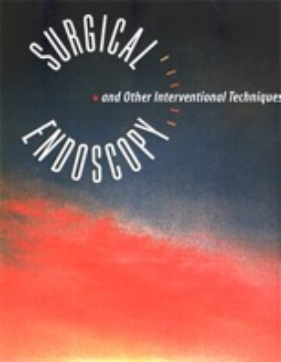


# Hémicolectomie droite laparoscopique



Dr C.Coimbra  
Service de Chirurgie Abdominale et de Transplantation  
CHU Sart Tilman  
Université de Liège

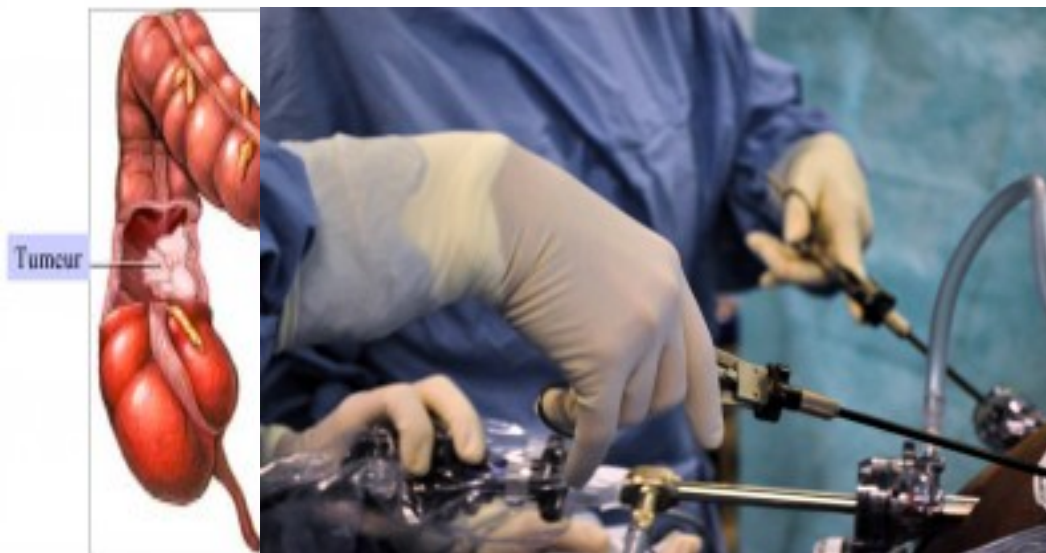


# Minimally invasive colon resection (laparoscopic colectomy)

Jacobs M, Verdeja JC, Goldstein HS

Laparoscopy and Laser Surgery Institute of Miami, Florida

20 patients, dont 9 hémicolectomies droites





# Challenge

- La chirurgie laparoscopique colorectale est techniquement complexe
- Capacité d'identifier et de disséquer les plans anatomiques sans palpation tactile
- Contrôle de plusieurs vaisseaux
- Plusieurs quadrants abdominaux
- Rétablissement de la continuité intestinale
- Craintes oncologiques (métastases sur trocars)



Courbe d'apprentissage

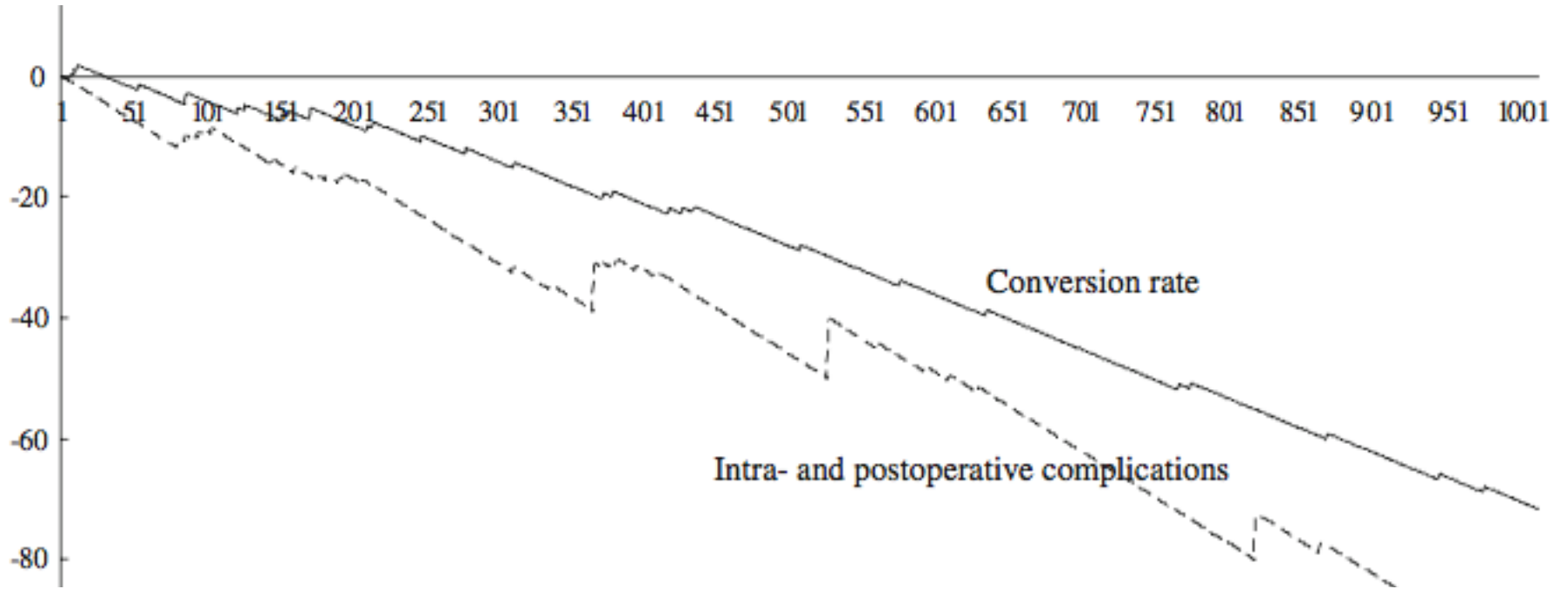
# Courbe d'apprentissage

- Nombre de cas nécessaires
- Temps opératoire
- Complications peropératoires
- Taux de conversion
- Complications postopératoires
- Durée d'hospitalisation

