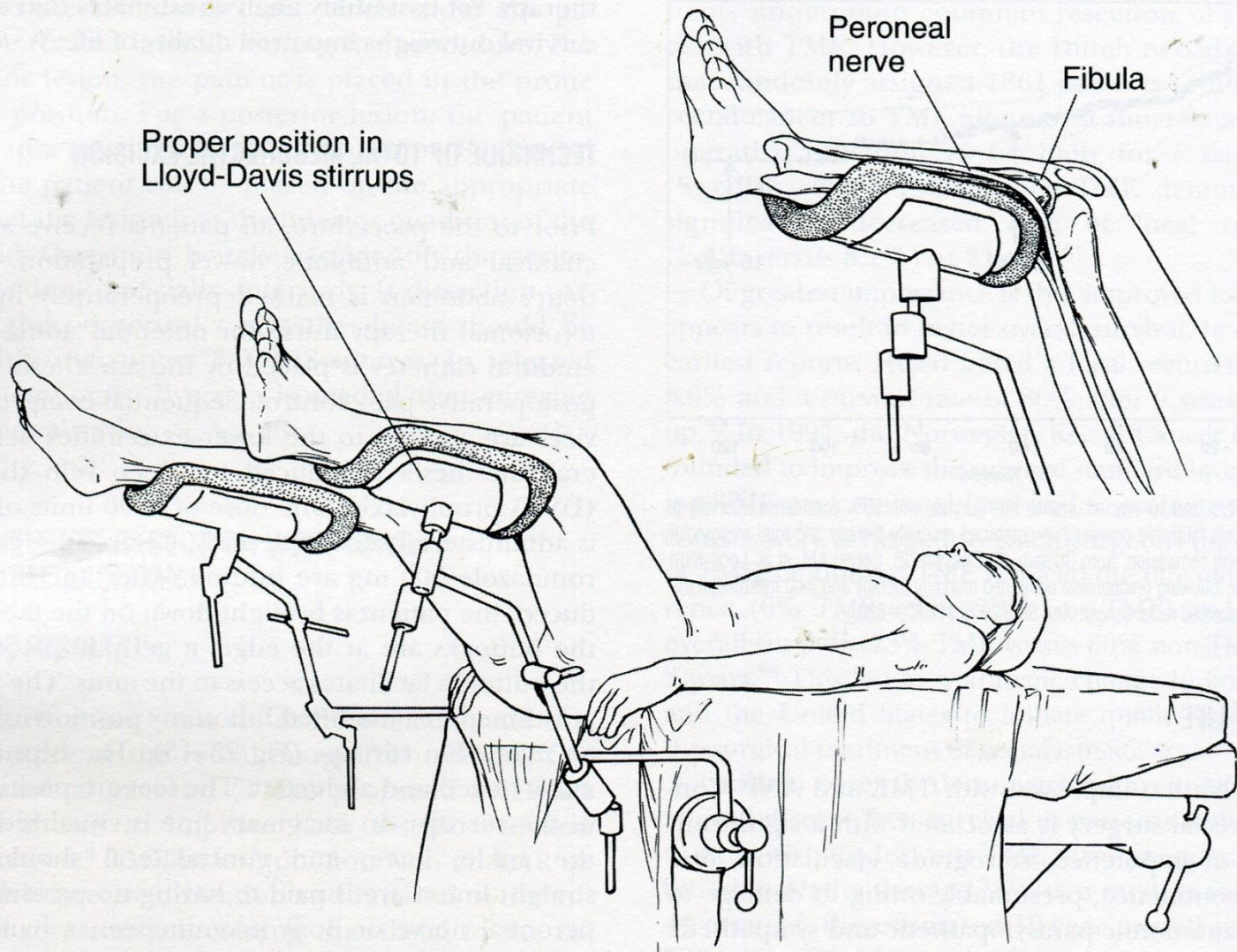
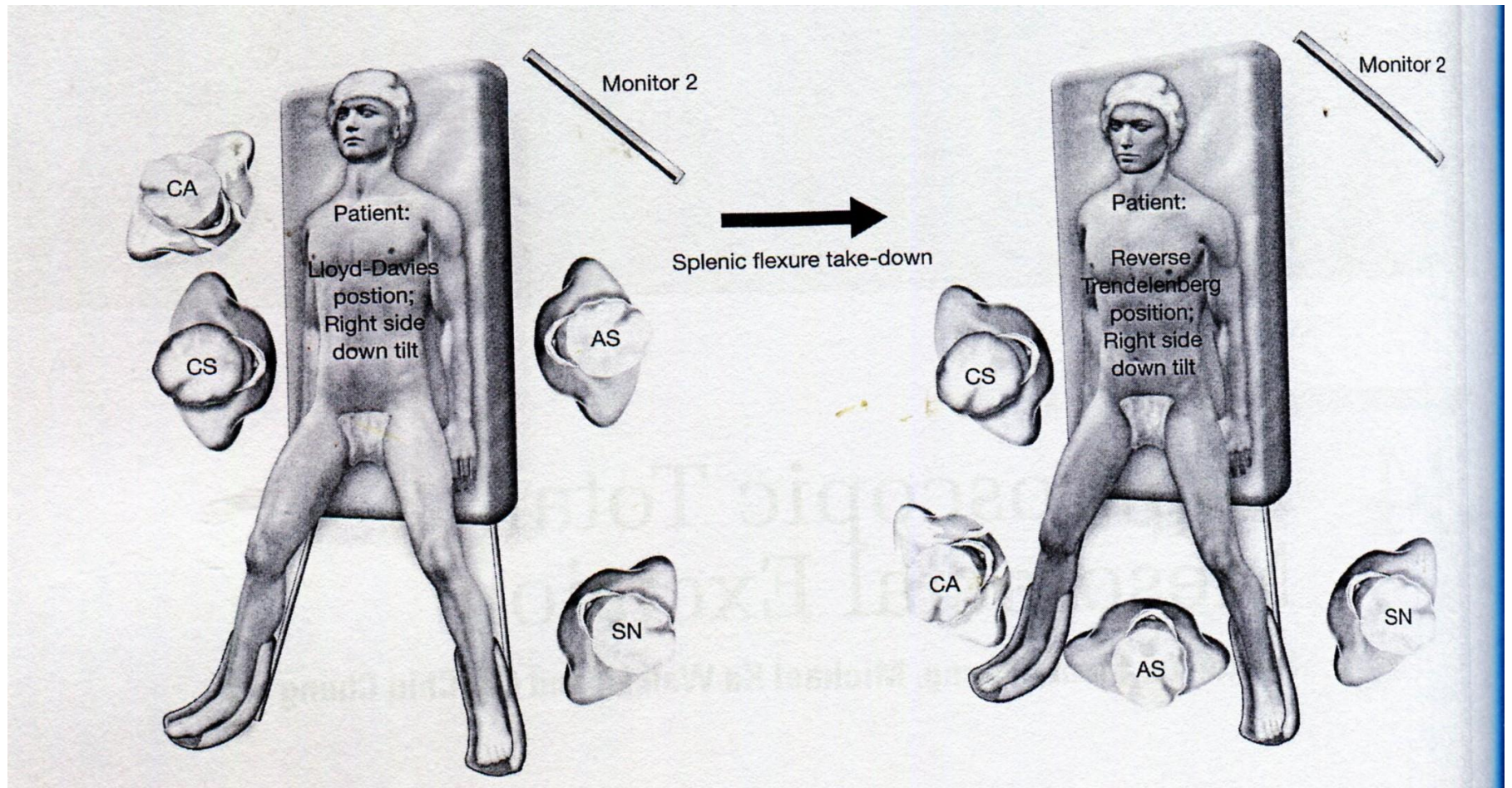


Figure 25-15. Position of patient for surgical treatment of rectal cancer allows access to both the abdomen and the perineum. (Redrawn, with permission, from Goldberg SM, Gordon PH, Nivatong S. *Essentials of Anorectal Surgery*. Philadelphia: Lippincott; 1980.)

Laparoscopic Setting for Lower Rectal Malignancy



Total Mesorectal Excision (TME)

- The Current **paradigm** for surgical treatment of rectal cancer
- Rectum below the peritoneal reflection is enclosed circumferentially by the mesorectum.
- The mesorectum was circumscribed at its external boundaries by a thin layer of fibrous tissues (fascia propria of the rectum)

Total Mesorectal Excision (TME)

- The posterior dissection is not a problems
- Technical difficulties in anterior and anterolateral dissection of the mesorectum.
- Denonvillier's fascia
 - One-layer fascia arising from the fusion of the two walls of the embryonic peritoneal cul-de-sac

Lymph Node Retrieval

- Some author suggested that the overall survival is improved as more LNs are retrieved.

Le Voyer et al. J Clin Oncol 2003; 21: 2912–9.

Chen et al. . Int J Colorectal Dis 2010; 25: 1333–41

- The 12 LN retrieval was recommended and adopted.
 - Prevent inadequate sampling and understaging
 - Worse survival due to stage migration and inappropriate omission of adjuvant chemotherapy.

Nelson et al. J Natl Cancer Inst 2001(93), 583–6

- Patients: An age of < 60 years, tumor characteristics including right-sided tumor location, size of primary tumor, existence of synchronic tumors, tumor staging, histological differentiation, peritumoural infiltration and lymphocyte response
- Surgical aspects: length of the resected bowel segment, the surgeon's experience, the pathologist's experience or hospital volume

Low Anterior Resection (LAR)

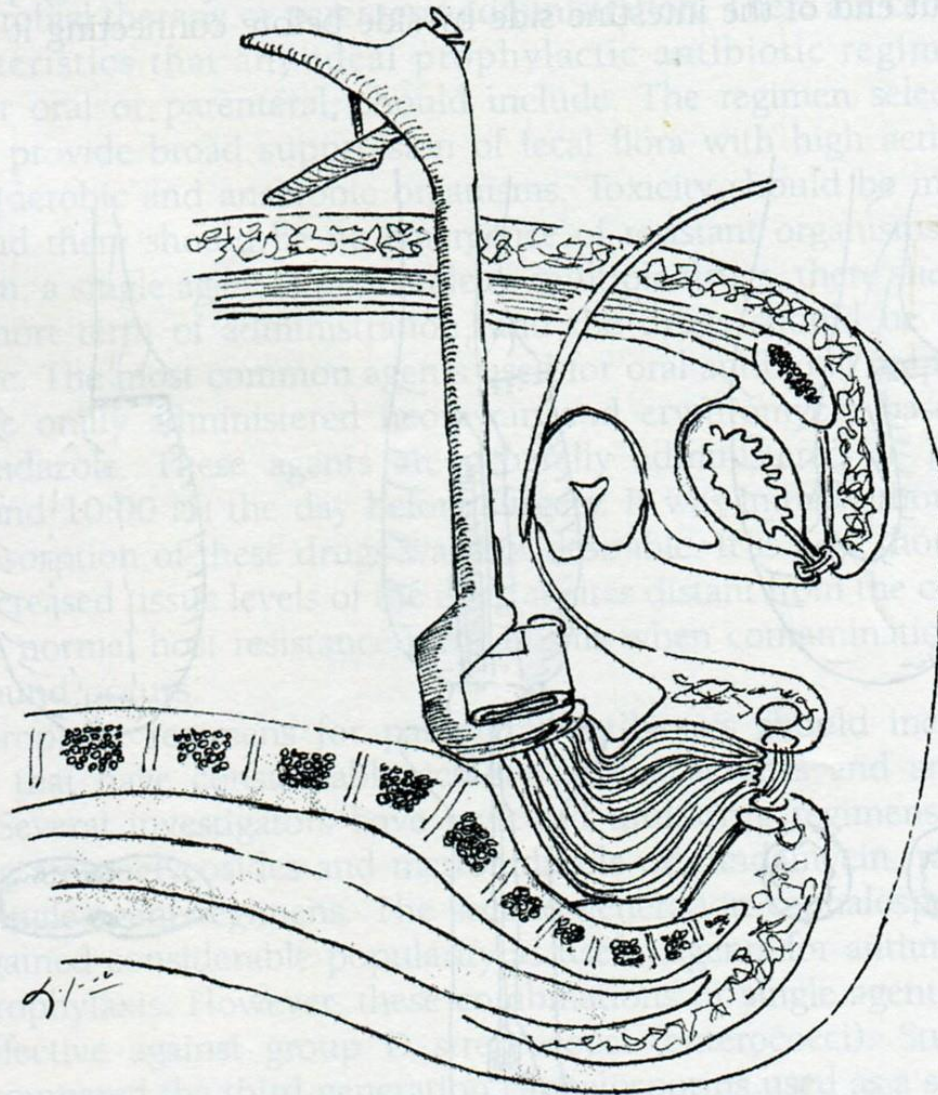
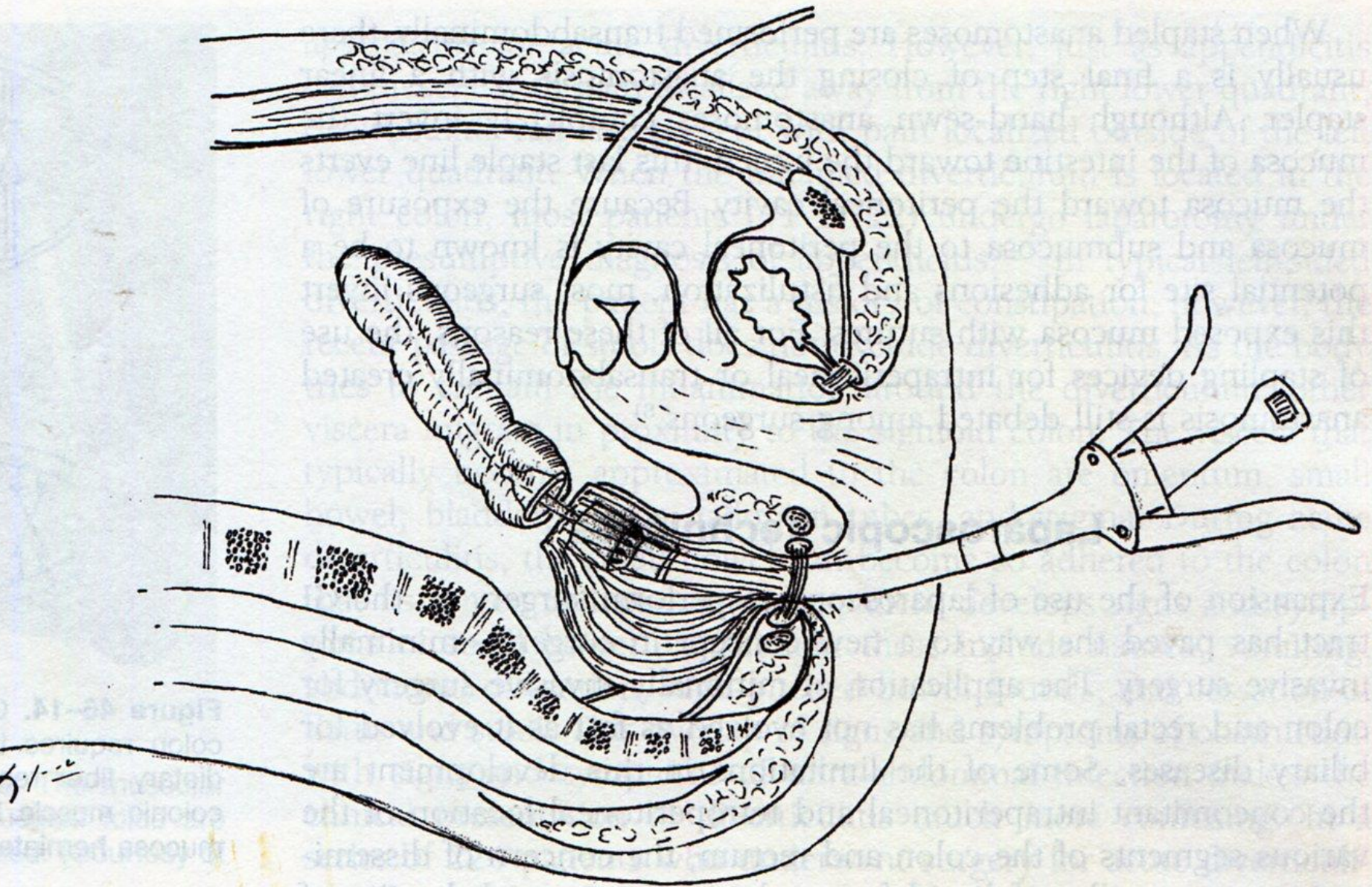
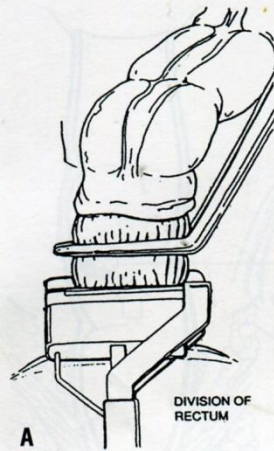
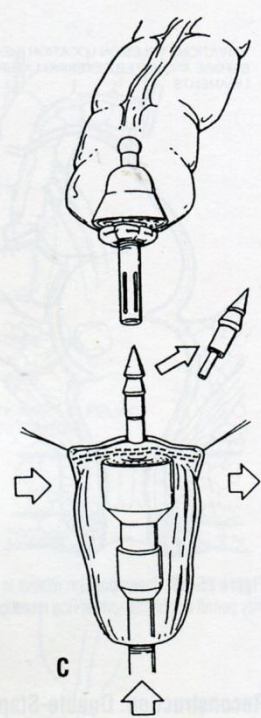