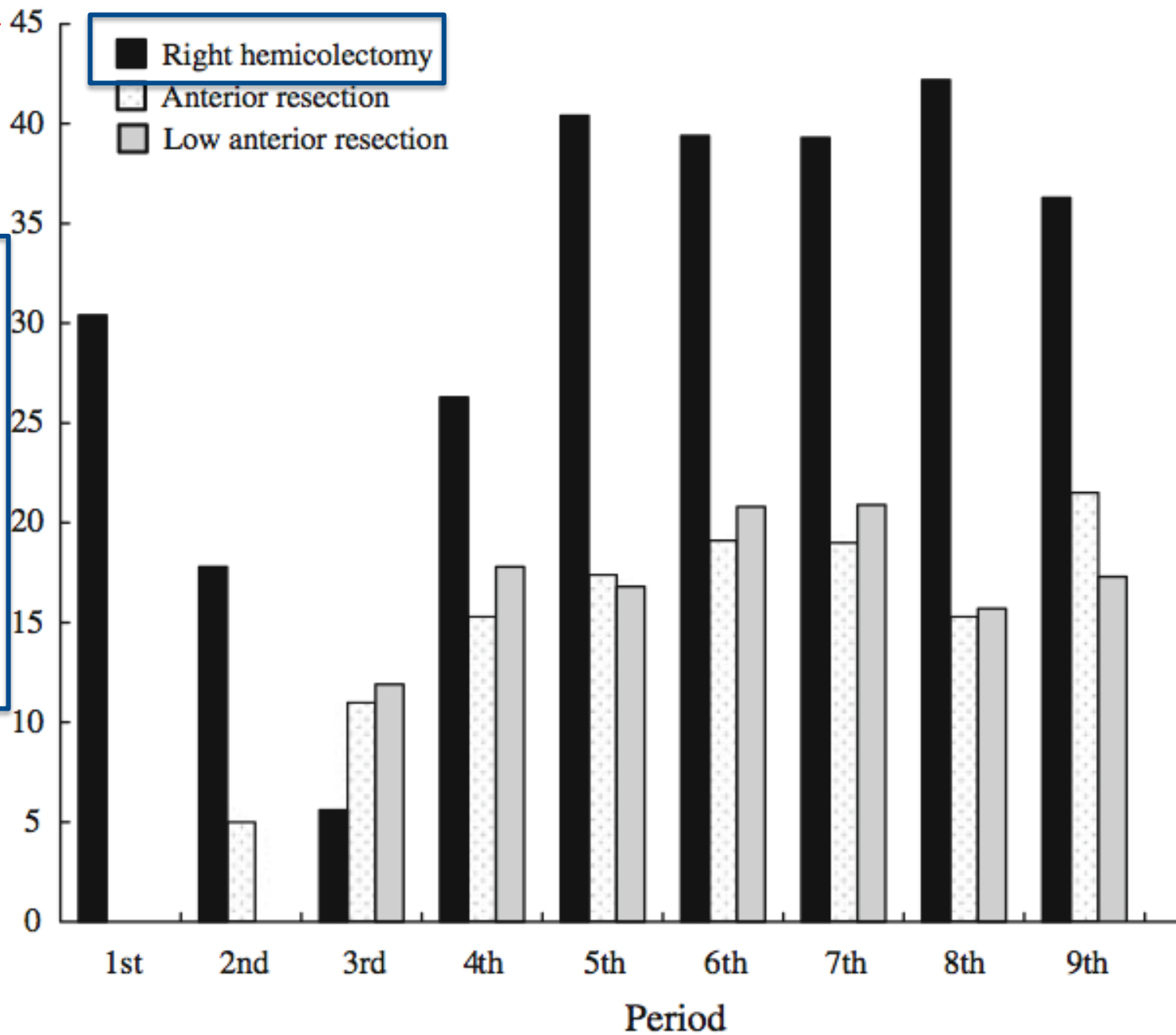


Résultats oncologiques

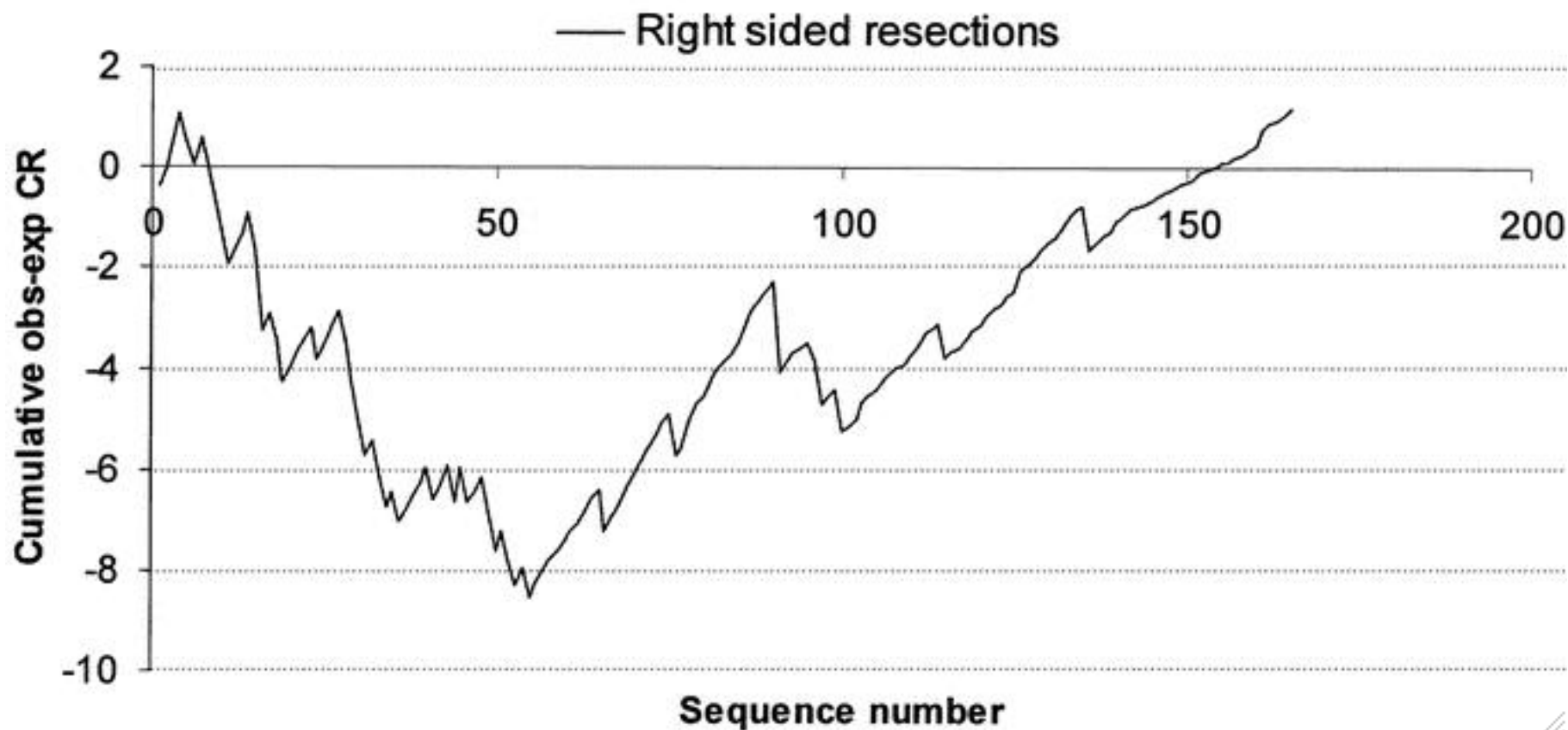
Period	No. of cases	Proportion of laparoscopic surgery among all surgery (%)	Mean BMI (kg/m <sup>2</sup> )	Previous major abdominal surgery (%)	Combined operation (%)	Conversion to open surgery (%)	Perioperative complications (%)	Anastomotic leakage in rectal surgery (%)
1	≤30	25.8	22.4	6.7	6.7	10	–	–
2	31–58	14.3	21.9	14.3	17.9	3.6	–	–
3	59–100	34.5	22.1	16.7	9.5	4.8	13.3	20
4	101–200	85.8	22.6	16	13	5	9	6
5	201–300	88.8	23.5	21	9	4	1	2.6
6	301–400	91.3	23.2	22	7	3	8	5.3
7	401–500	83.8	23.5	19	7	3	1	0
8	501–800	86.4	23.4	17	9.3	1.7	1.6	0.8
9	801–1,014	91.1	23.4	19.2	9.3	1.4	2.3	2.4



No. of retrieved lymph node







55 cas ( 30-70)

# Cela vaut-il la peine?

- Diminution de la douleur post-opératoire
- Diminution de l'iléus post-opératoire
- Diminution de la durée d'hospitalisation
- Bénéfice esthétique
- Diminution des coûts ? Instruments?
- Bénéfices à long terme?

# Coûts

Costs	Laparoscopic (range)	Open (range)	<i>P</i> value
Emergency services	0 (range 0–120)	0 (range 0–447)	0.01
Anesthesia	256.5 (IQR 208–230)	257.5 (IQR 194.8–347)	0.86
Pharmacy	269 (IQR 209–364)	432.5 (IQR 330.5–612.3)	<0.0001
Medical therapy	47.5 (IQR 30–66)	96.5 (IQR 56.8–177.5)	<0.0001
Laboratory	64 (IQR 51–101.5)	122.5 (IQR 83.8–213)	<0.0001
Nursing			
ICU	0 (range, 0–4505)	0 (range, 0–20847)	0.844
Routine	674 (IQR 464–995.5)	1476 (IQR 1075.3–2038.3)	<0.0001
Radiology	0 (IQR 0–13.8)	14 (IQR 0–30)	0.0004
OR costs			
Labor costs	292 (IQR 240.5–346)	226 (IQR 185–309)	<0.0001
Supply costs	1154 (IQR 794.5–1371.5)	506.5 (IQR 436.8–567.8)	<0.0001
Total OR costs	1784.5 (1408.8–2097.3)	1021.5 (847.3–1219.3)	<0.0001
Total direct costs	3208.5 (IQR 2798.8–4034)	3654.5 (IQR 2922.3–4787)	0.0034

# Coûts

Author (Year)	Operation	Indication	LAC	OC	Cost for LAC	Note
Falk 1993	All	Benign and malignant	39		Similar	
Senagore 1993	All	Benign and malignant	38	102	Lower	
Saba 1995	LHC/RHC	Benign and malignant	25	25	Higher	Only OR costs compared
Bokey 1996	RHC	Cancer	28	33	Higher	
Pfeifer 1996	All	Benign and malignant	53	53	Similar	
Khalili 1998	All	Cancer	80	90	Similar	OR costs higher
Philipson 1997	RHC	Cancer	28	33	Higher	Only OR costs compared
Joo 1998	All	Polyps	23	22	Similar	
Kohler 1998	SGC	Diverticular	25	34	Lower	
Lieberman 1999	SGC	Diverticular	14	14	Lower	OR costs higher
Young-Fadok '01	RHC	Crohn's	33	33	Lower	
Senagore 2002	SGC	Diverticular	61	71	Lower	OR costs higher
Liang 2002	SGC	Polyps	18	21	Higher	
Duepre 2002	RHC	Crohn's	21	24	Lower	

Delaney C, Ann Surg (2003)238: 67–72)

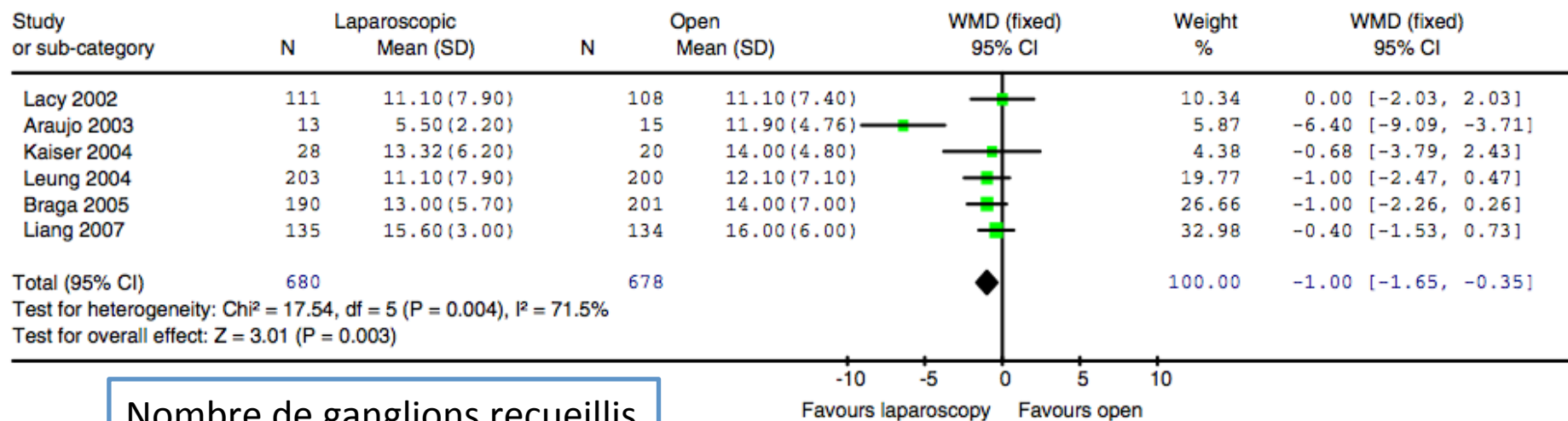




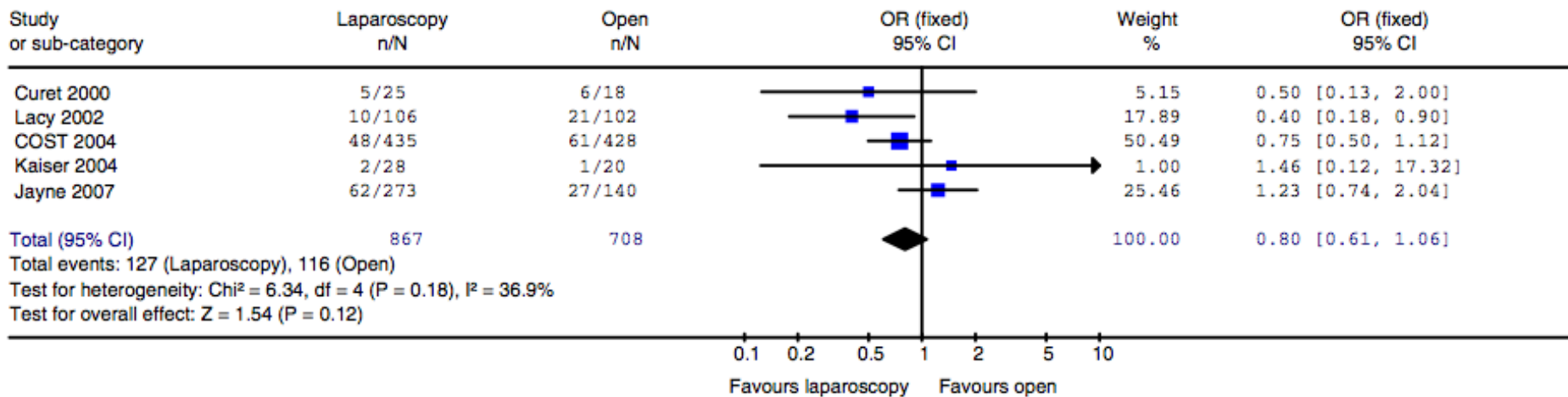
# Long-term outcome of laparoscopic surgery for colorectal cancer: A cochrane systematic review of randomised controlled trials ☆

Study	Localisation of the tumour	Follow-up (months)	Analyzed (n)
Araujo et al. <sup>16</sup>	Distal rectum	47 <sup>a</sup>	28
Braga et al. <sup>10</sup>	Colon or rectum	36 <sup>b</sup>	391
COST <sup>8</sup>	Left, right or sigmoid colon	53 <sup>b</sup>	863
Curet et al. <sup>17</sup>	Left, right, transverse or sigmoid colon	59 <sup>a</sup>	43
Jayne et al. <sup>12</sup>	Colon or rectum	36 <sup>b</sup>	794
Kaiser et al. <sup>18</sup>	Left, right or sigmoid colon	35 <sup>b</sup>	48
Lacy et al. <sup>7</sup>	Left, right or sigmoid colon	43 <sup>b</sup>	219
Leung et al. <sup>9</sup>	Sigmoid colon, rectum	51 <sup>a</sup>	403
Liang et al. <sup>11</sup>	Left colon	40 <sup>b</sup>	269
Milsom et al. <sup>19</sup>	Right or sigmoid colon, rectum	19 <sup>b</sup>	80
Winslow et al. <sup>20</sup>	Left, right or sigmoid colon	30 <sup>a</sup>	37
Zhou et al. <sup>21</sup>	Rectum	1–16 <sup>c</sup>	171

3346 patients



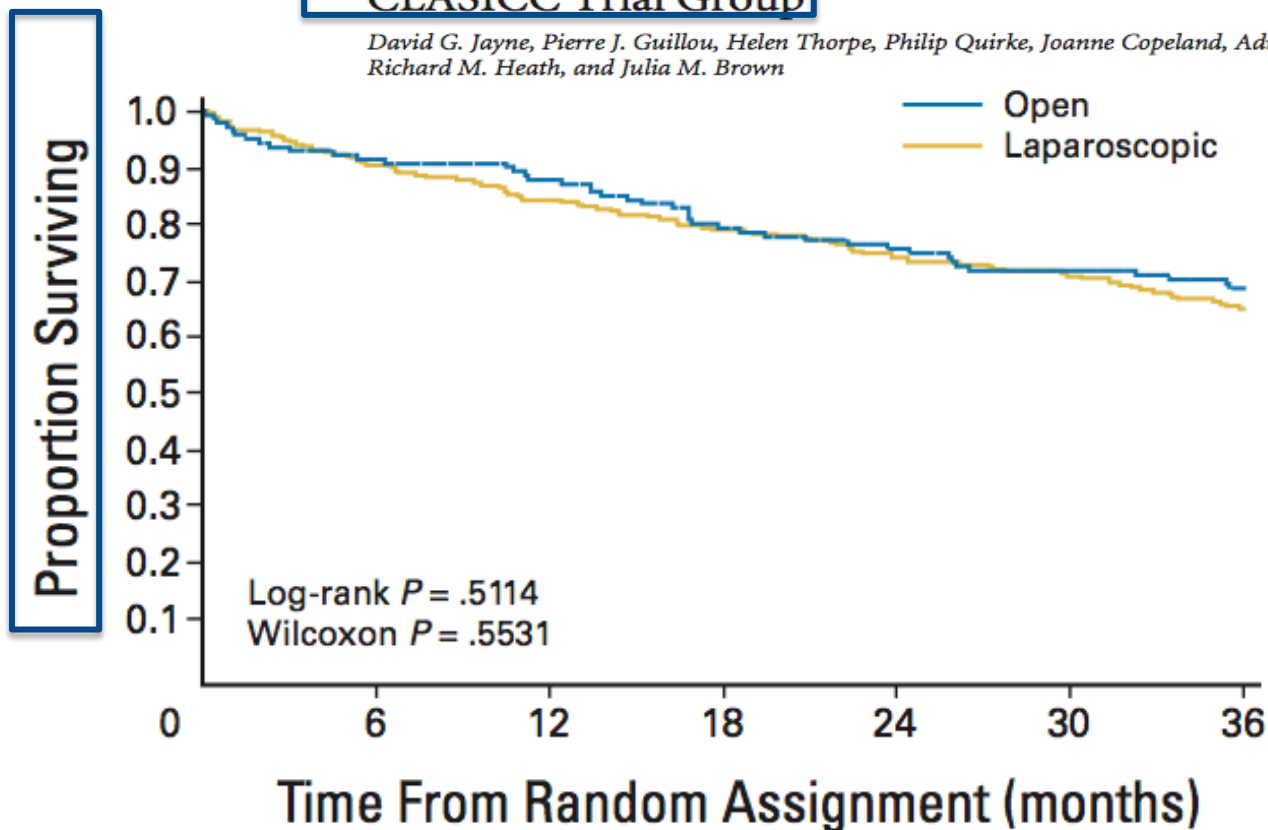
Nombre de ganglions recueillis



Mortalité liée au cancer

## Randomized Trial of Laparoscopic-Assisted Resection of Colorectal Carcinoma: 3-Year Results of the UK MRC CLASICC Trial Group

David G. Jayne, Pierre J. Guillou, Helen Thorpe, Philip Quirke, Joanne Copeland, Adrian M.H. Smith, Richard M. Heath, and Julia M. Brown



No. at risk

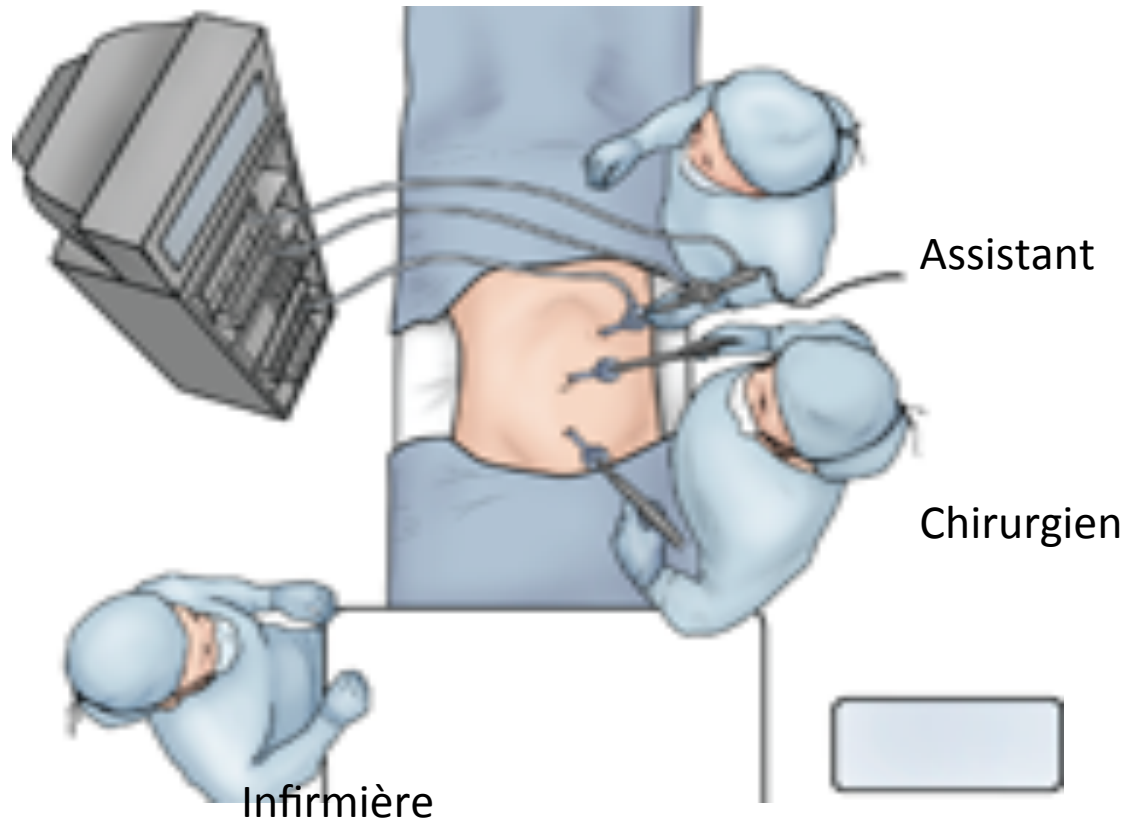
Open	140	128	122	109	102	92	84
Laparoscopic	273	247	226	209	190	174	153

# Préparation du patient

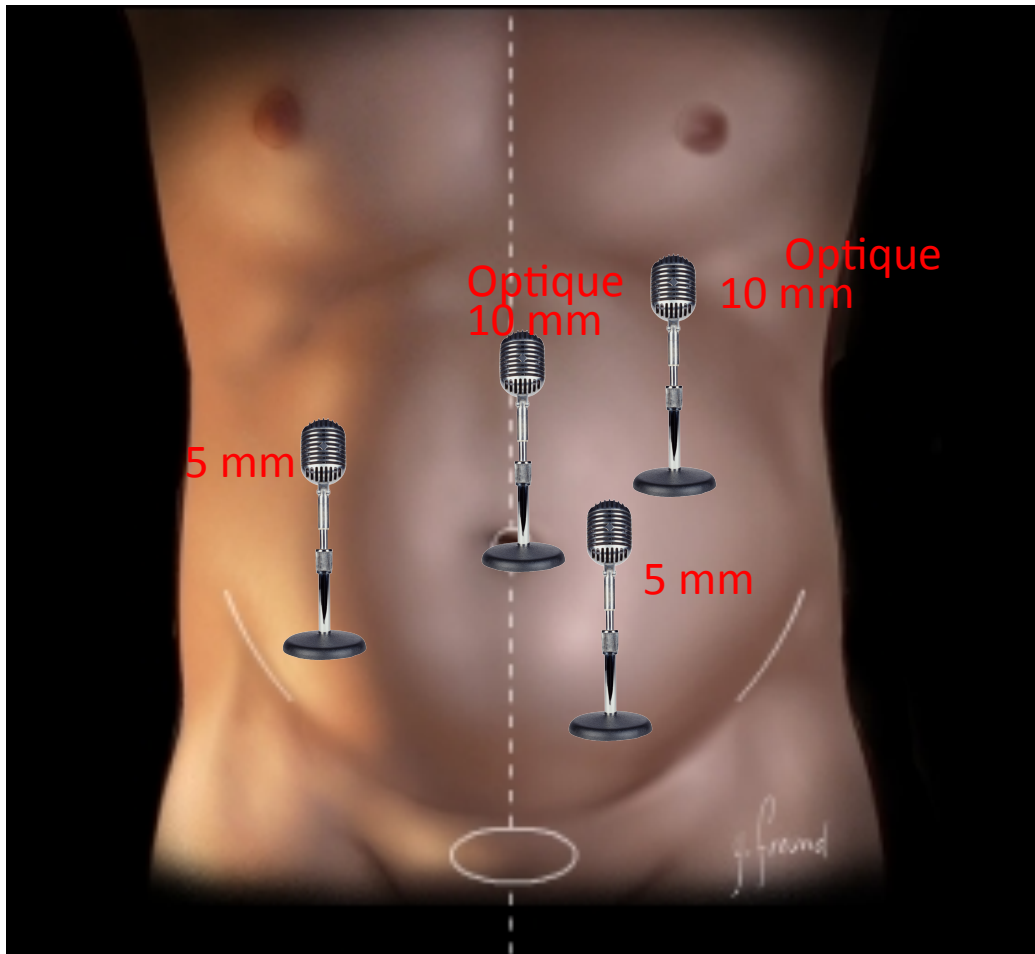
- Régime sans fibres pendant 3-5 jours
- A jeûn pour les solides (6 h) et les liquides (2h)
- Rasage et désinfection
- Bas de contention (et bottes pneumatiques)
- Sonde urinaire (retirée à la fin de l'intervention)
- Patient en décubitus dorsal , jambes écartées
- Antibiotiques peropératoires (CS II-métronidazole)