Figure 46-12. Use of a linear stapler for closure of the rectum during excision of the upper rectum and sigmoid colon. A linear stapler allows for control of an intrapelvic rectal stump in preparation for a stapled anastomosis between the descending colon and the rectum. Before the introduction of stapling devices, this type of anastomosis was technically impossible due to the lack of exposure and space within the pelvis to hand suture the colon to the rectum.

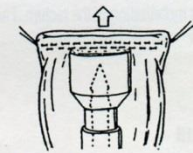




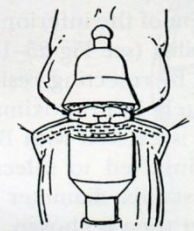
A



C

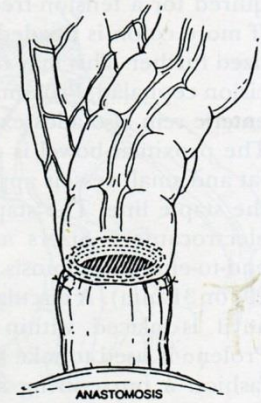


B



D

INSERTION AND ASSEMBLY OF STAPLING DEVICE



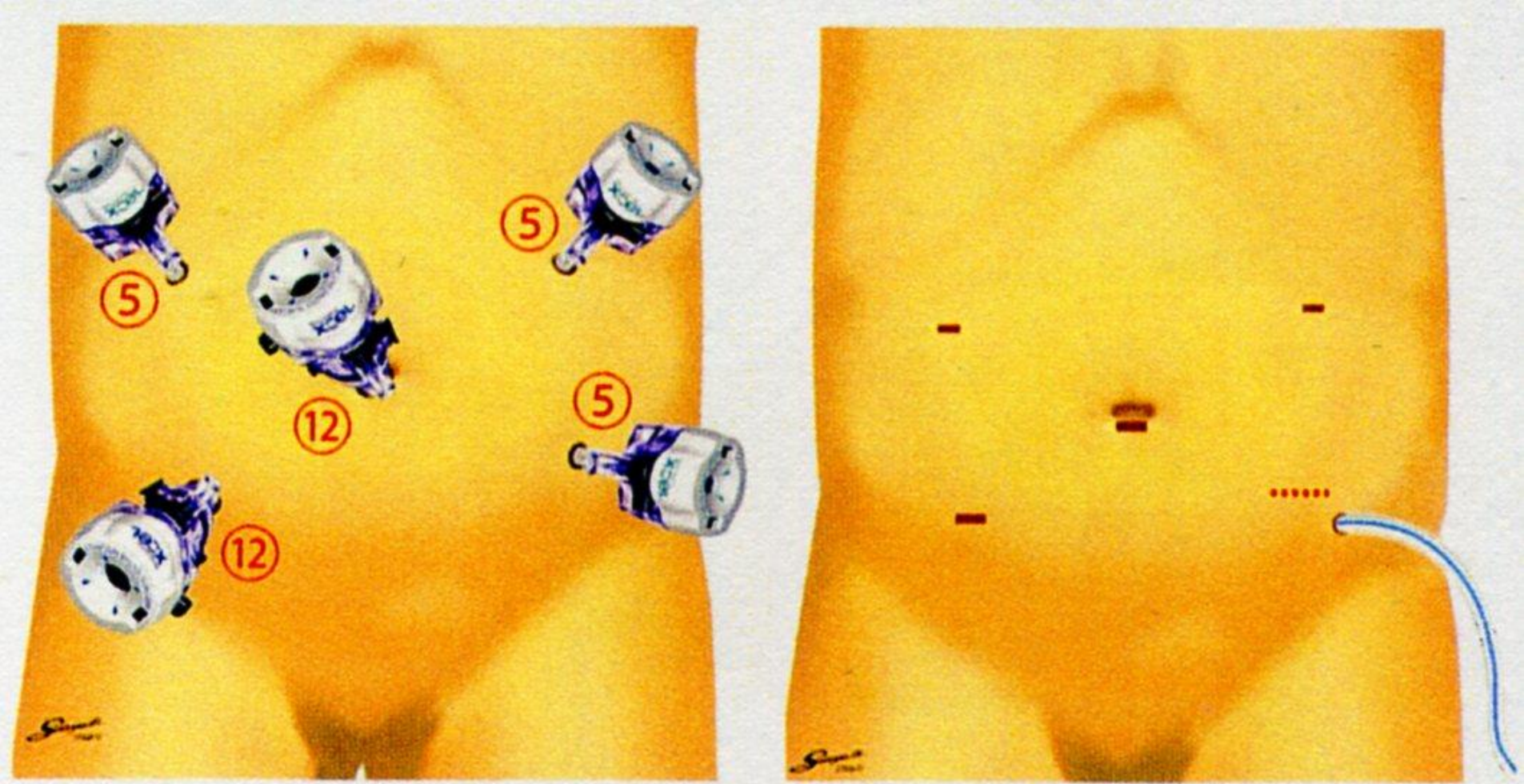
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ANASTOMOSIS

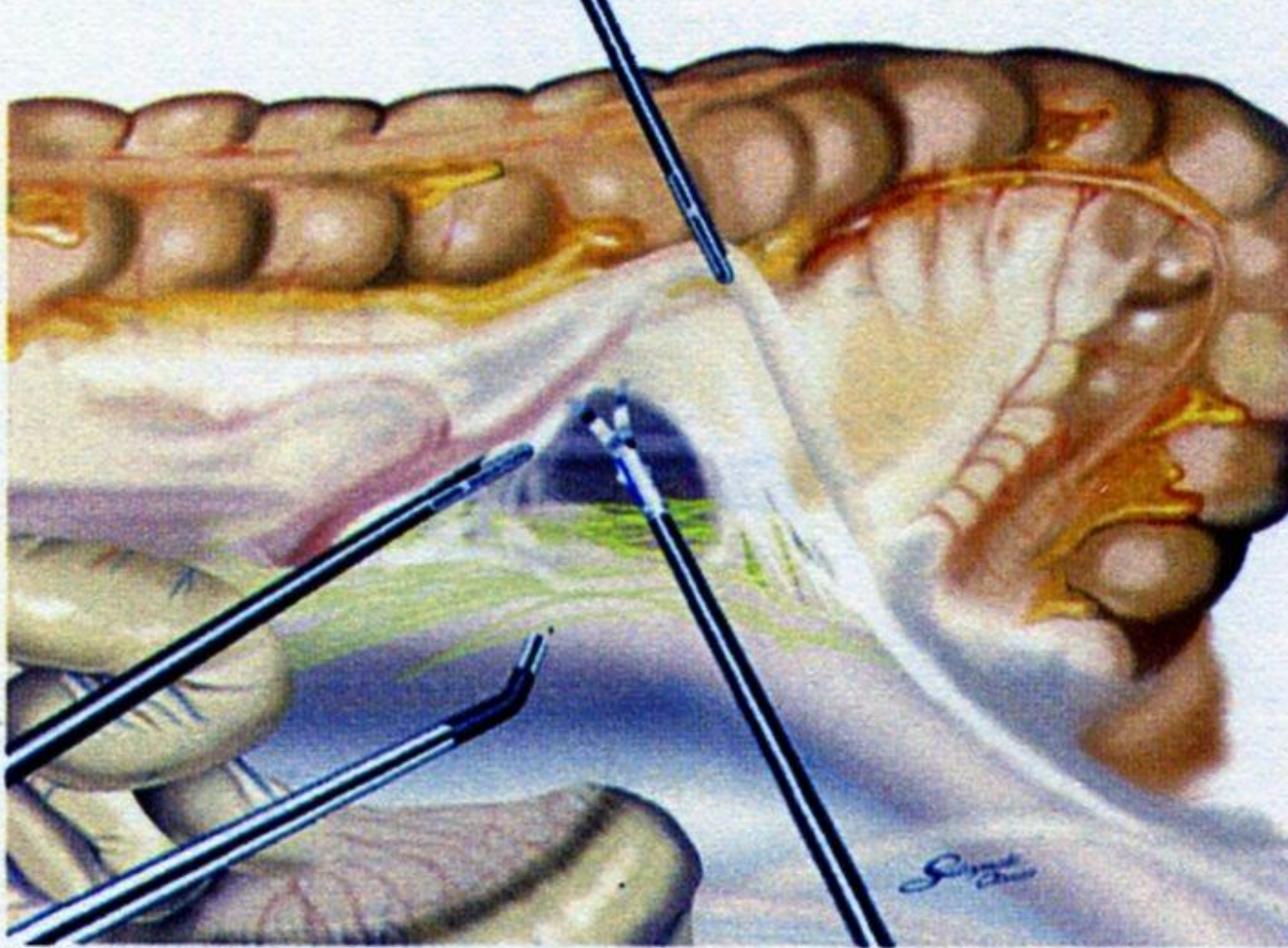


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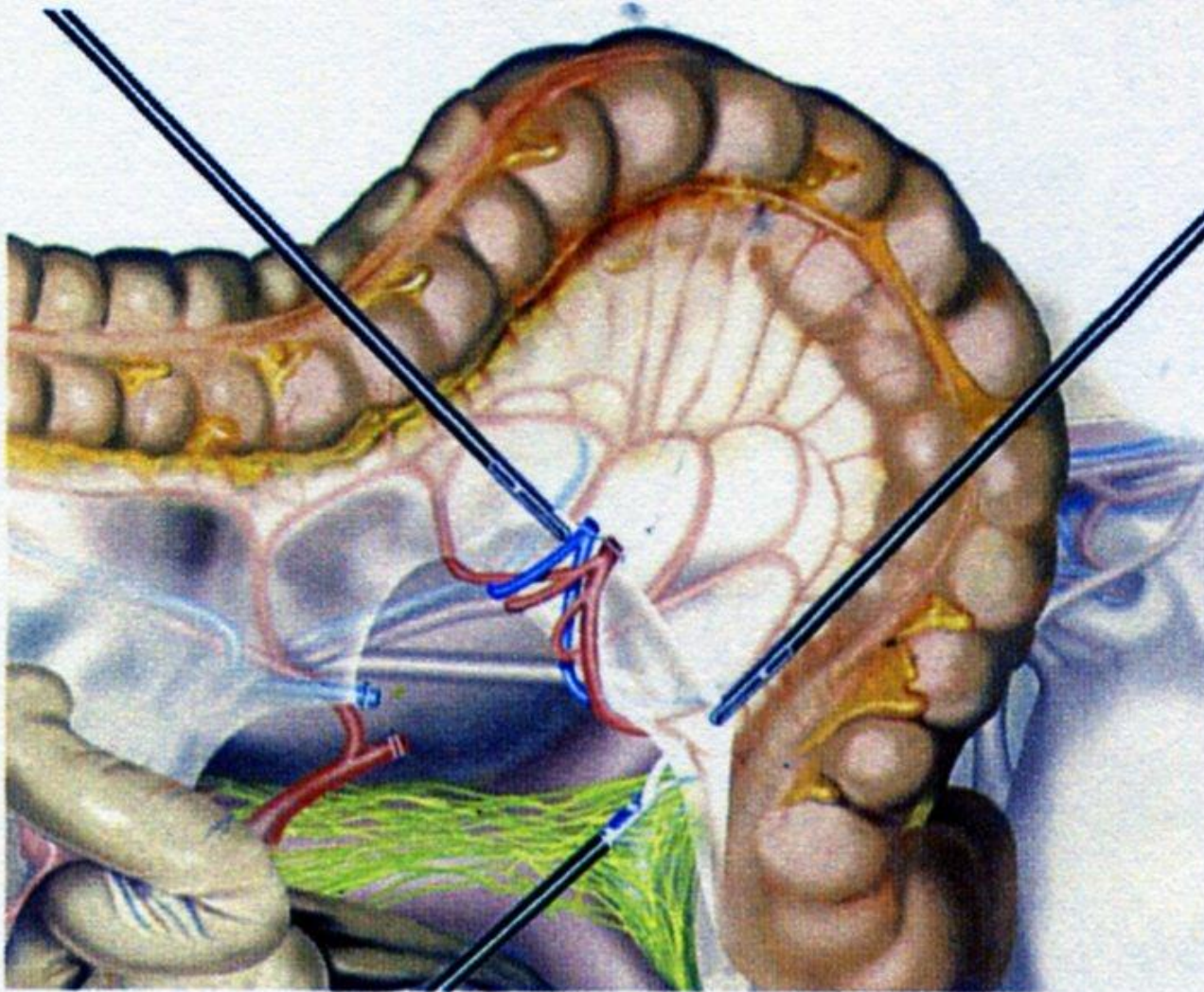
腹腔鏡低前位手術 (Laparoscopic Low Anterior Resection)