# Installation du patient



# Installation du patient

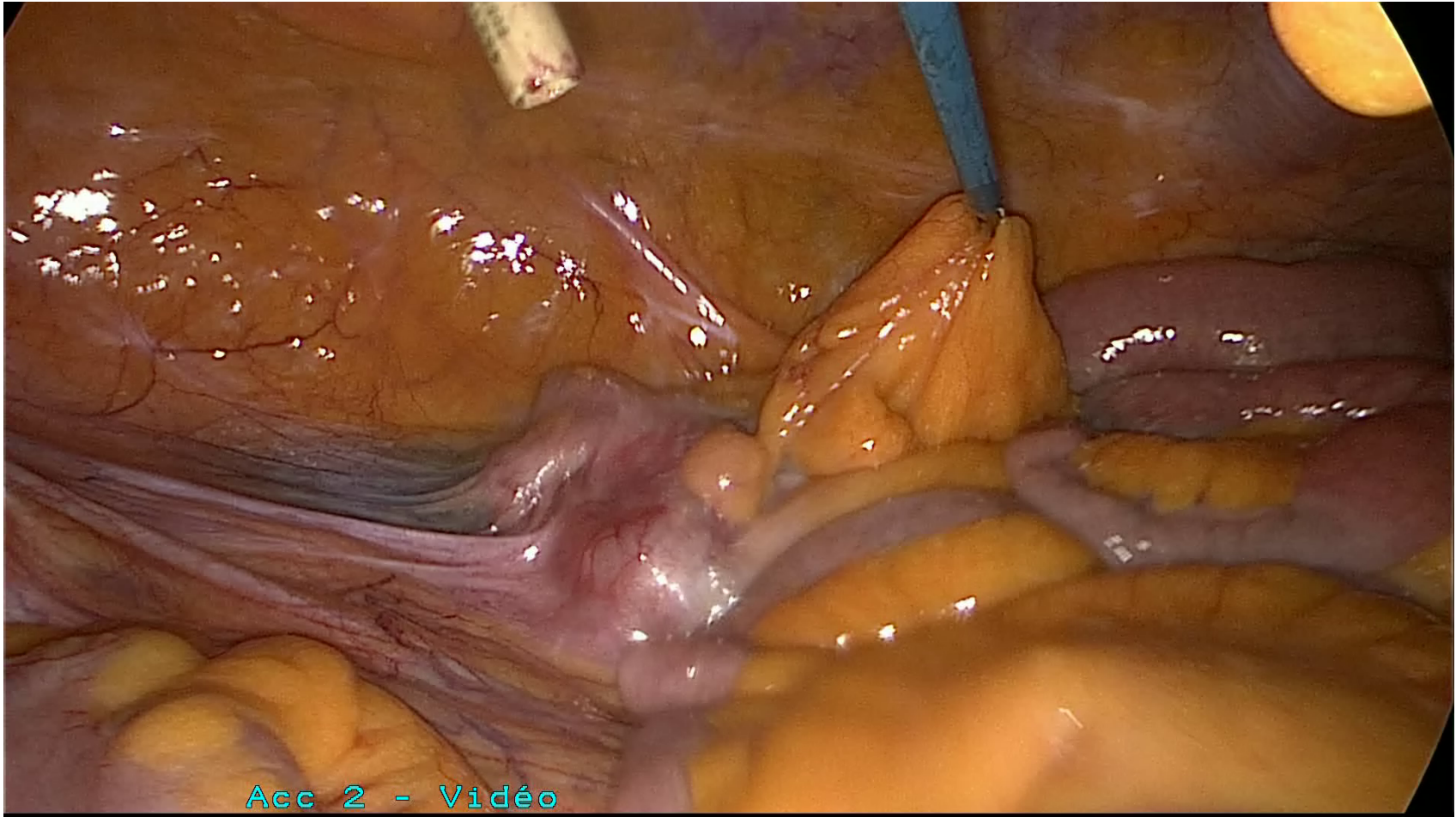


Patient en Trendelenburg

Tourné sur la gauche

# Etape 1

Vérifier la résecabilité laparoscopique



Acc 2 - Vidéo



# Etape 2

S'assurer de l'absence de métastases  
hépatiques et péritonéales

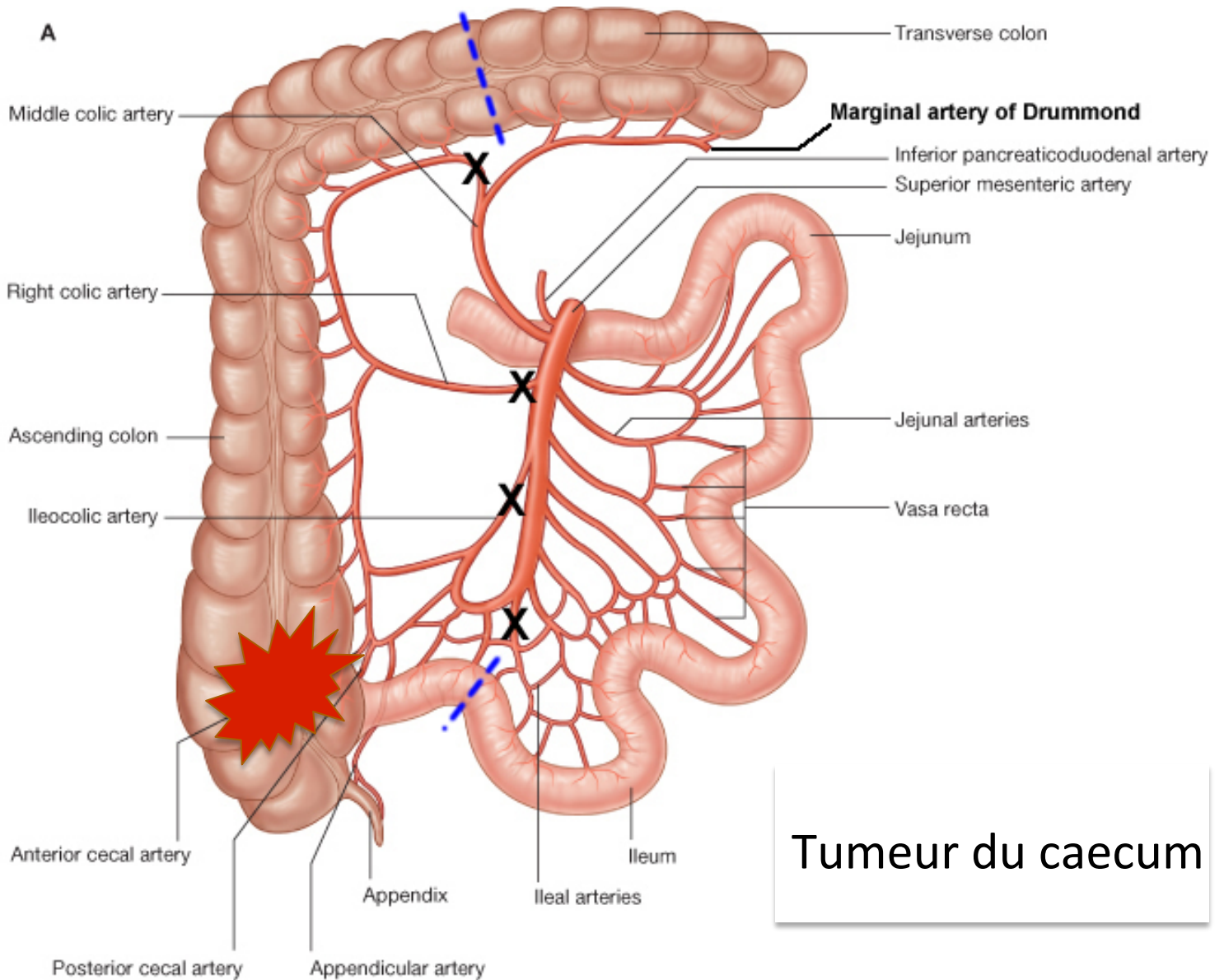


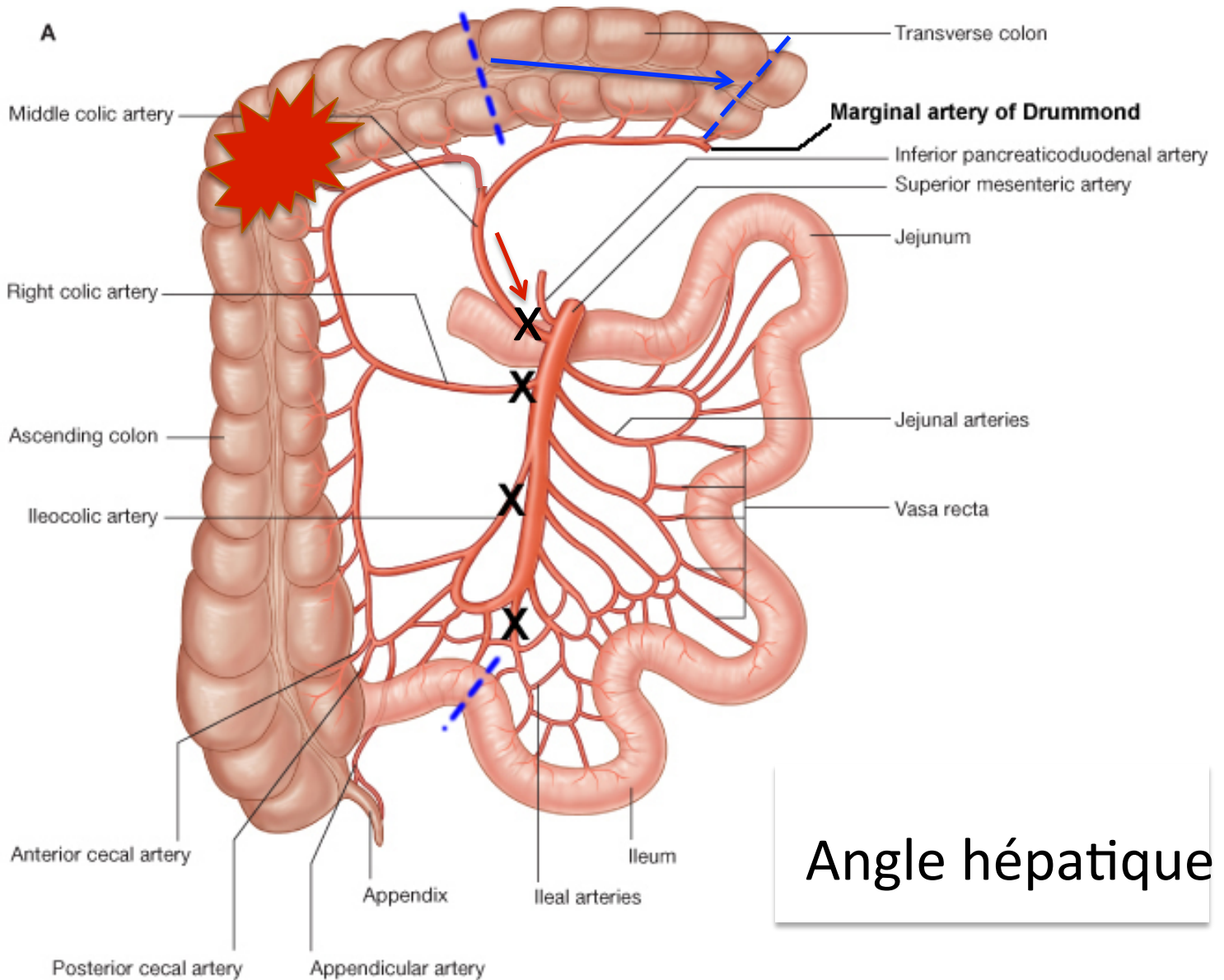


## Etape 3

Approche médiale → latérale

Contrôle des vaisseaux iléo-coliques





## Etape 3

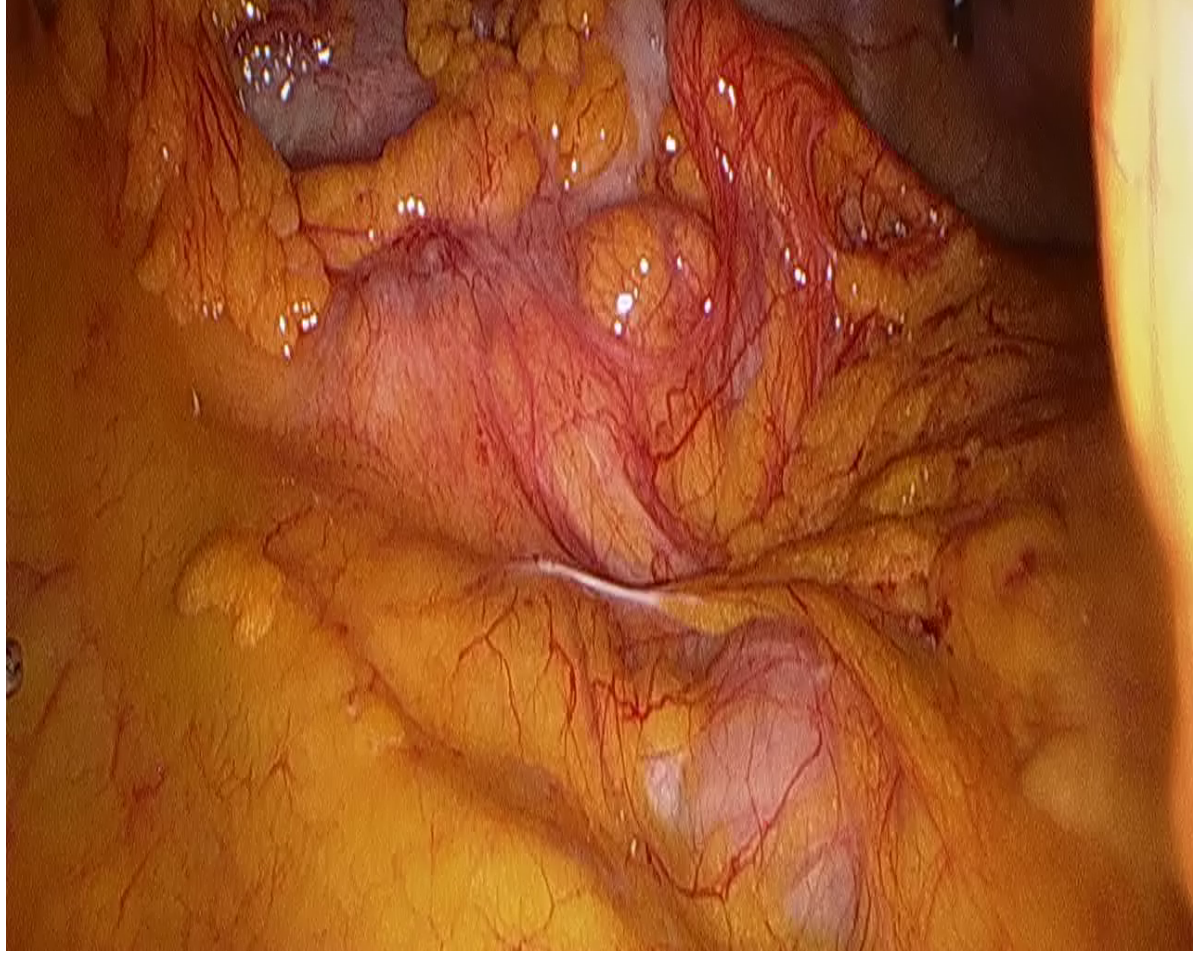
Approche médiale → latérale

Contrôle des vaisseaux iléo-coliques

Incision du péritoine partie inf. du duodénum







## Etape 3

Approche médiale → latérale

Contrôle des vaisseaux iléo-coliques

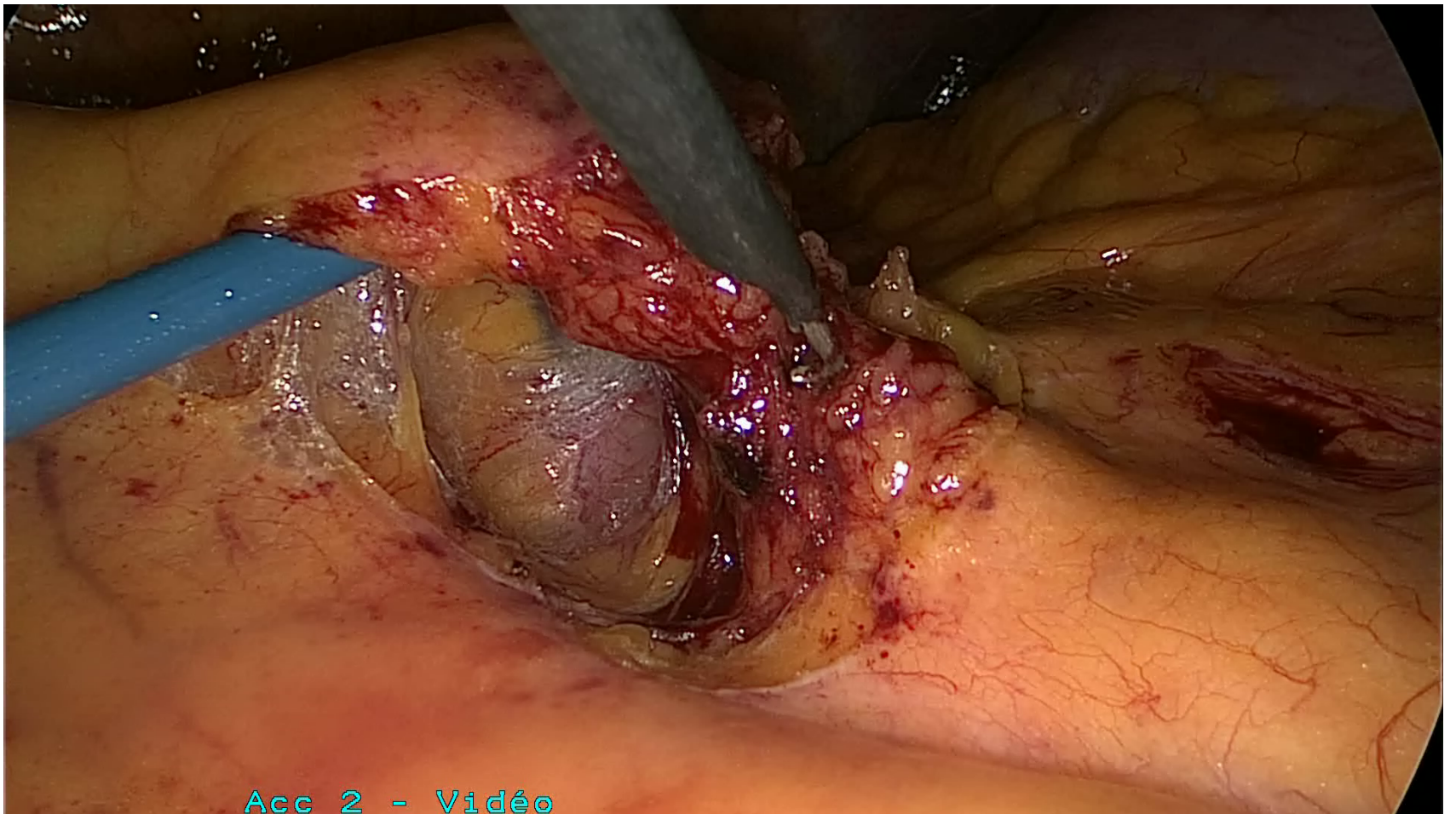
Incision du péritoine partie inf. du duodénum