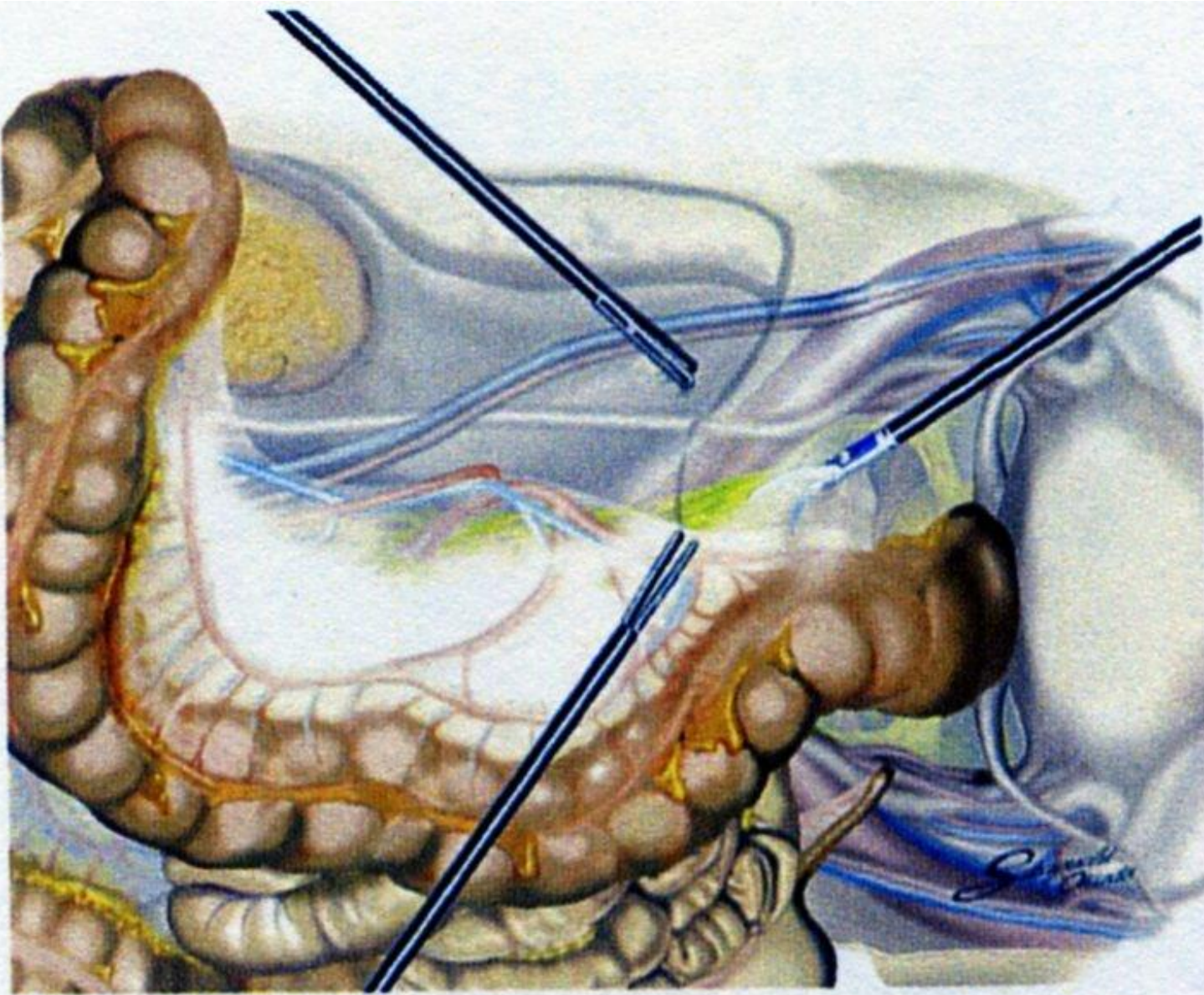
- Five 10-12mm ports
- Minilaparotomy



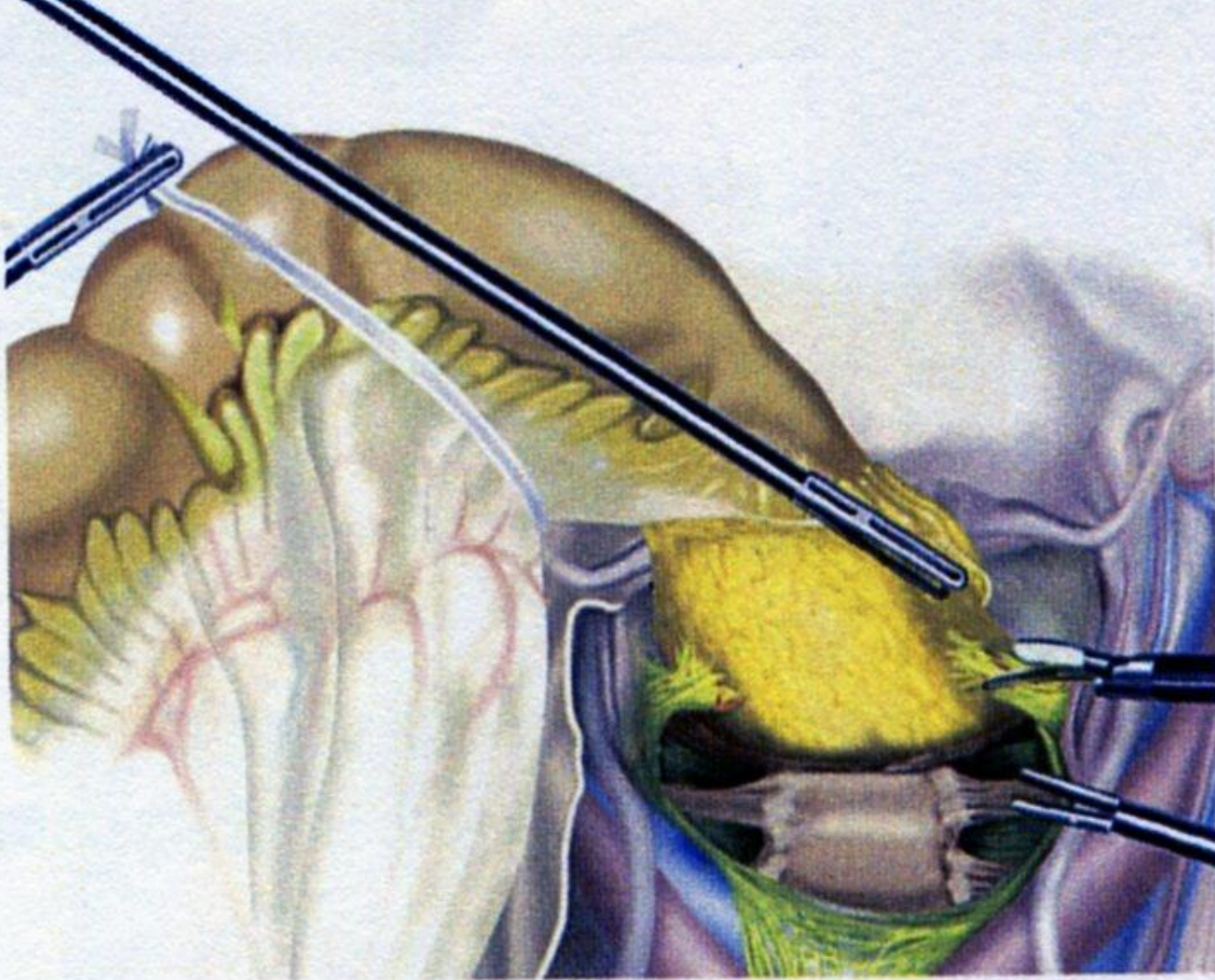
- Medial-to-lateral approach



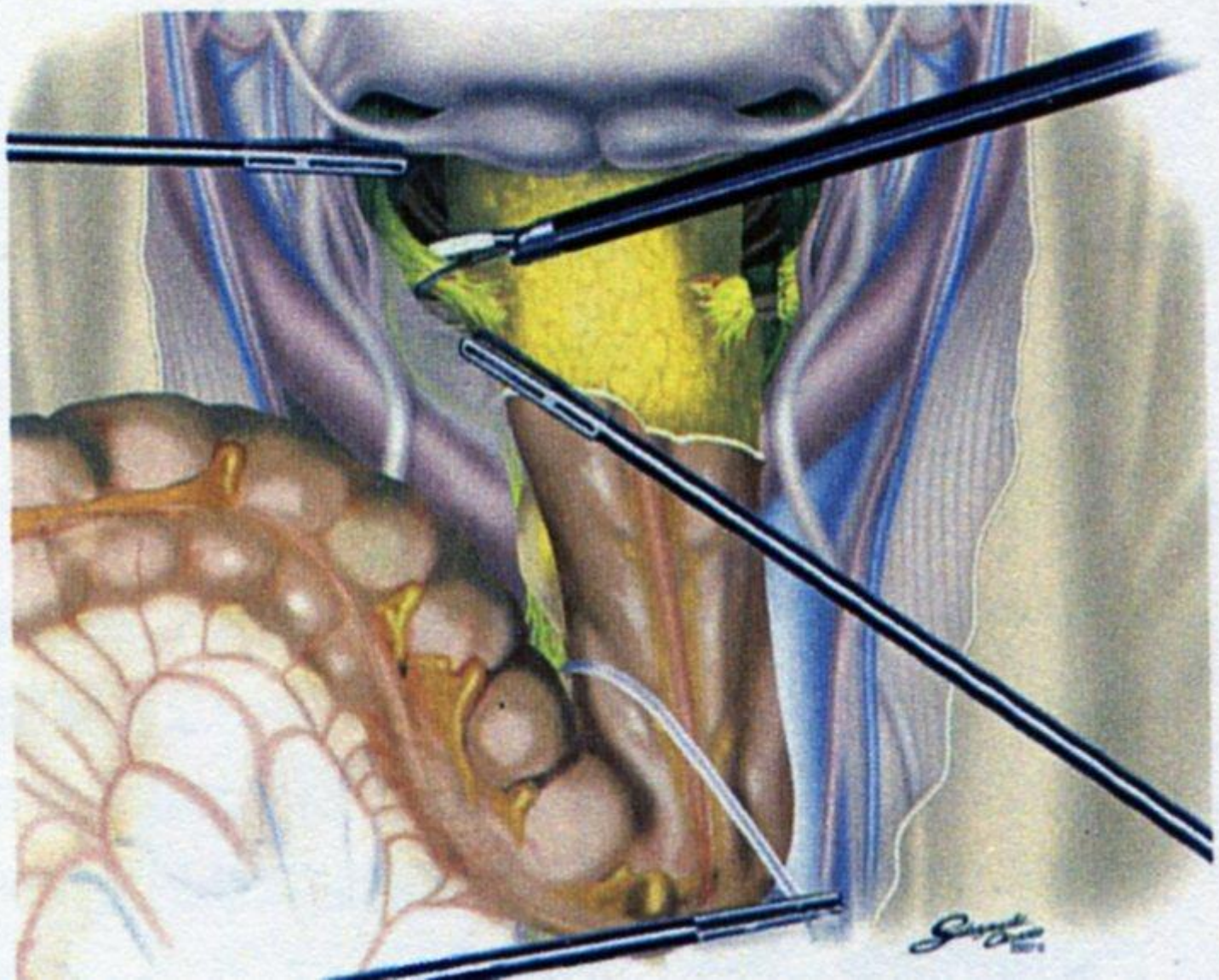
- 下腸繫膜動脈/靜脈結紮
- 高位結紮 vs 低位結紮



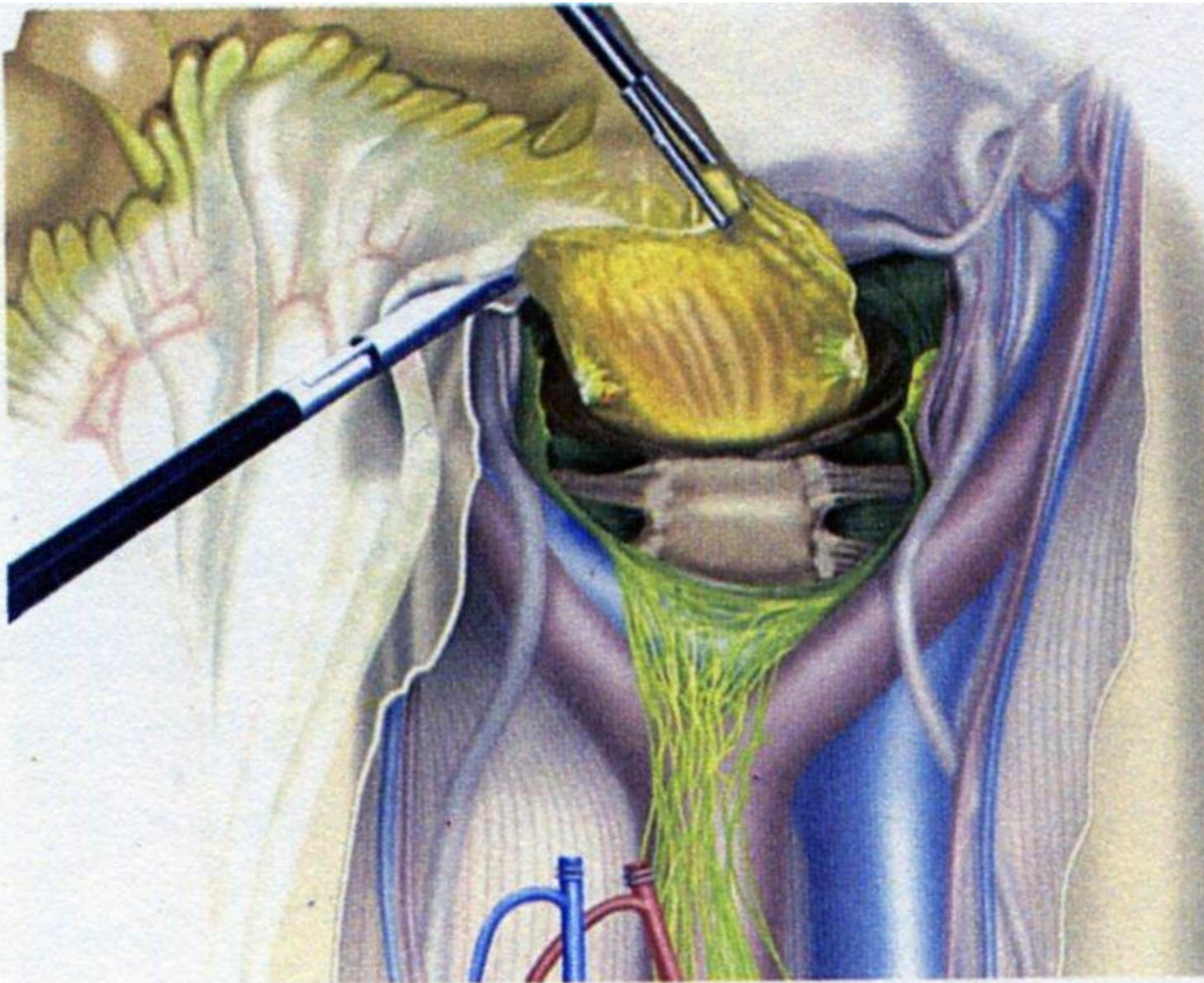