Dissection des vaisseaux iléo-coliques à l'origine

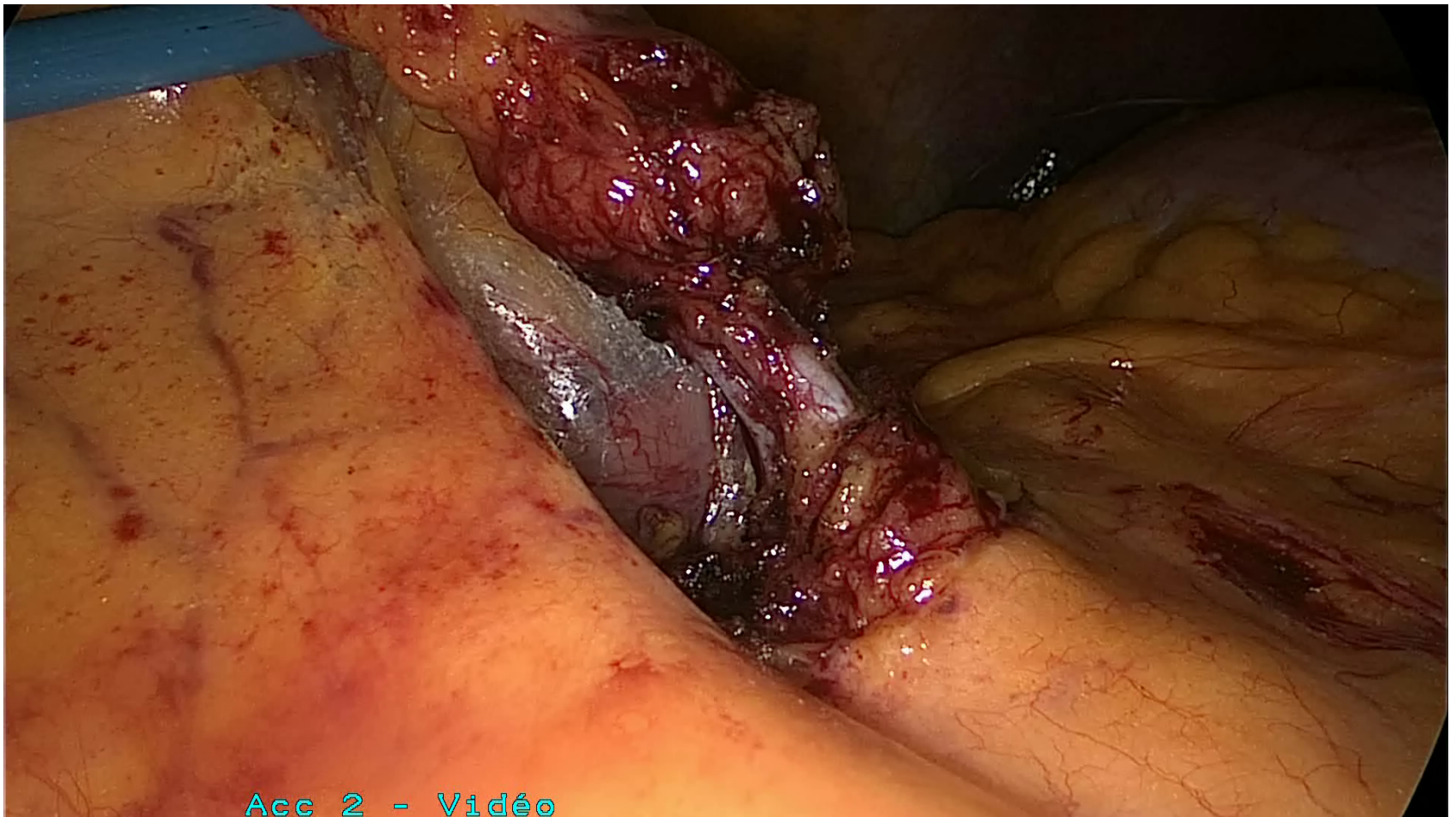






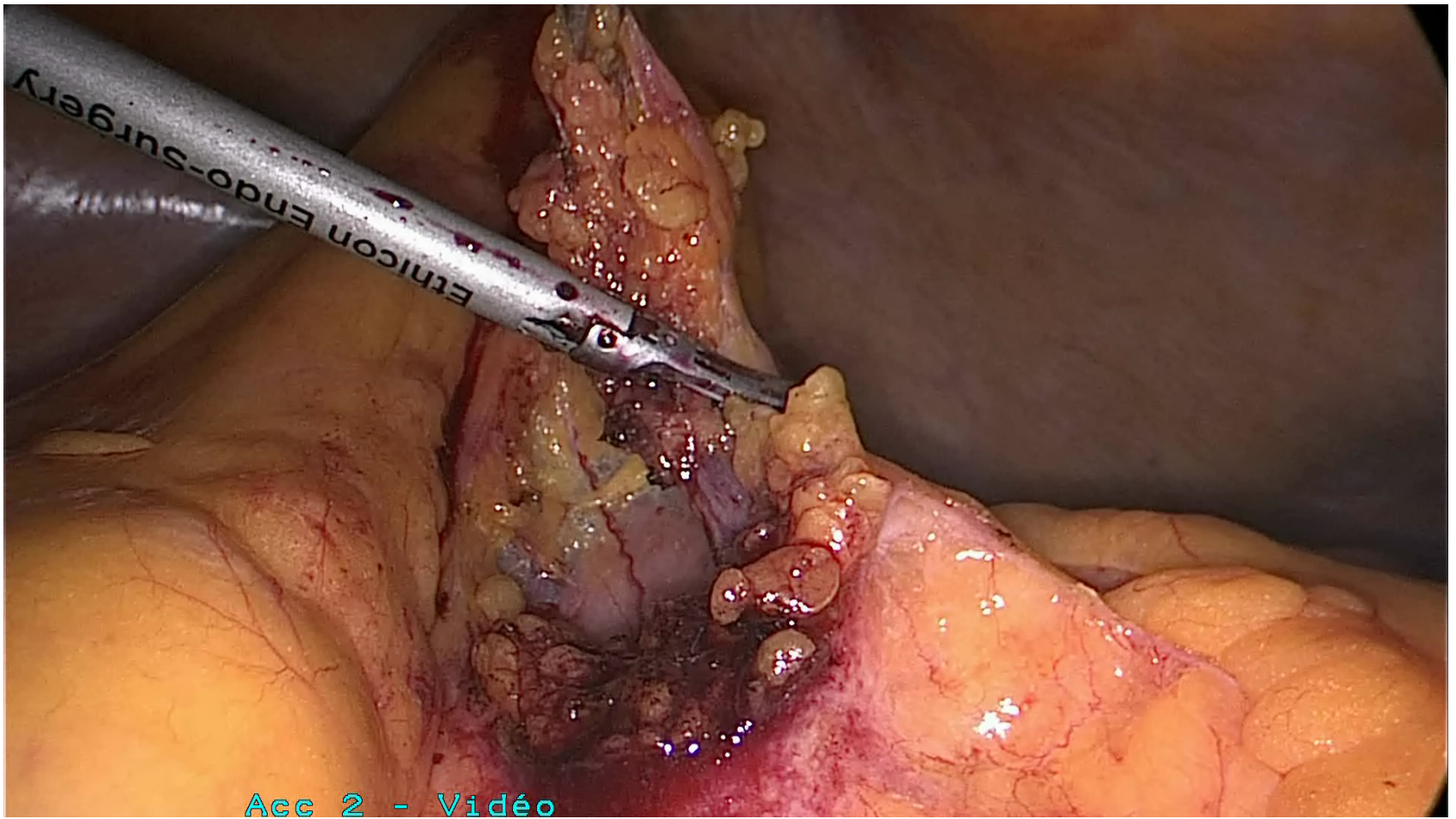


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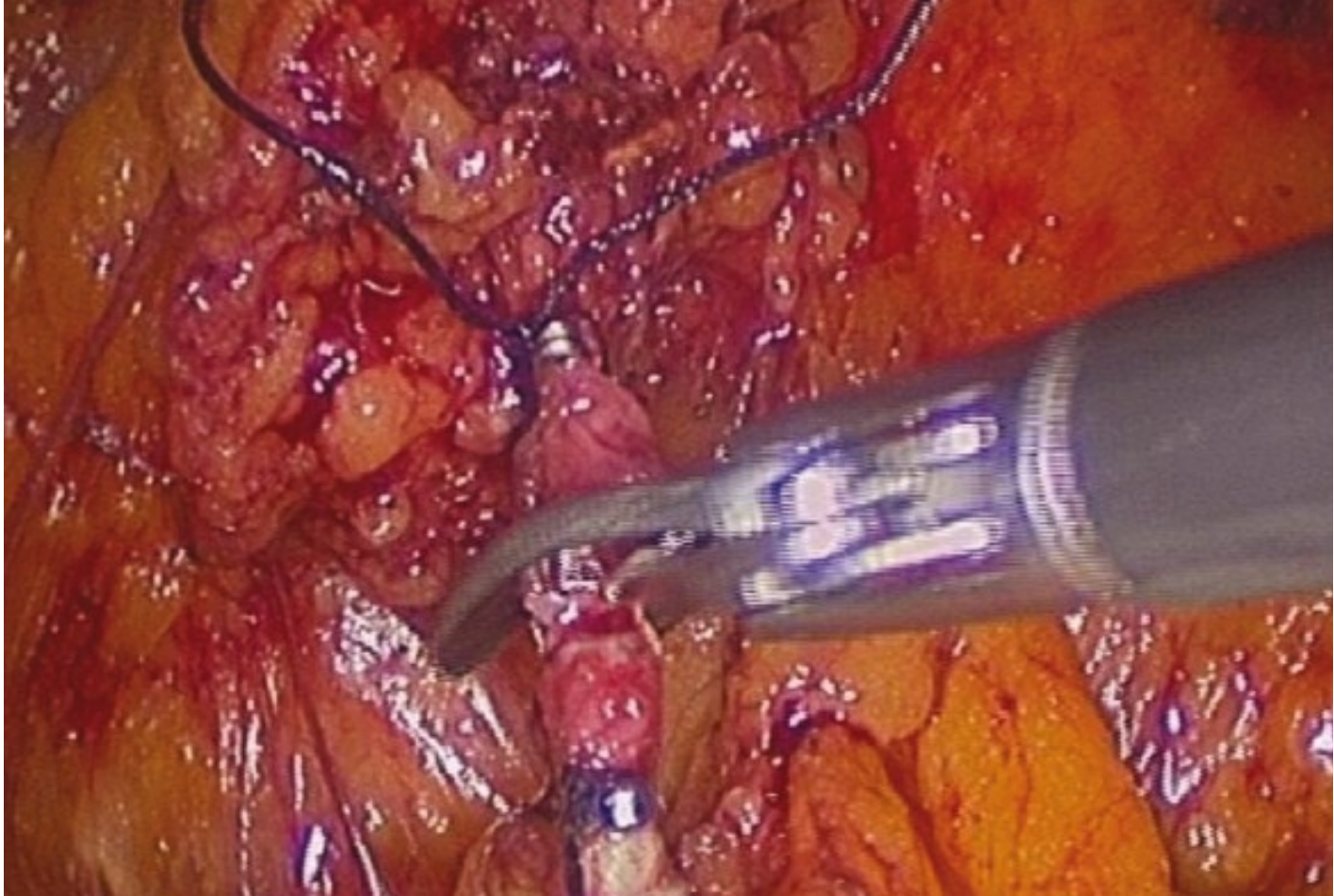


Acc 2 - Vidéo





Acc 2 - Vidéo



## Etape 3

Approche médiale → latérale

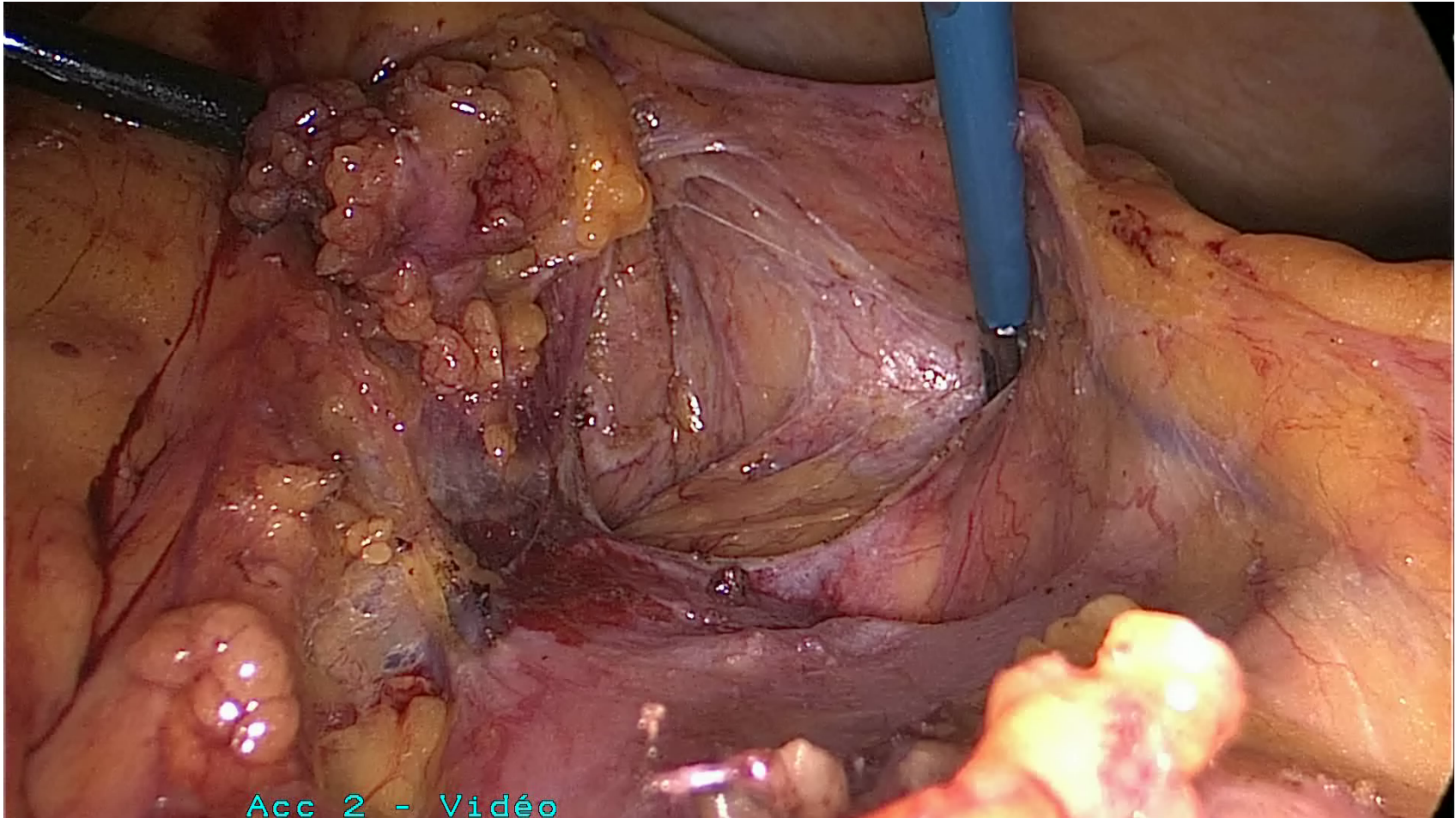
Contrôle des vaisseaux iléo-coliques

Incision du péritoine partie inf. du duodénum

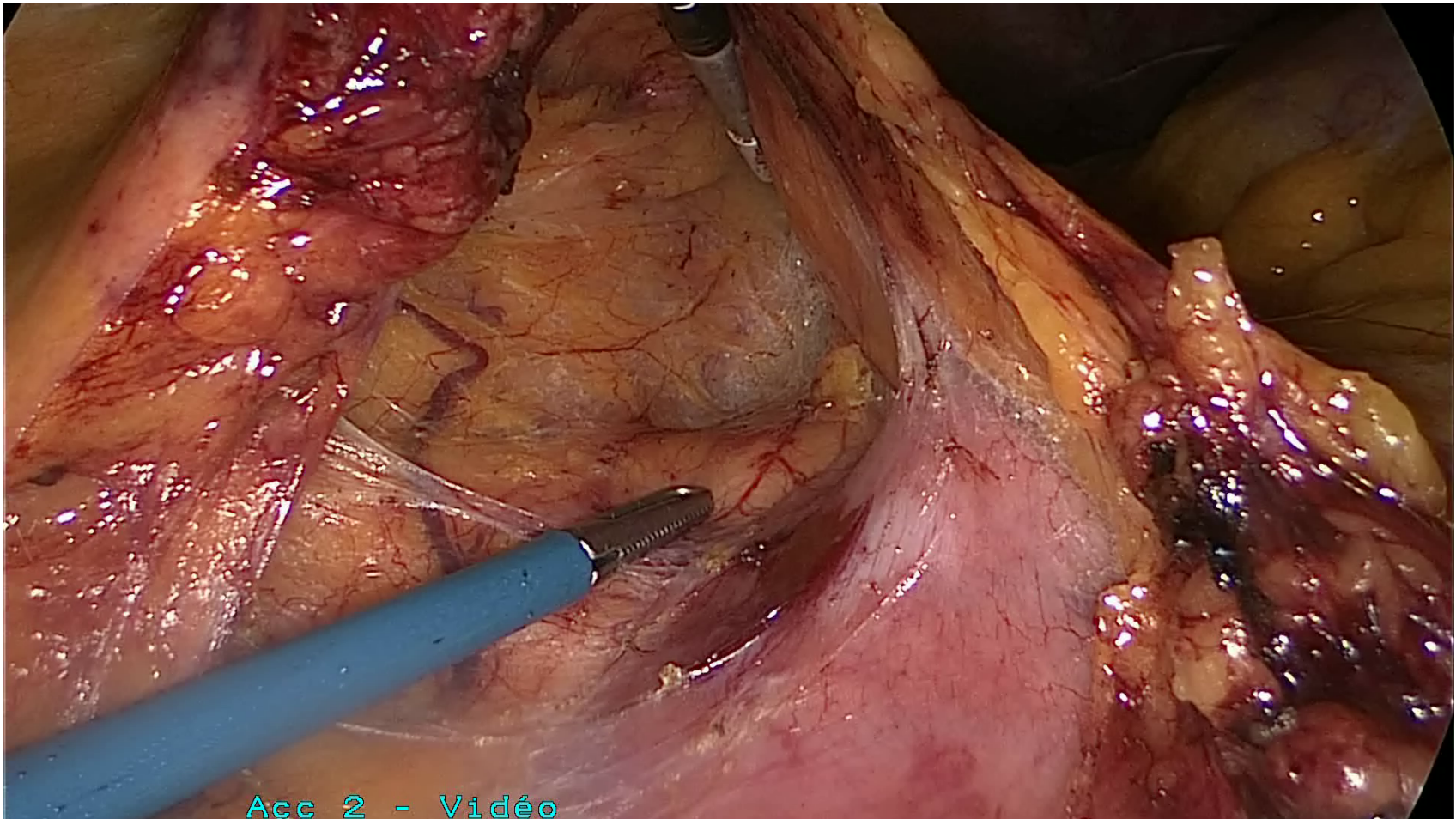
Dissection des vaisseaux iléo-coliques à l'origine