- White line of Todt



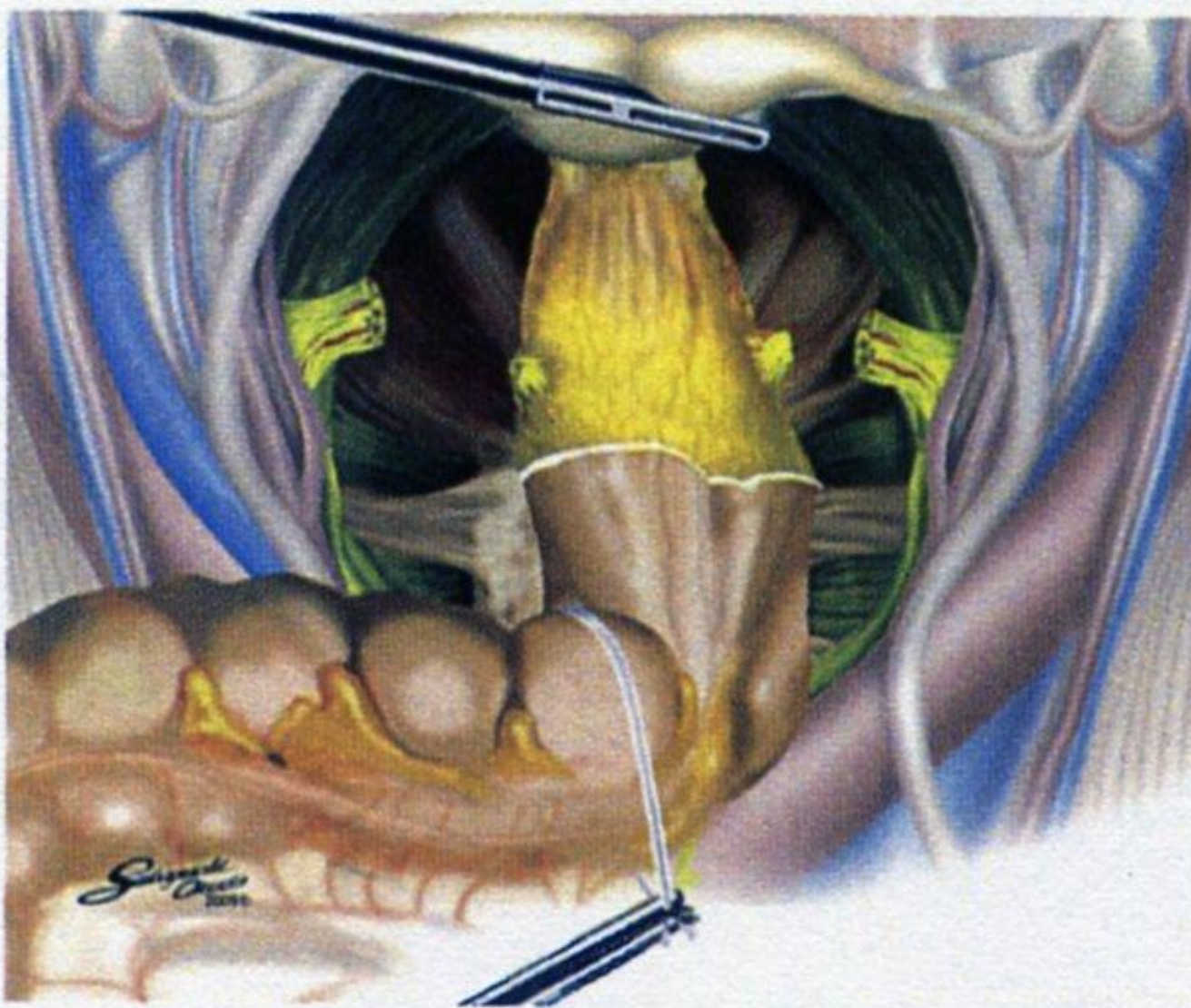
- Mesorectum
- 中痔動脈(middle hemorrhoidal artery)



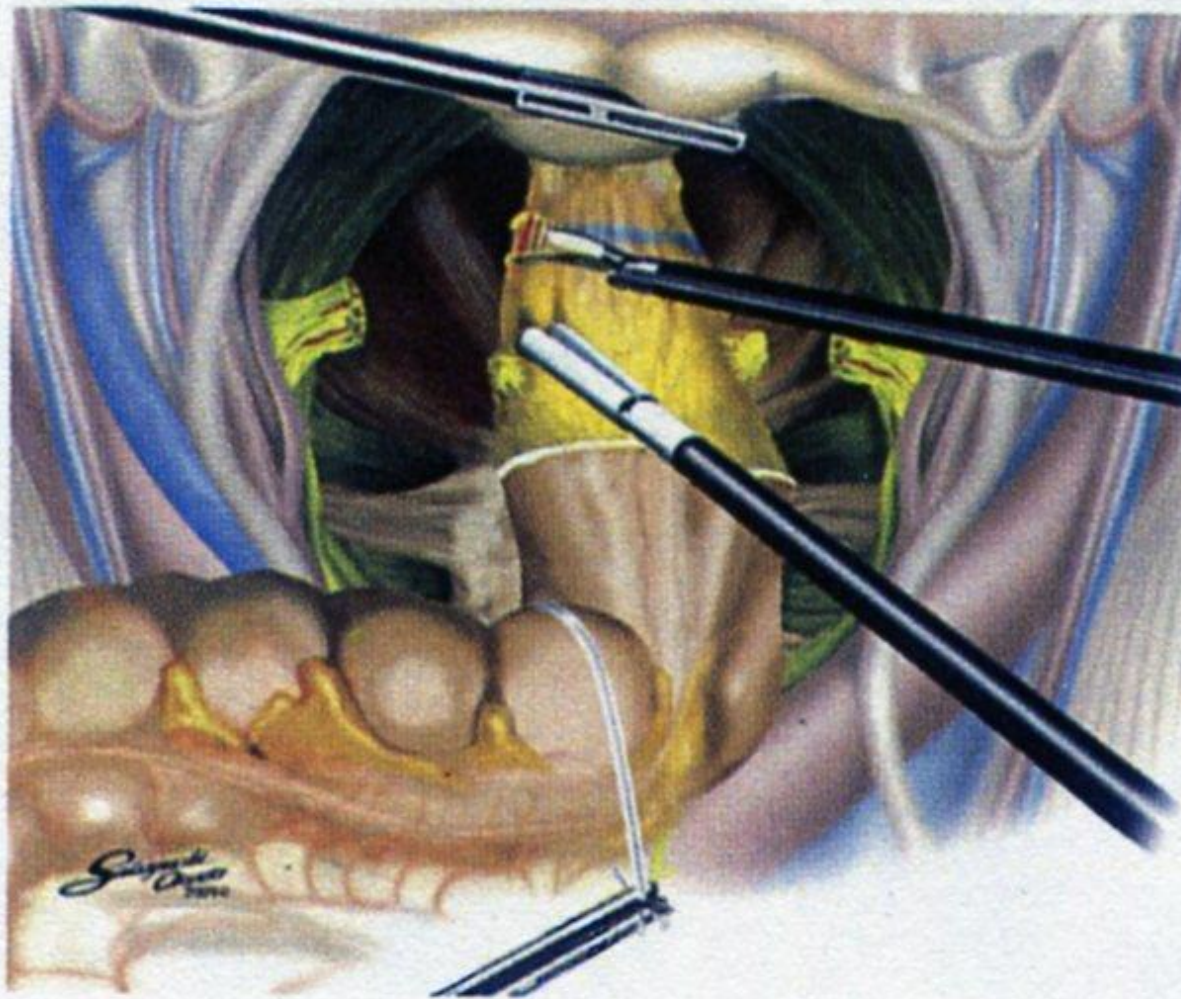
- 換邊發球
- 對側



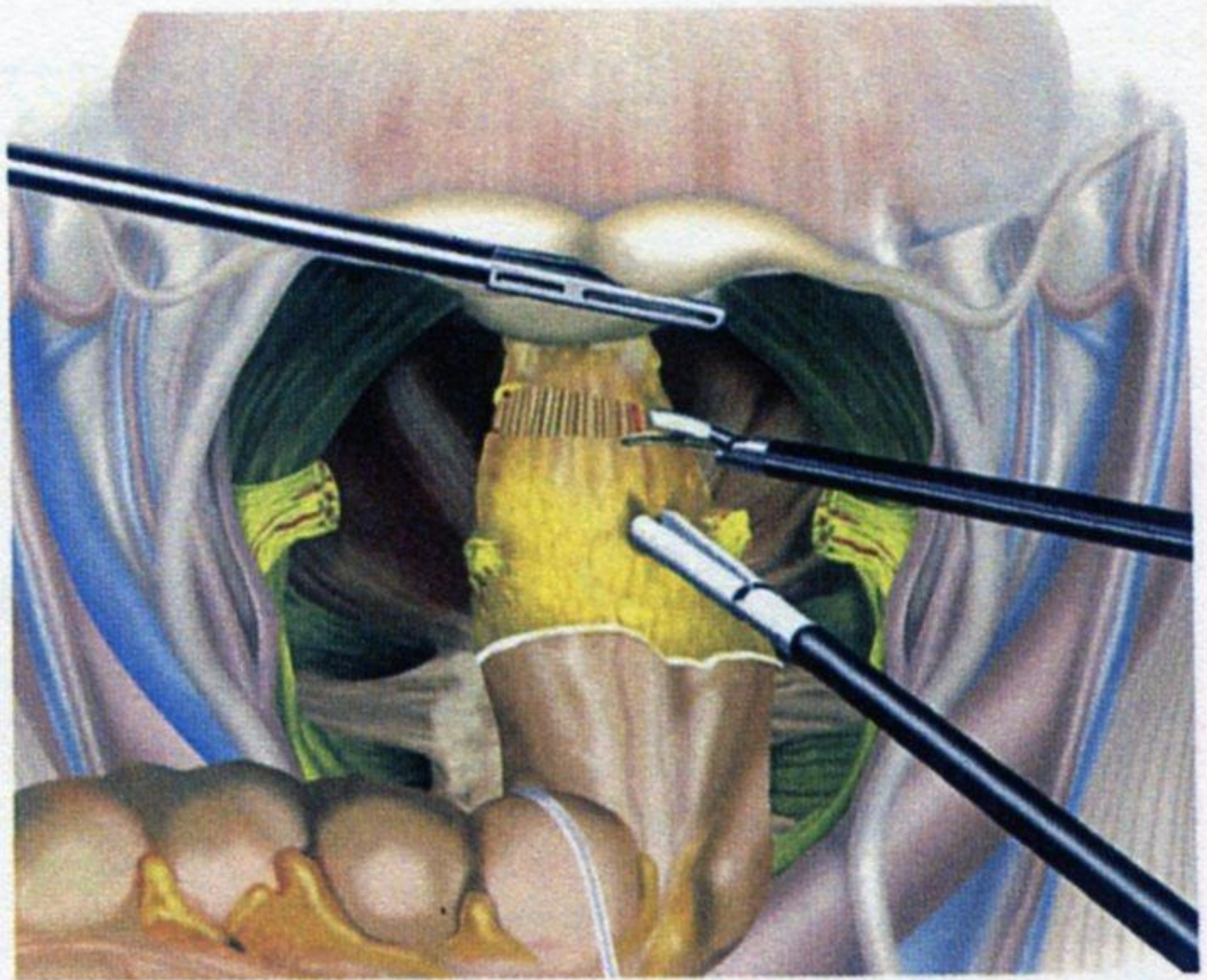
- Presacral fascia(Holy plain: 神聖的介面) 38

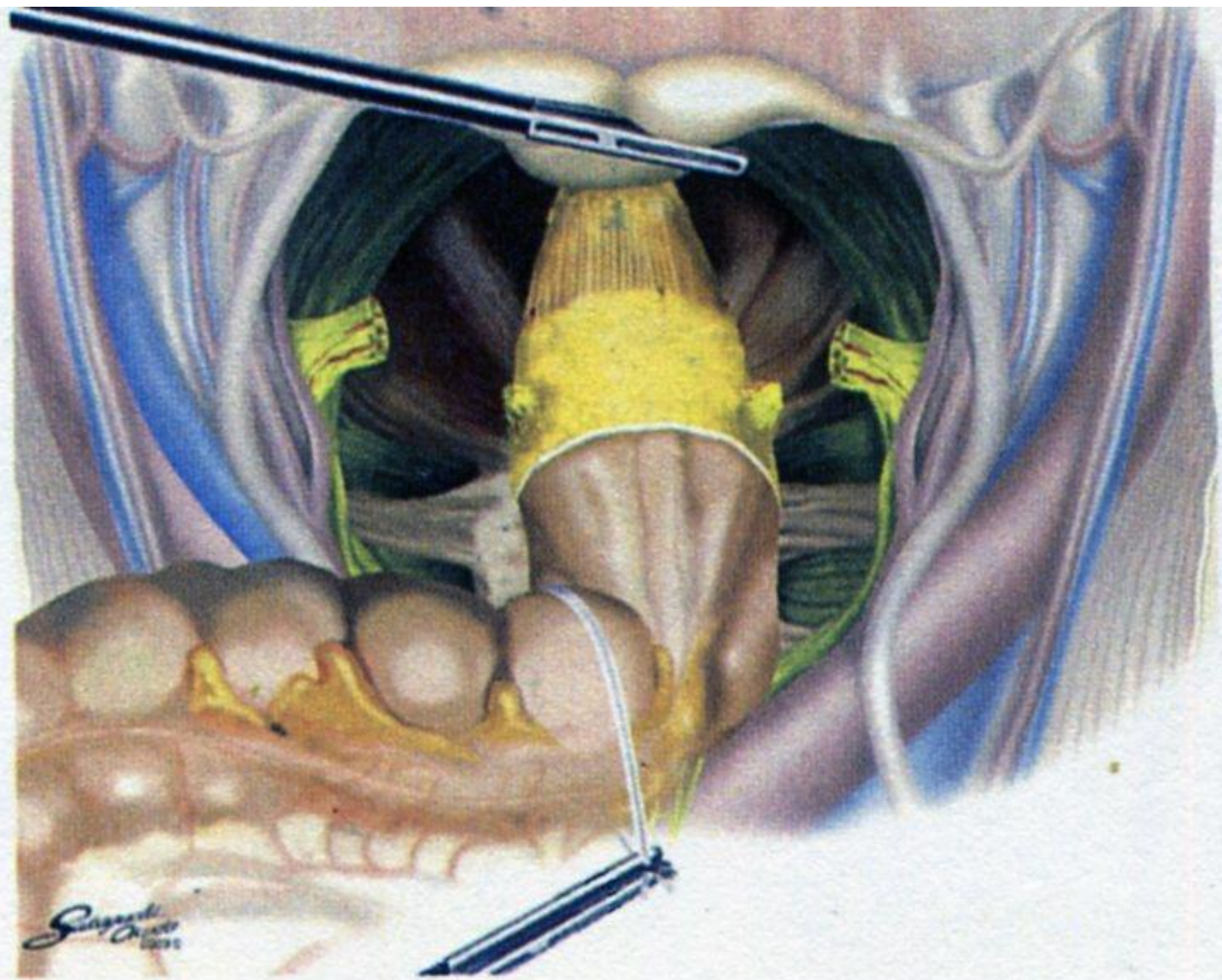


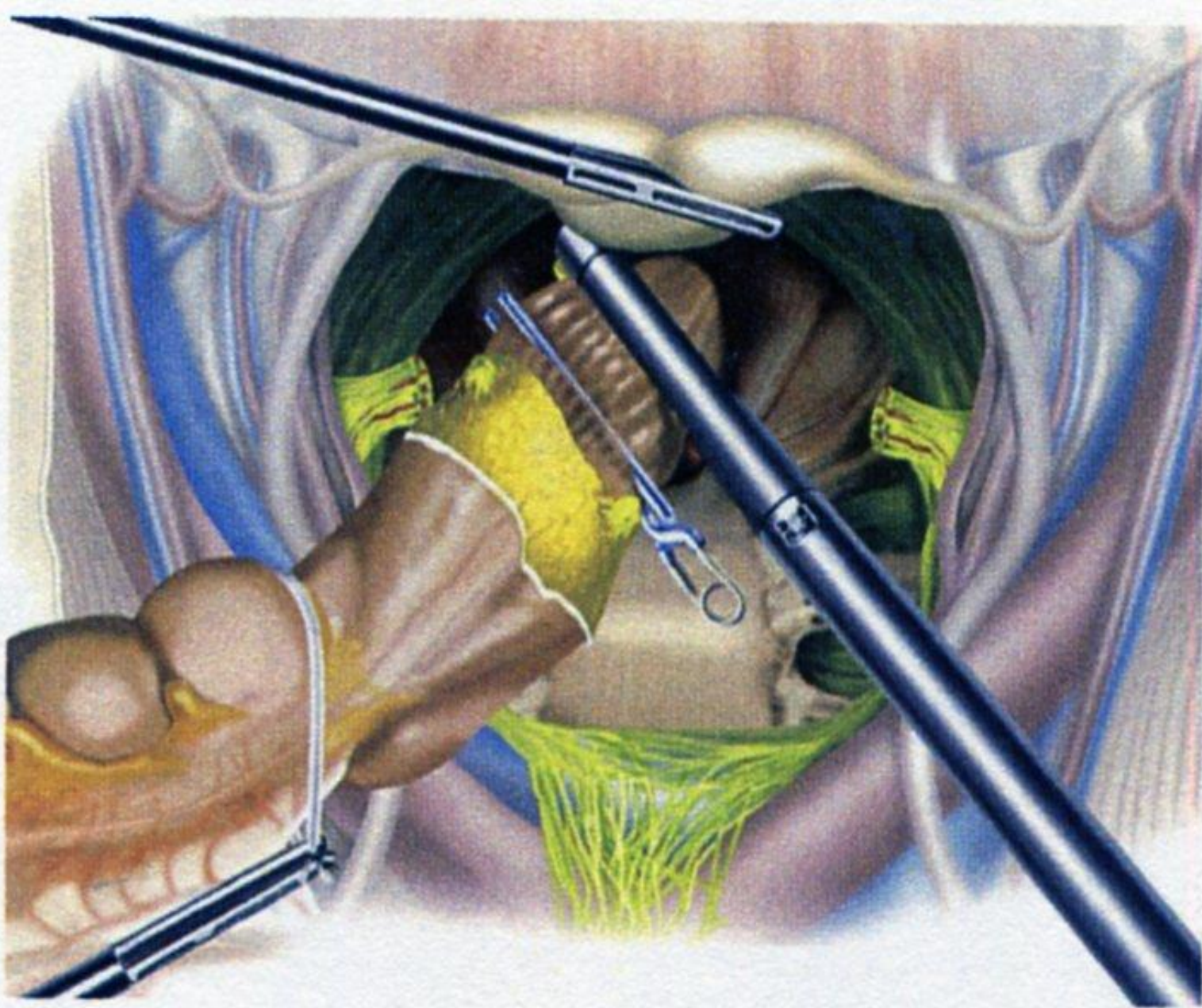
- Denonvillier's fascia
- 存在於女性嗎?