Dissection du méso

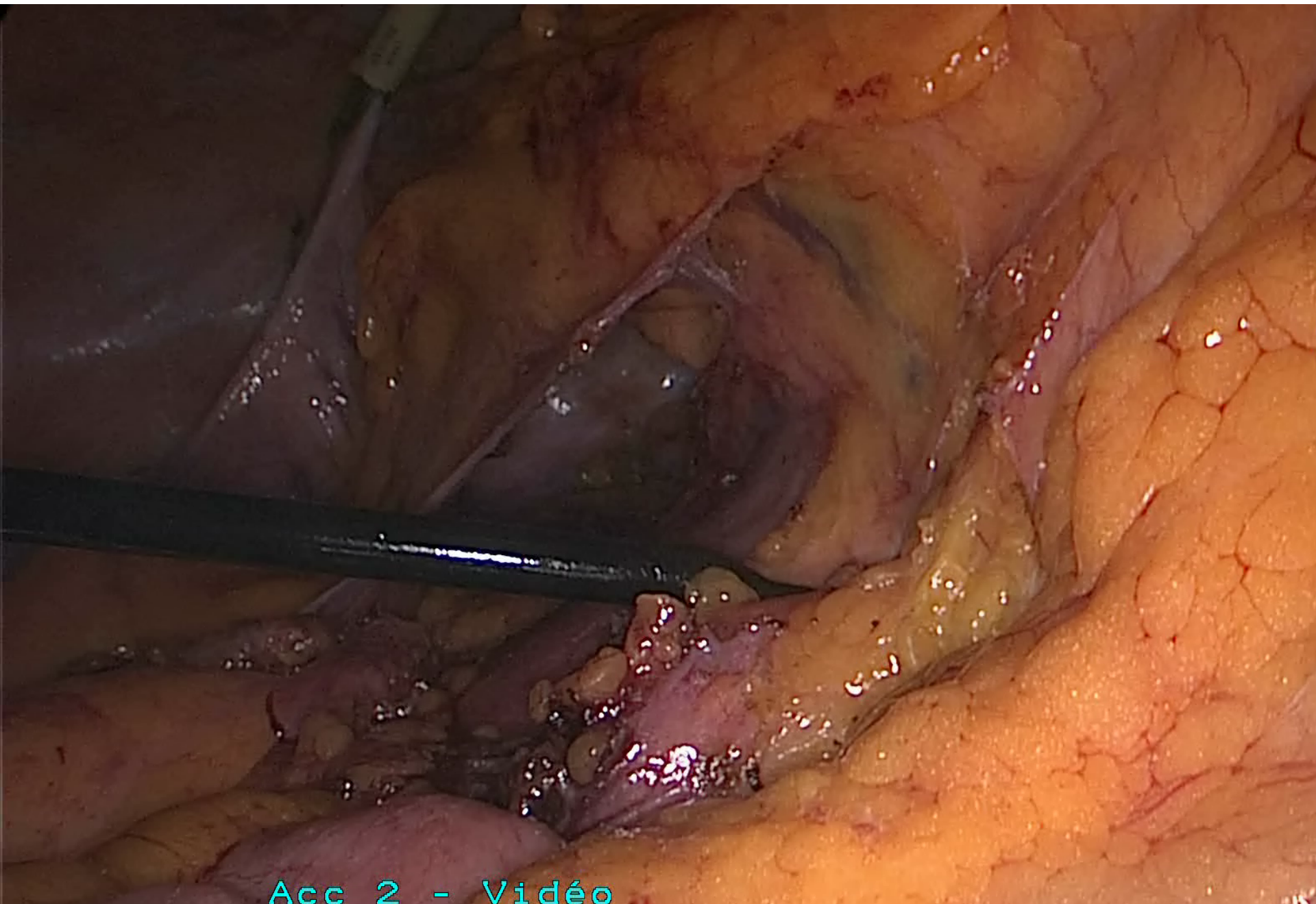




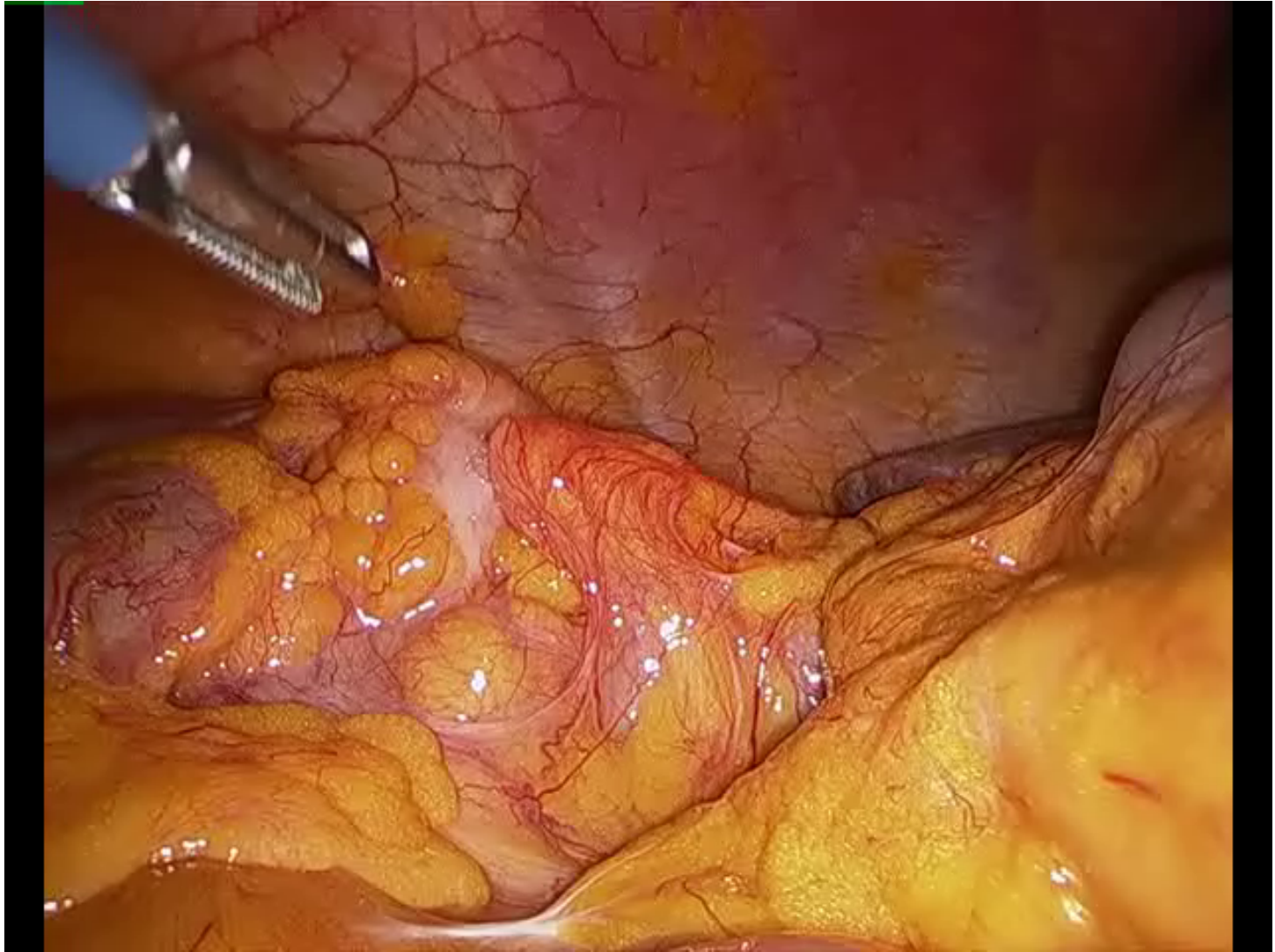
Acc 2 - Vidéo







Acc 2 - Vidéo



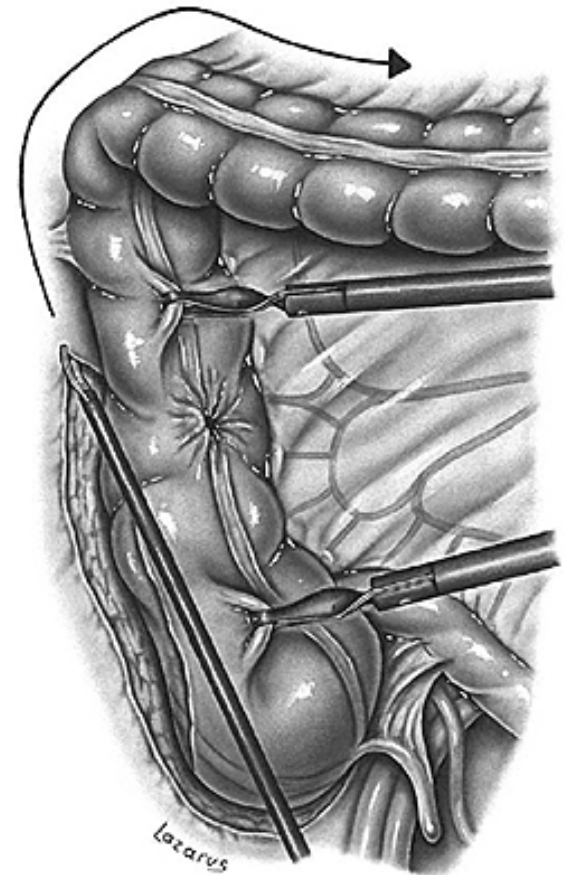


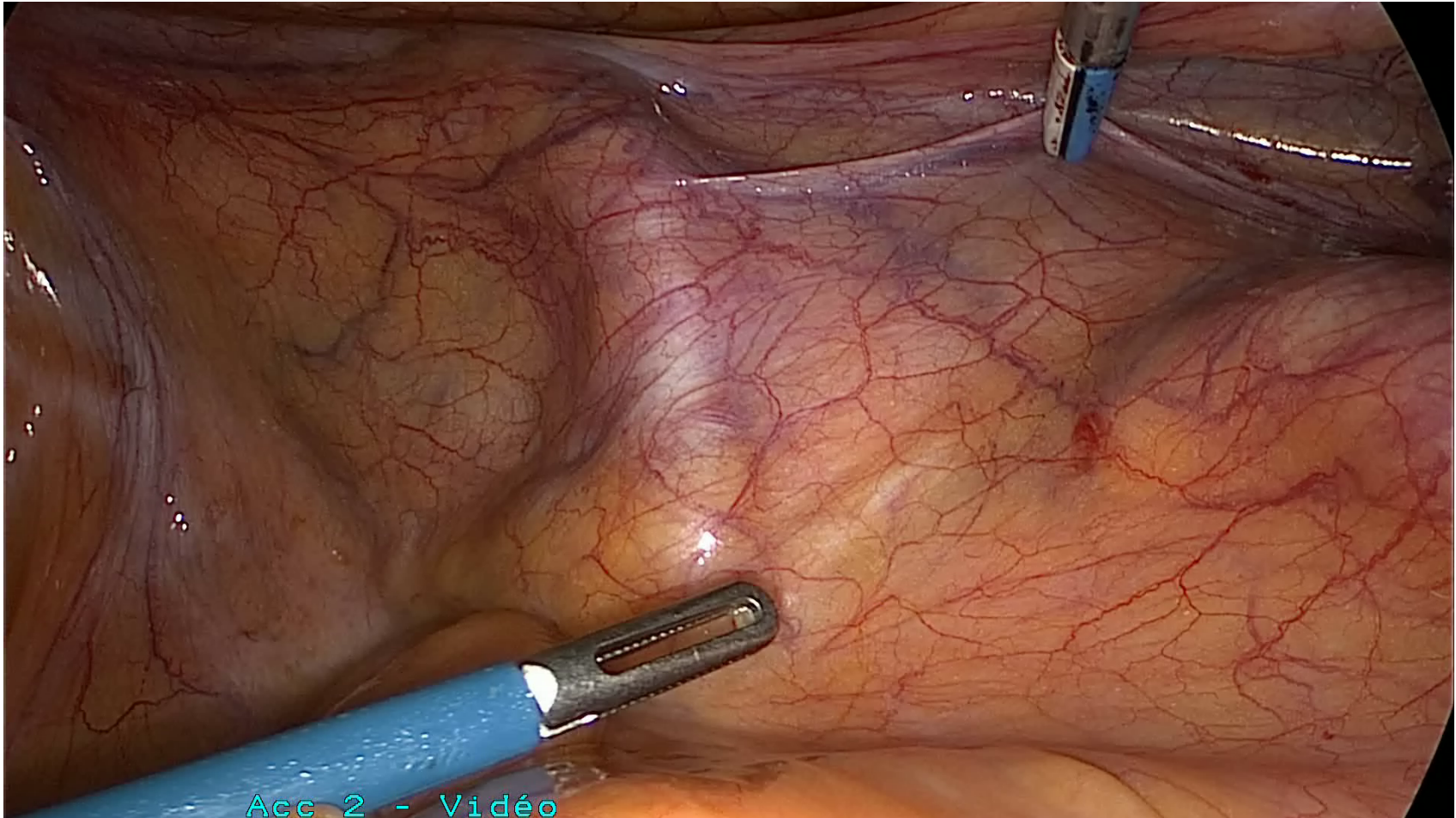
# Etape 4

Dissection latérale (fascia de Toldt)