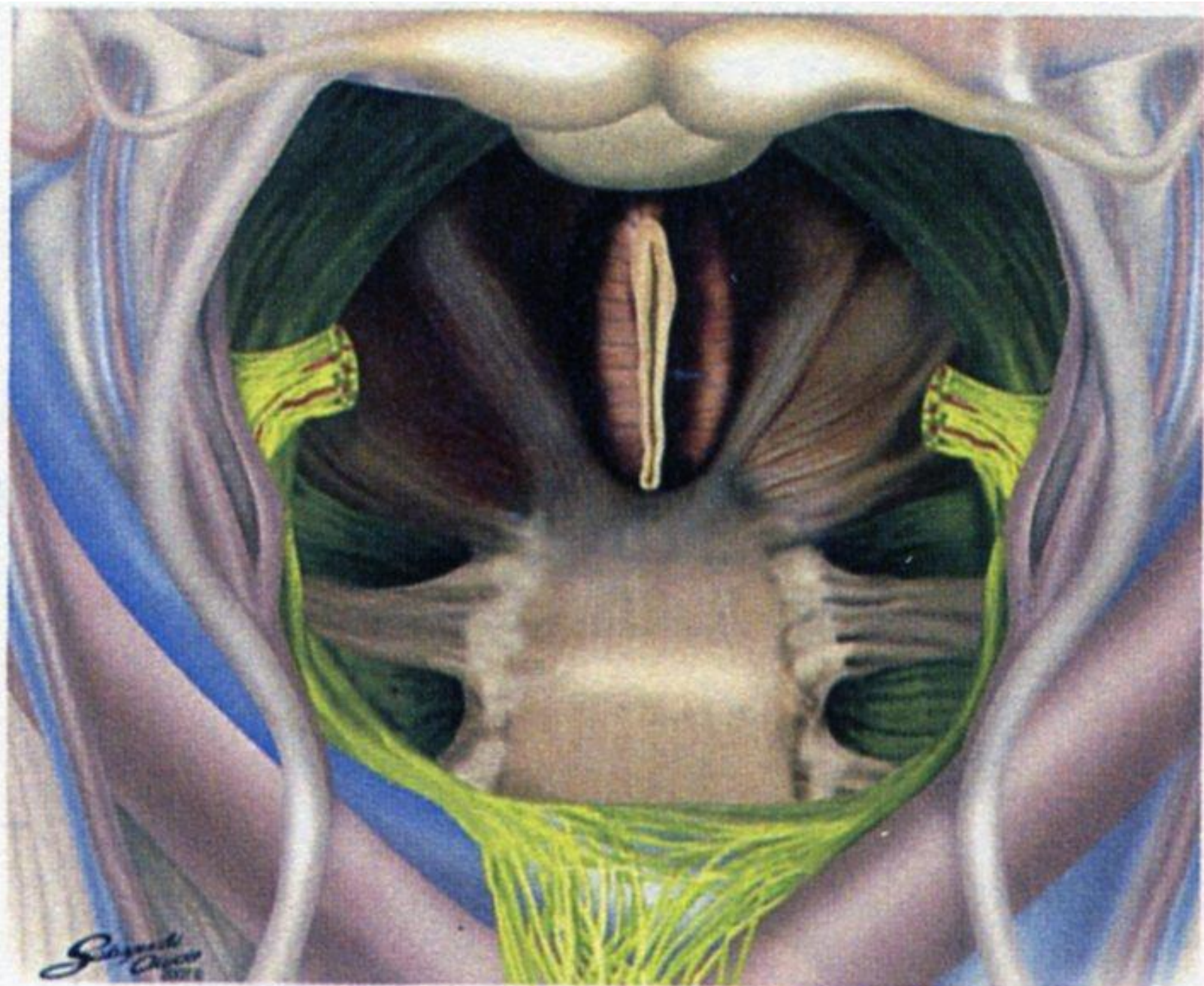
- 去除直腸周圍軟組織直到看到直腸壁為止。

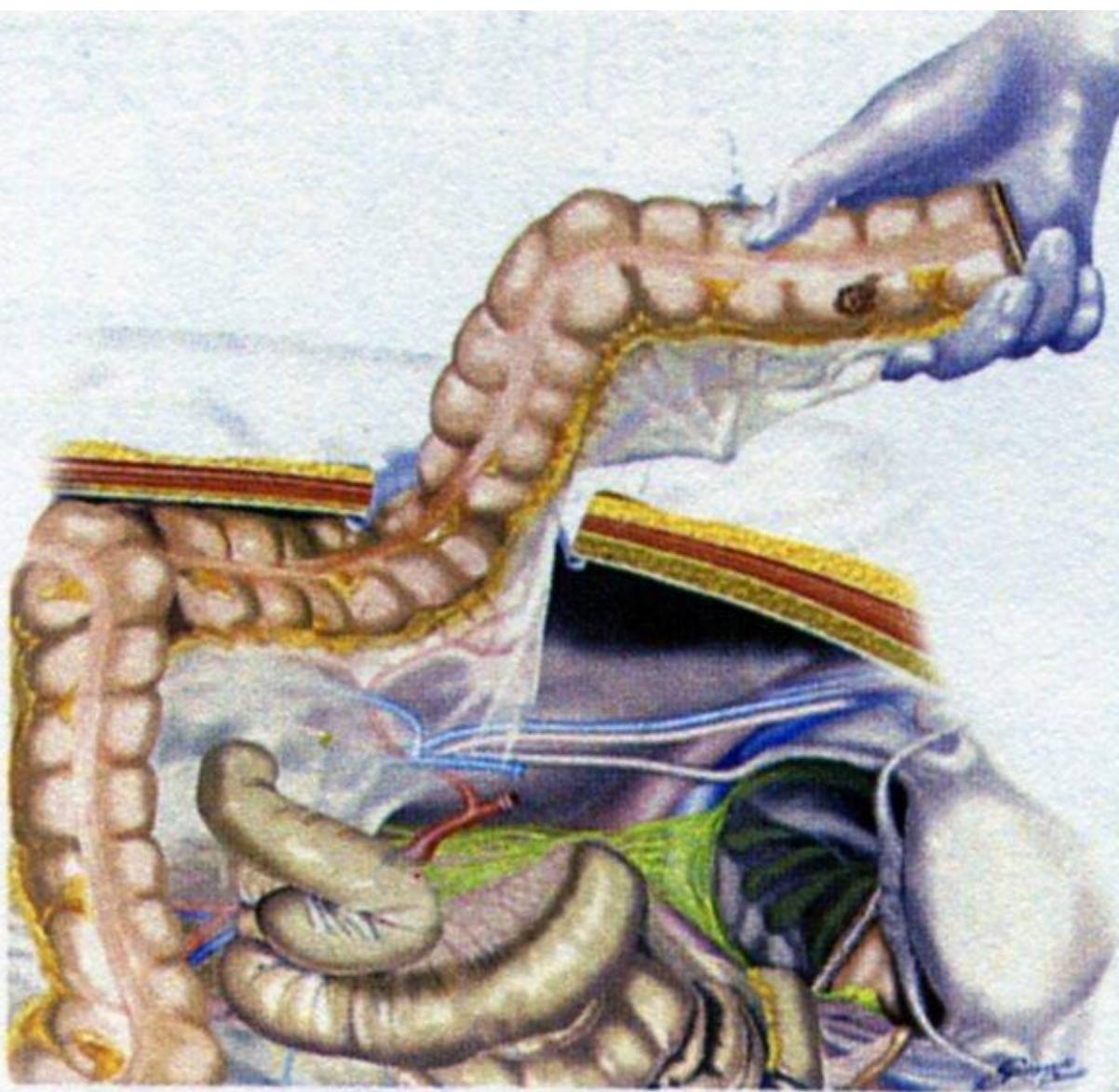




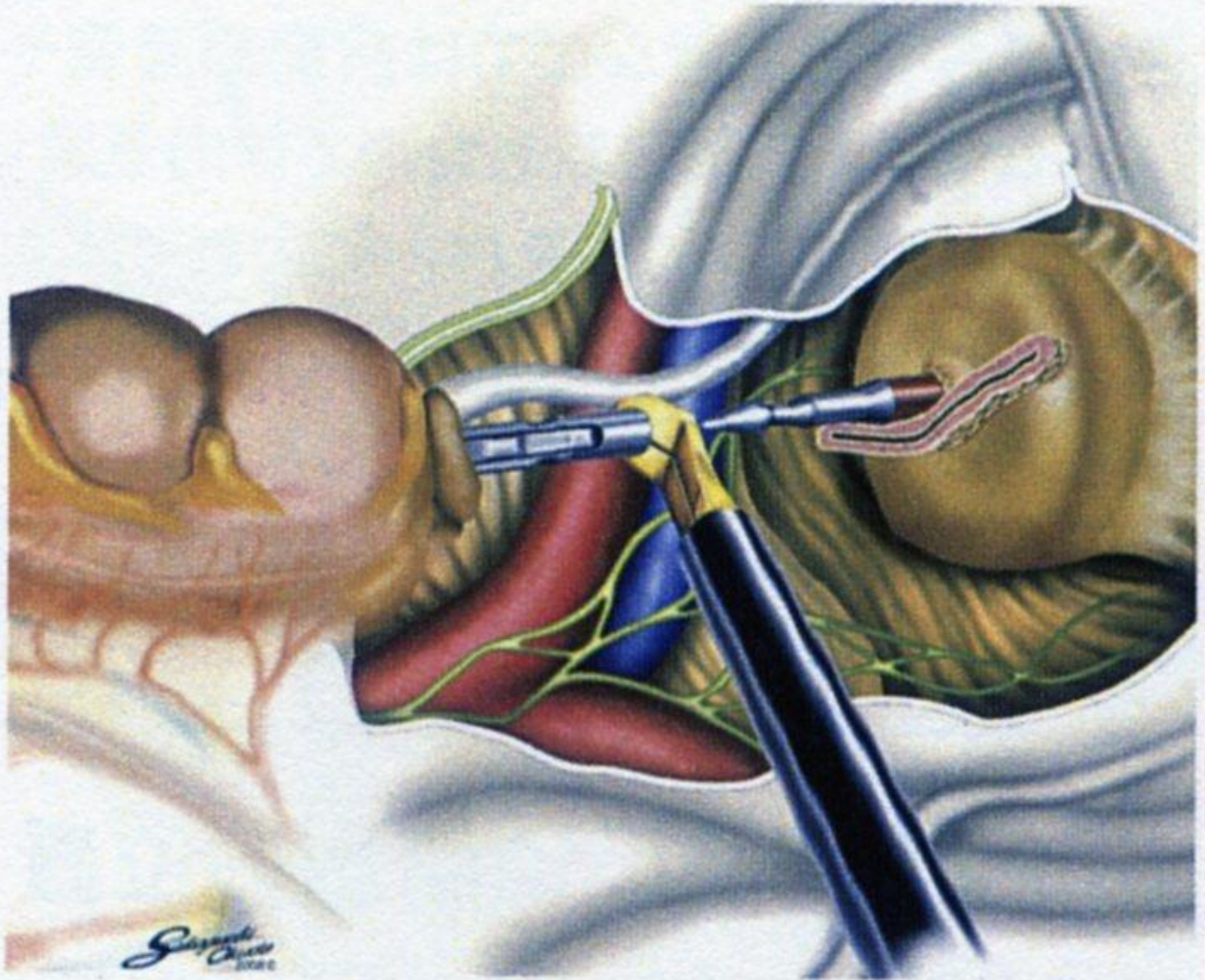


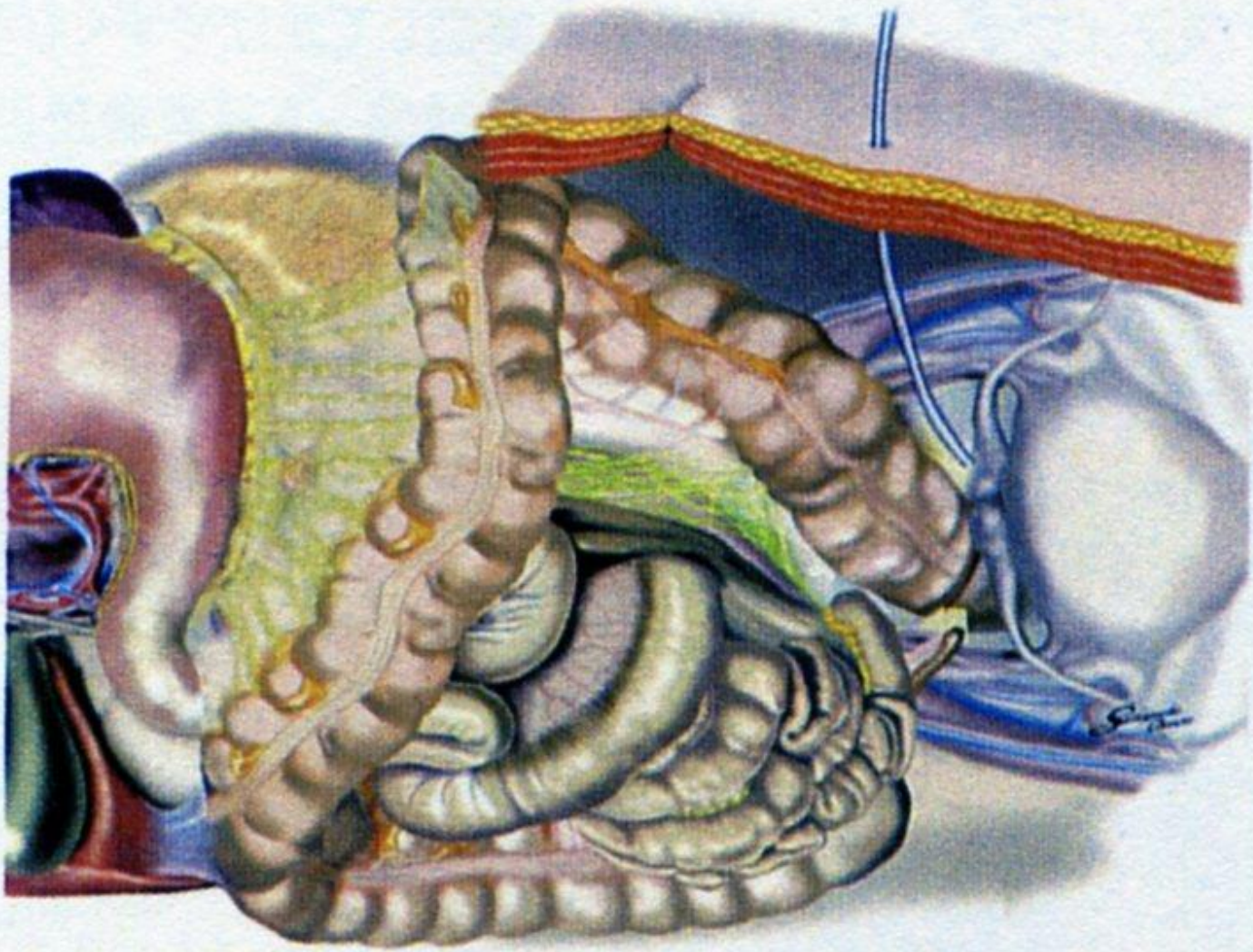
- Double stapling method





- Minilaparotomy, wound protector coverage





• 完成圖

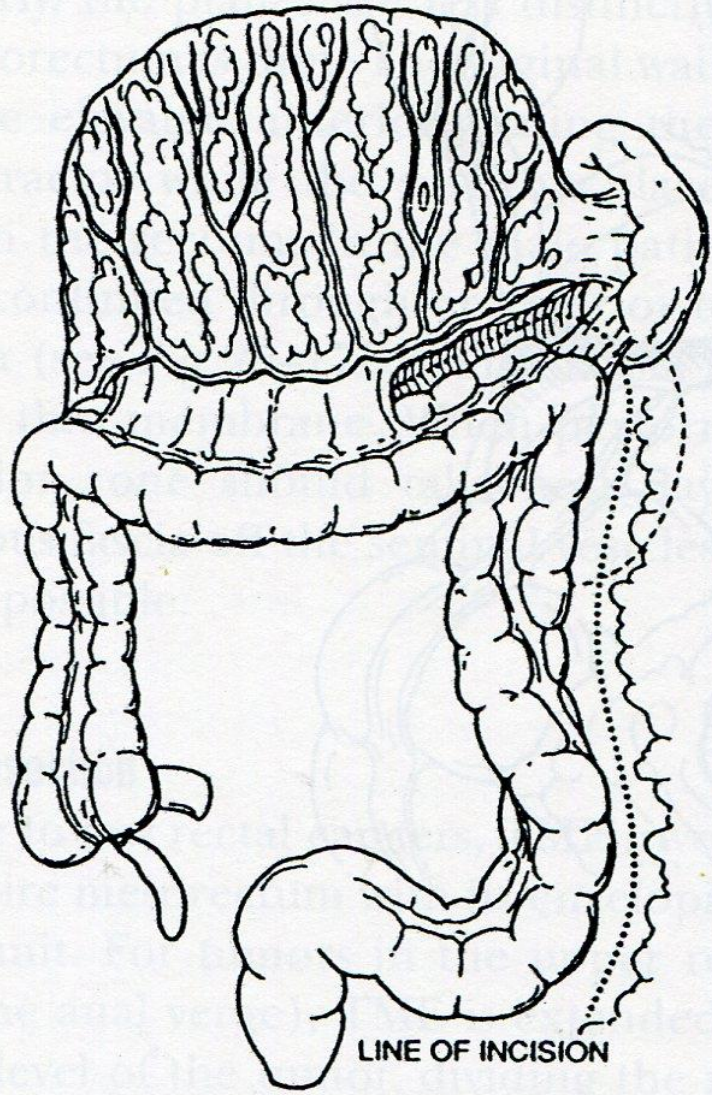
腹腔鏡低前位切除術

台大醫院大腸直腸外科 梁金銅醫師



Abdomino-perineal Resection (APR, Mile's operation)

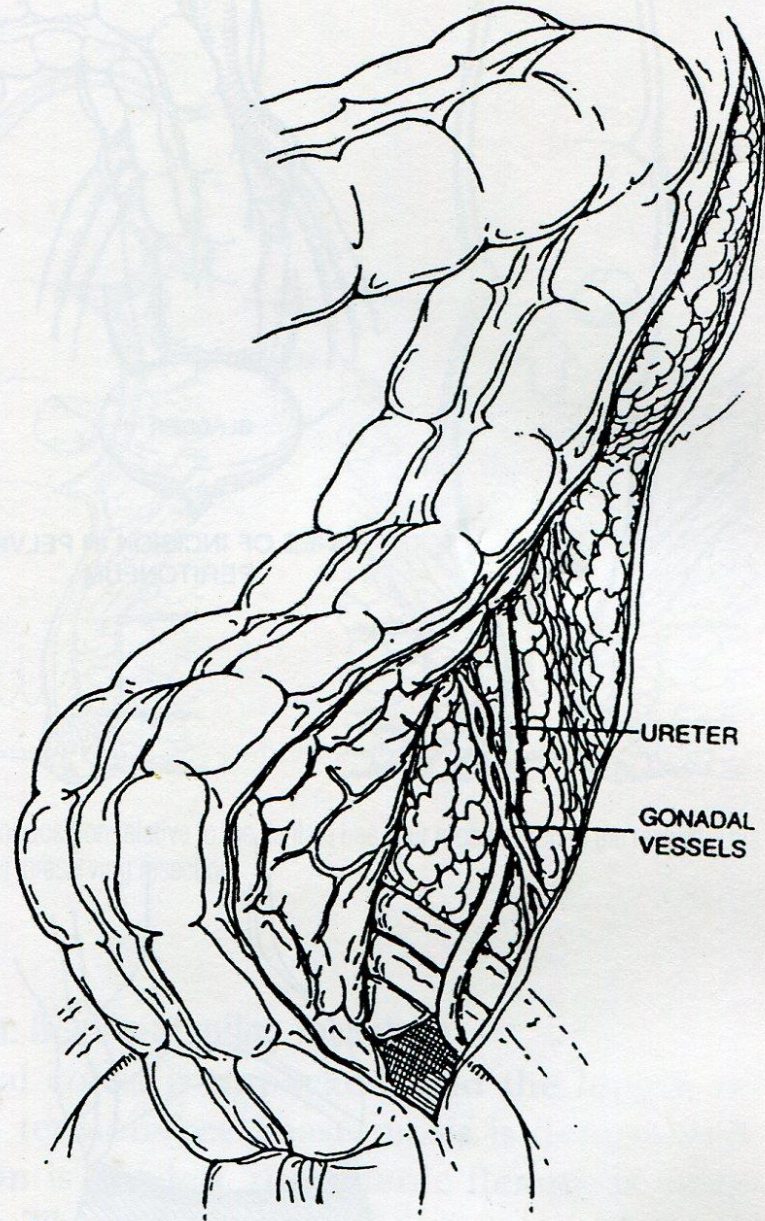
腹部會陰聯合切除手術



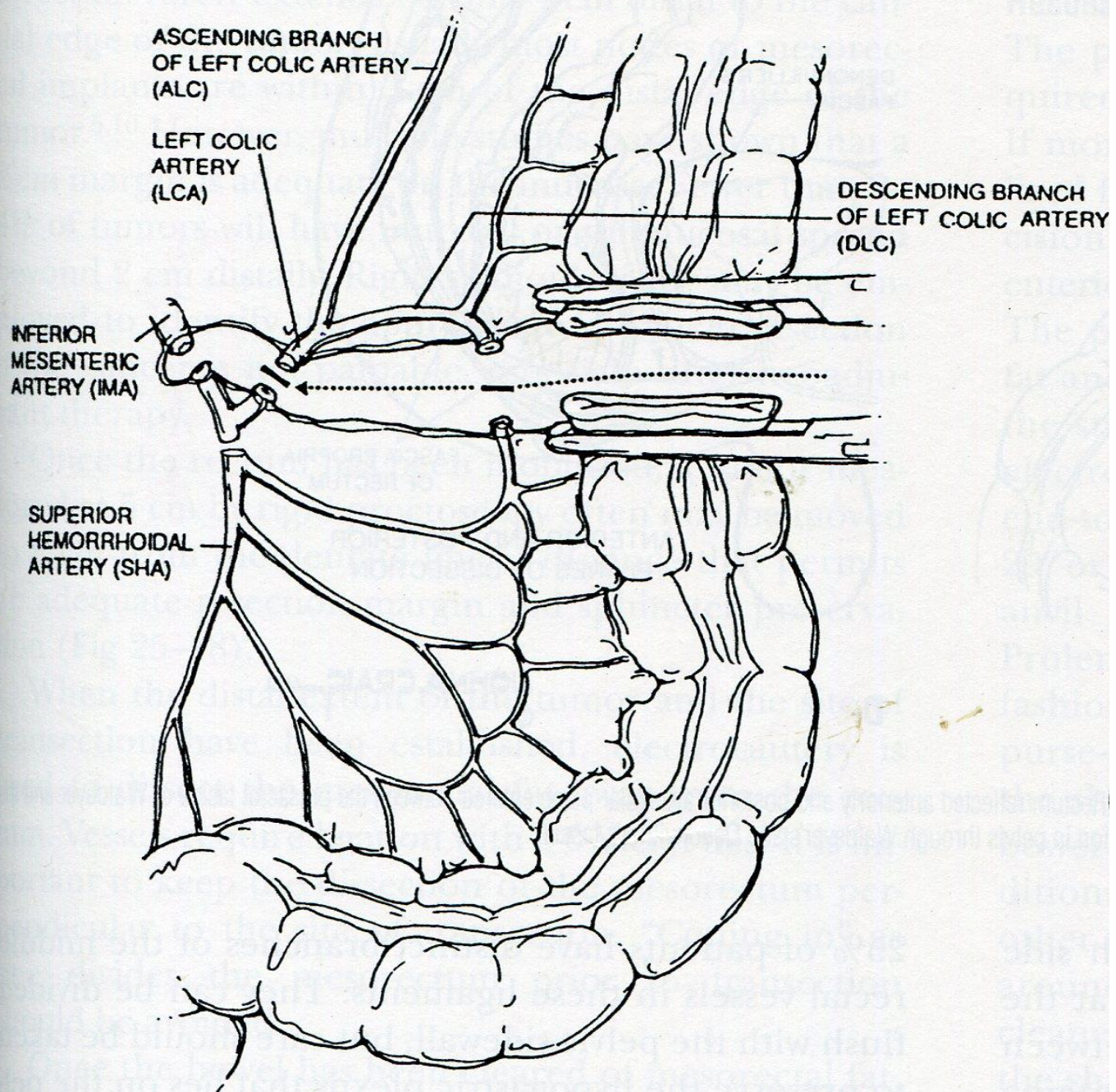
LINE OF INCISION

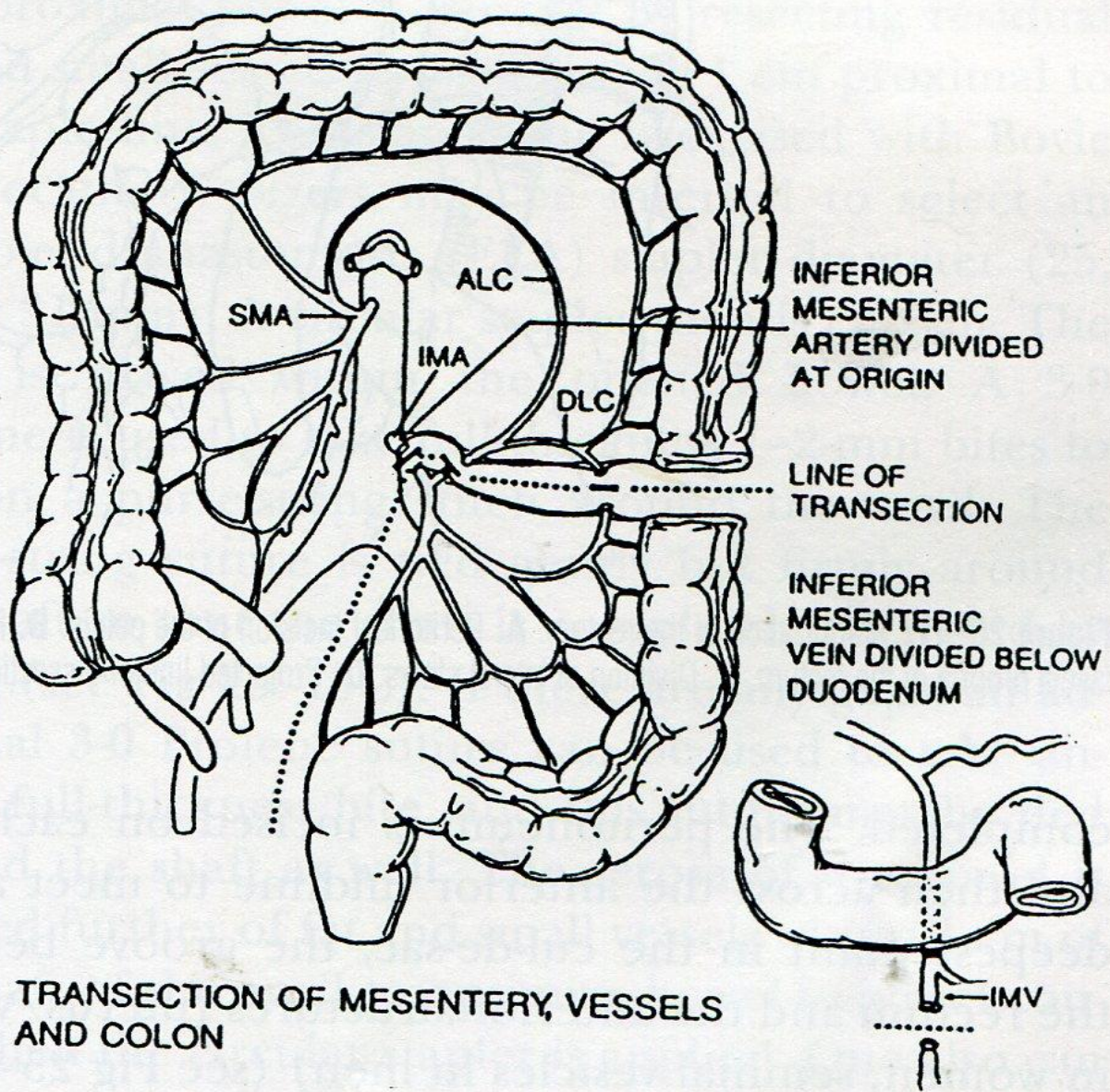
MOBILIZATION OF LEFT COLON

A

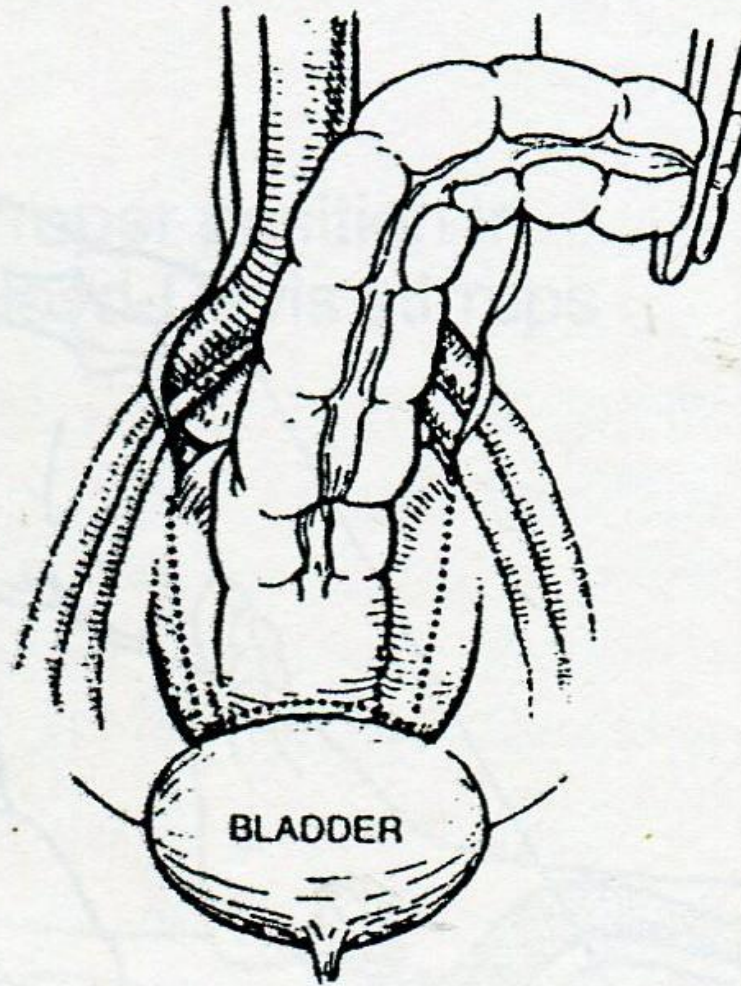


B



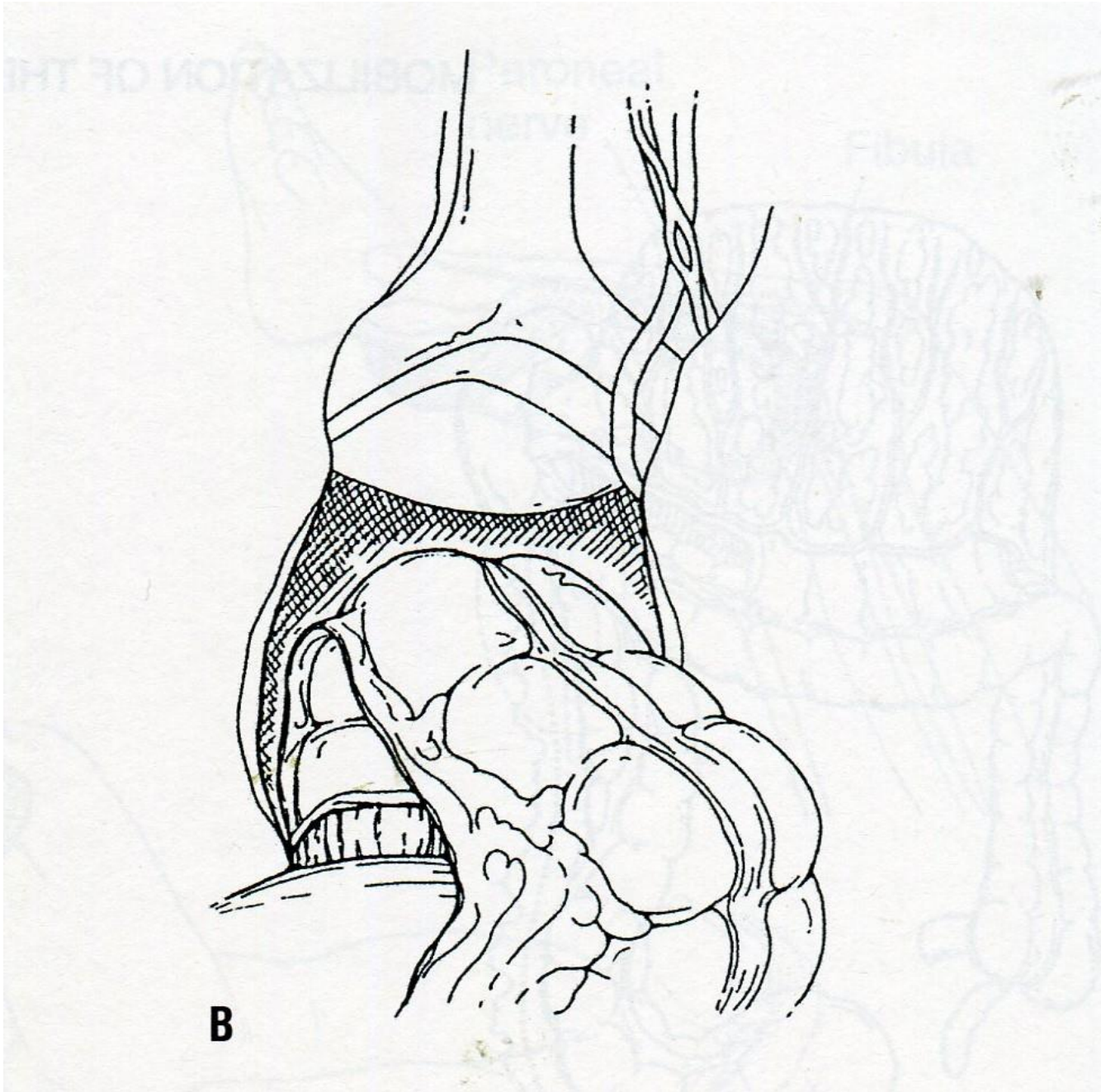


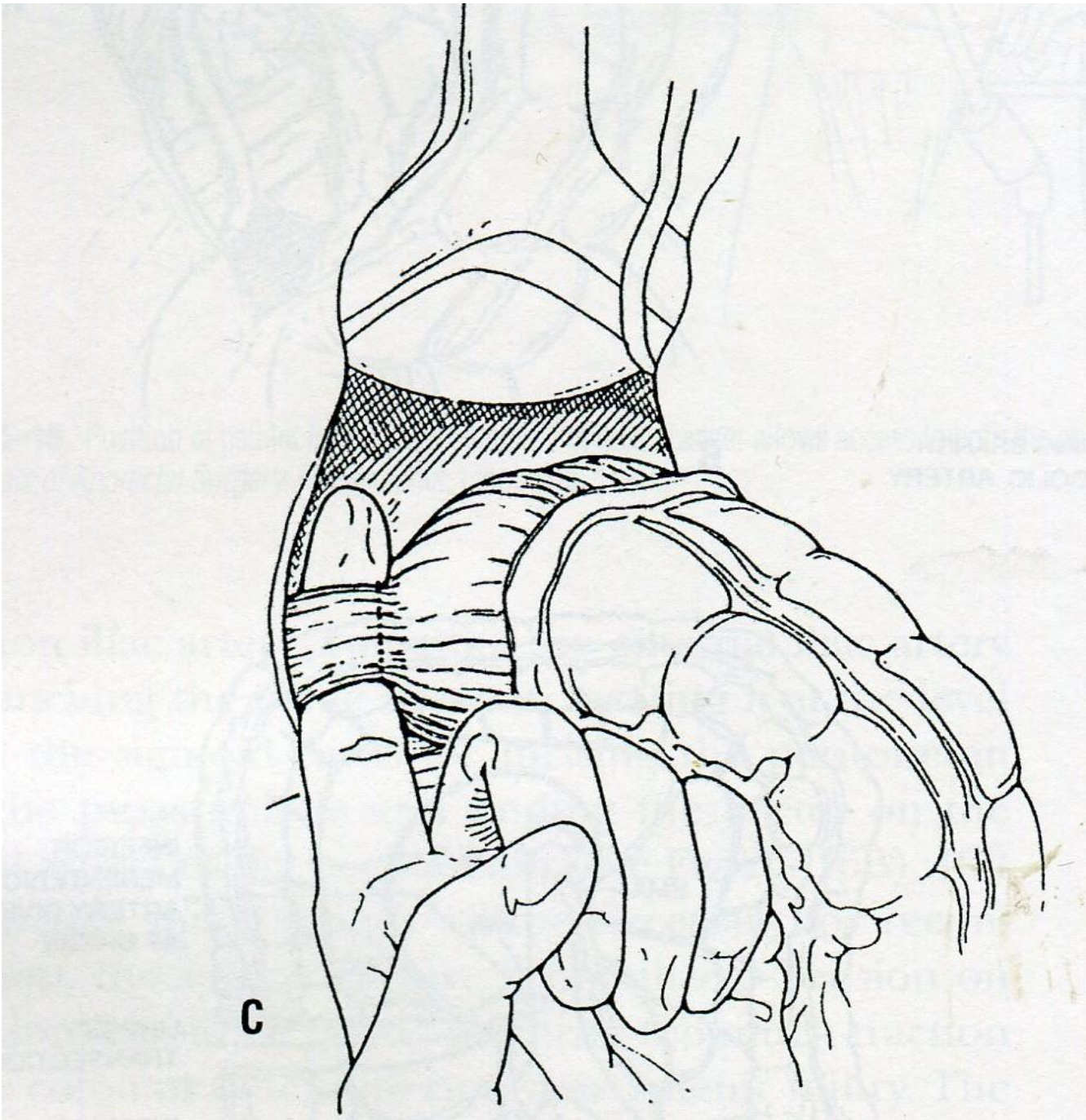
D



LINES OF INCISION IN PELVIC
PERITONEUM

A





WALDEYER'S FASCIA
(PRE-SACRAL)

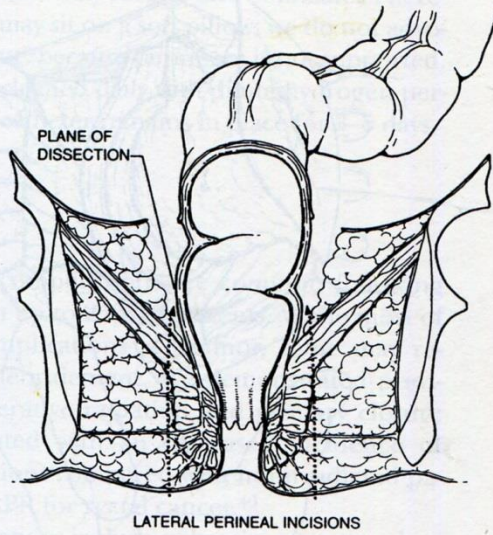
DENONVILLIER'S
FASCIA

FASCIA PROPRIA
OF RECTUM

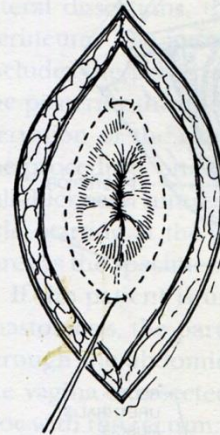
ANTERIOR AND POSTERIOR
PLANES OF DISSECTION

D

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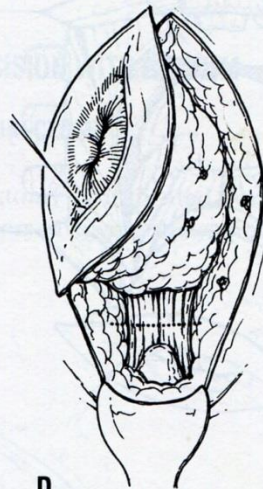
A



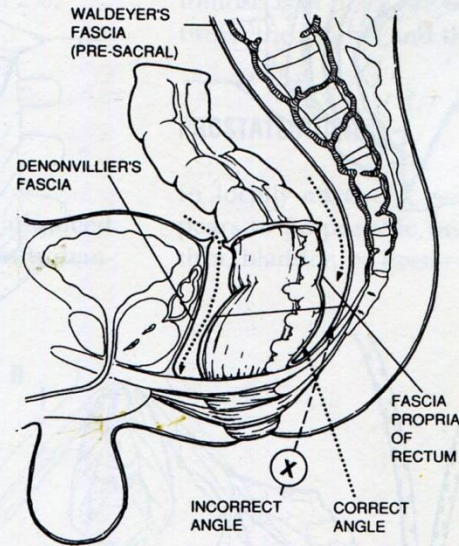
C



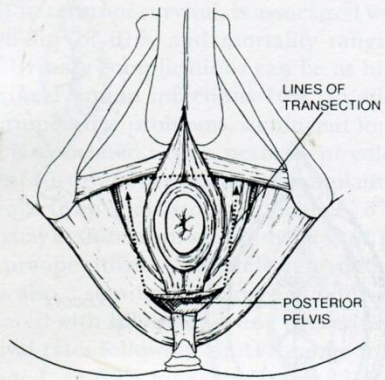
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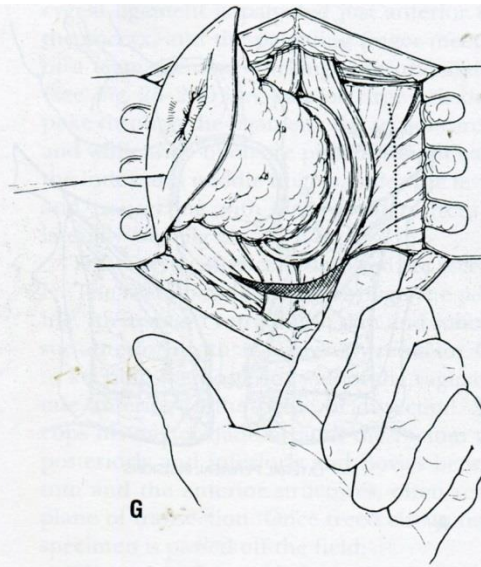
D



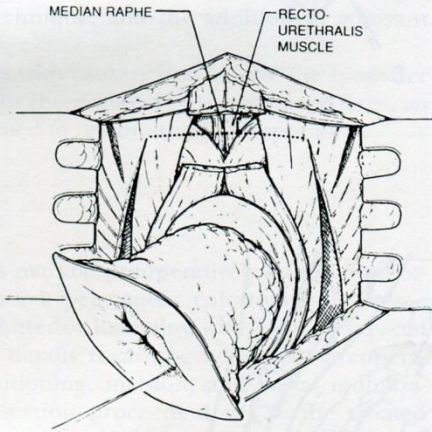
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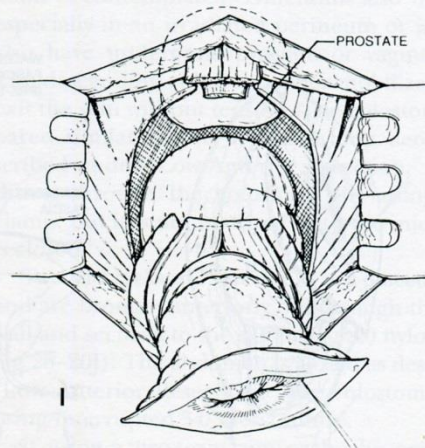
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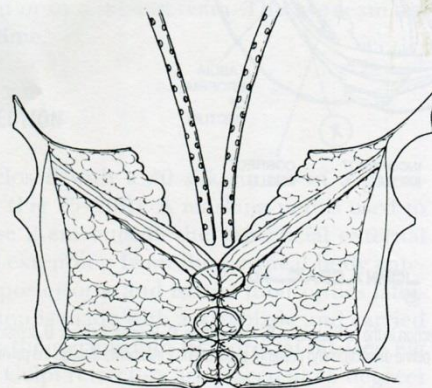
G



H



I



J

JOHN A. CRAIG M.D.
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低位直腸癌腹會陰聯合切除術

台大醫院大腸直腸外科 梁金銅醫師



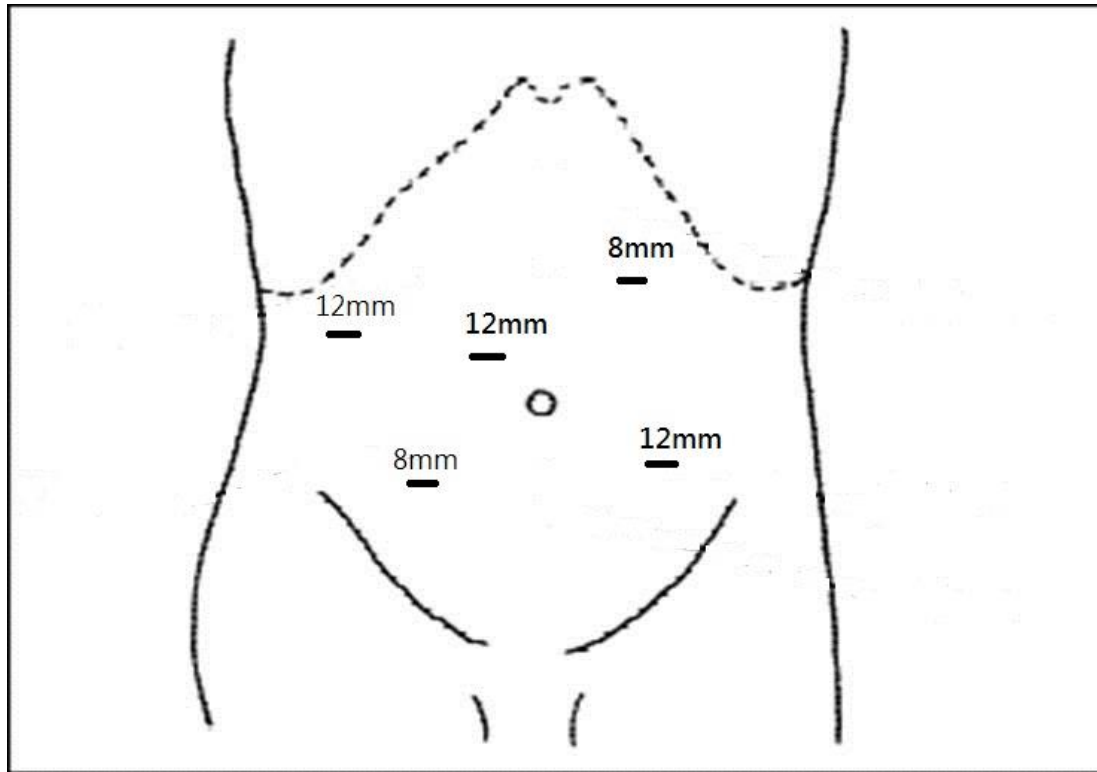
Intersphincteric Restorative Proctocolectomy (IRP)

- The internal anal sphincter (a continuation of the rectal wall) is completely or partially excised.
- Contraindications:
 - 侵犯外括約肌
 - Distal margin不足(<1-2cm)
 - 術前括約肌功能不好
 - 病人選擇(Patient preference)
 - Pre-neoadjuvant uT3 lesion with external sphincter complex involvement

腹腔鏡Pull-through直腸癌手術

台大醫院大腸直腸外科 梁金銅醫師

達文西機械人手術 (Da Vin Ci Robotic Port Setting)



- Lithotomy position, Trendelenburg's position with tilting to right side
- Single-docking, 3-arm system

Robotic Abdominoperineal Resection