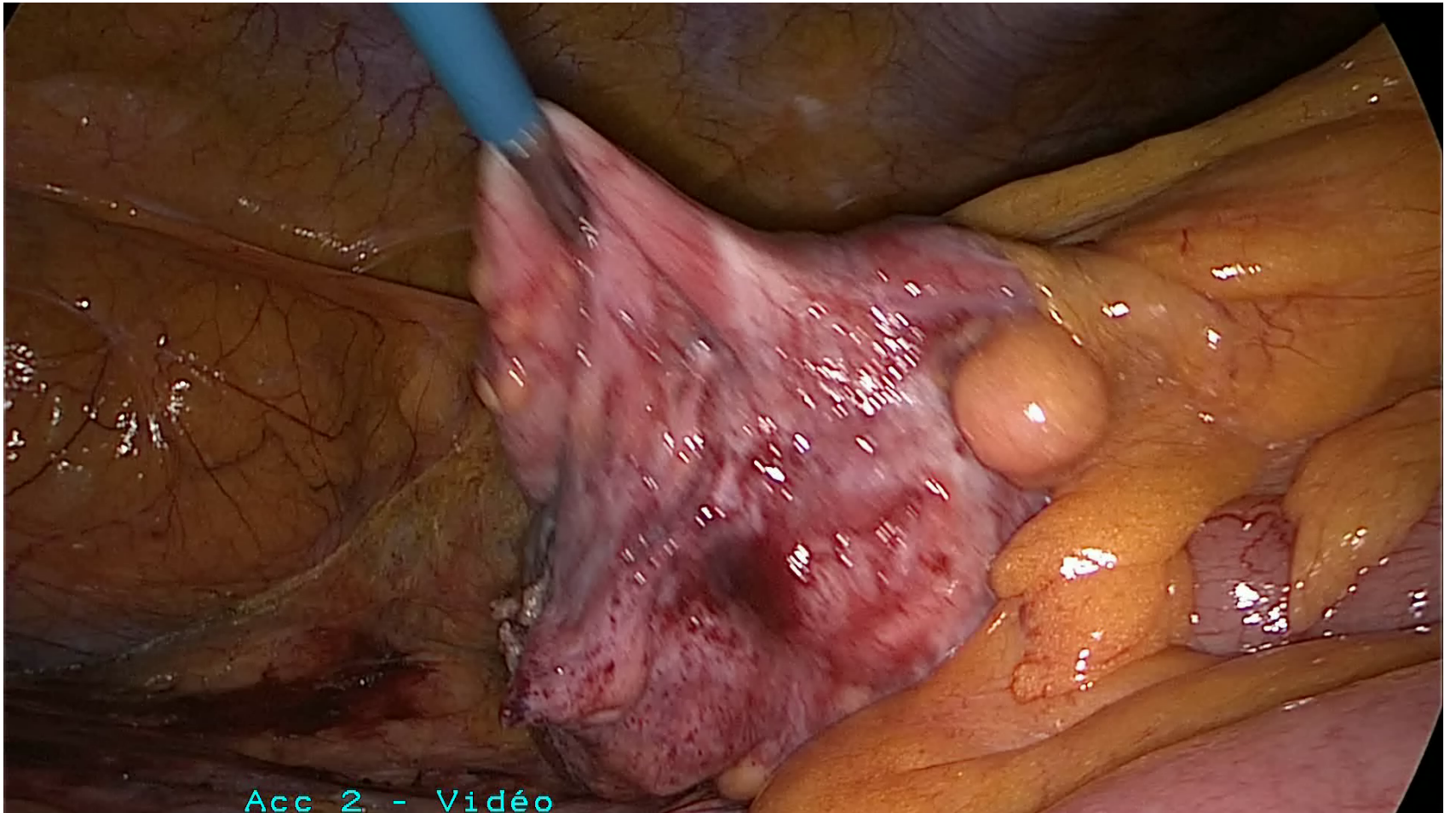
Respect des vx lombo-ovariens

Respect de l'uretère



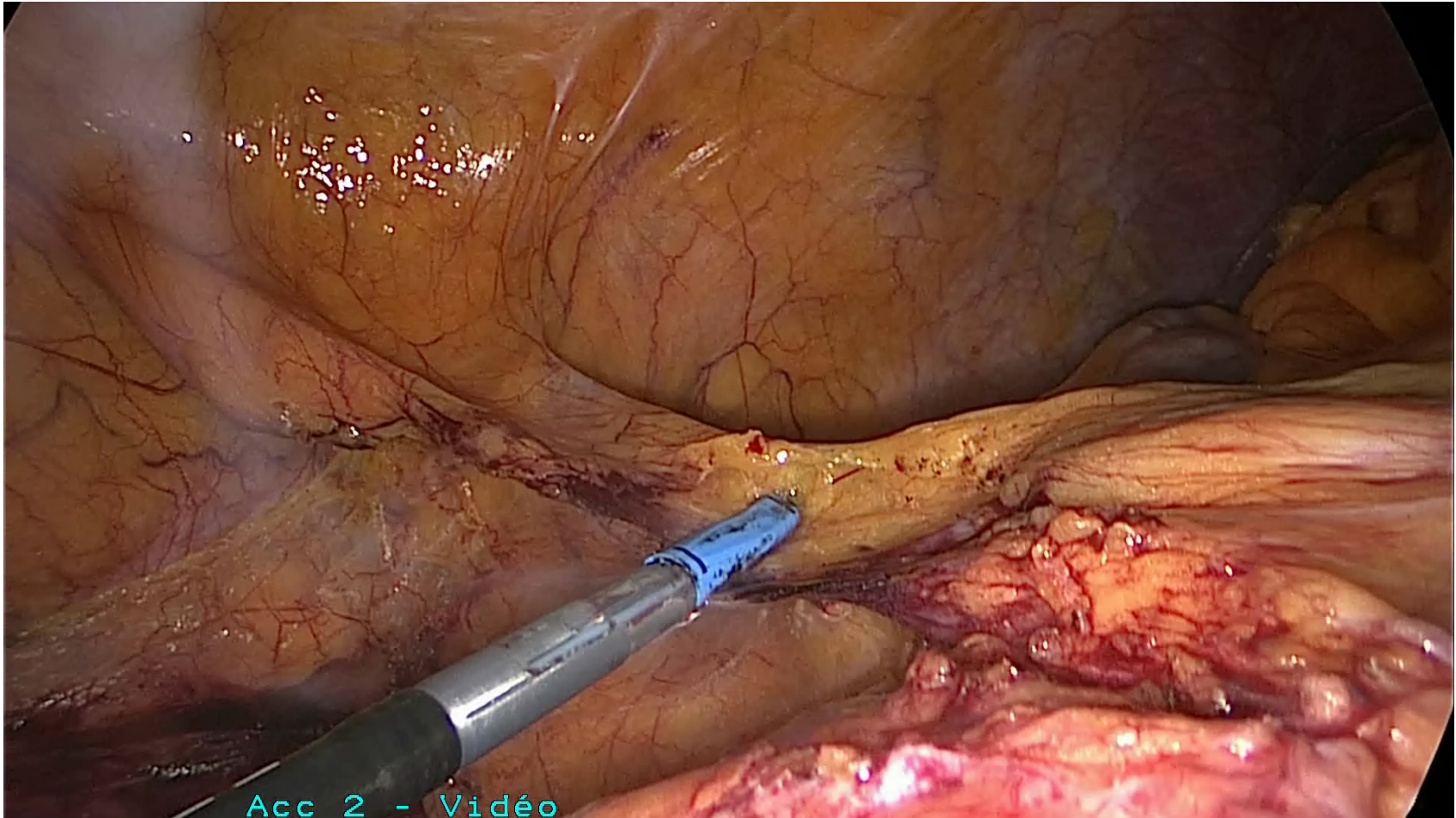


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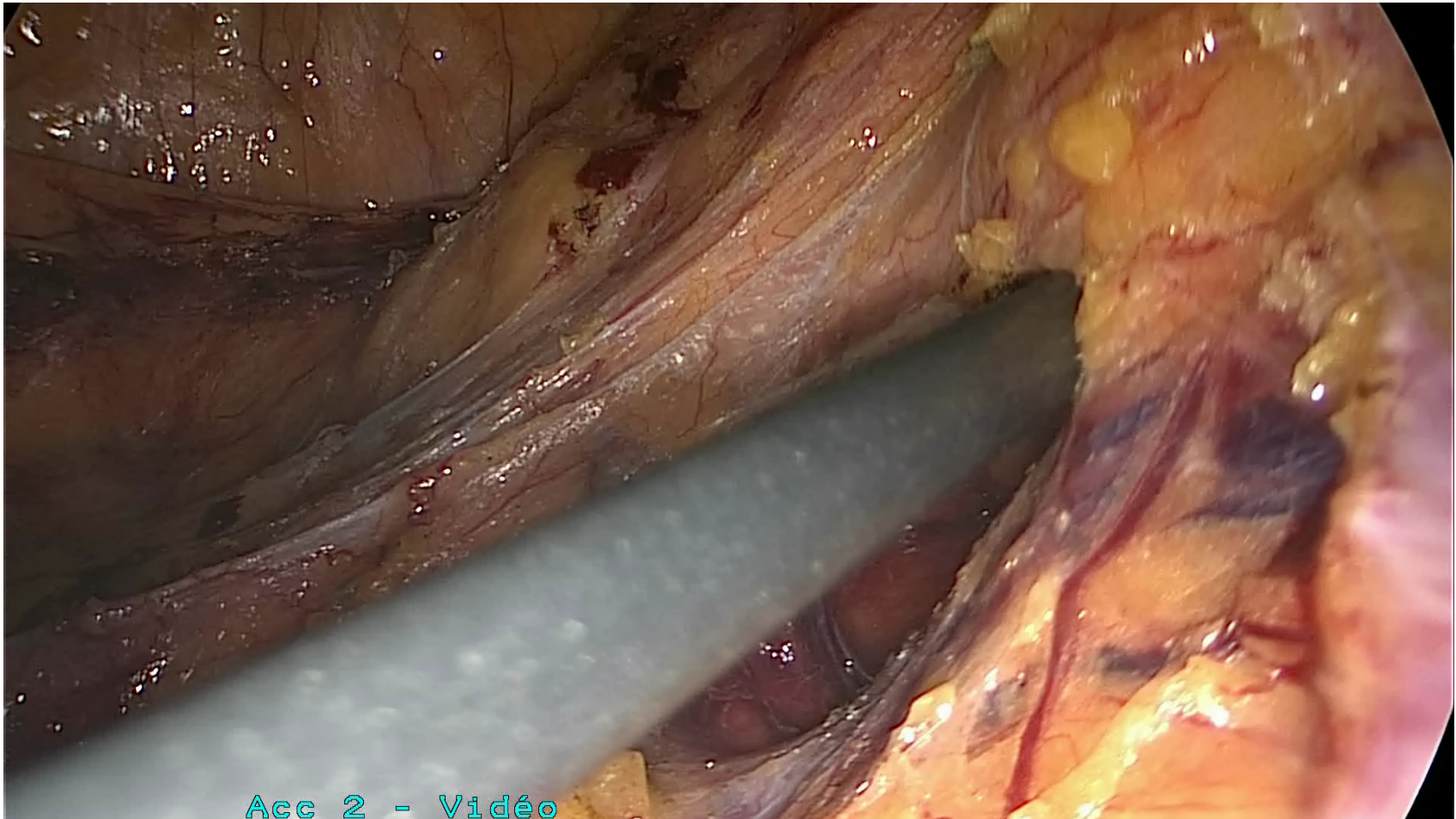


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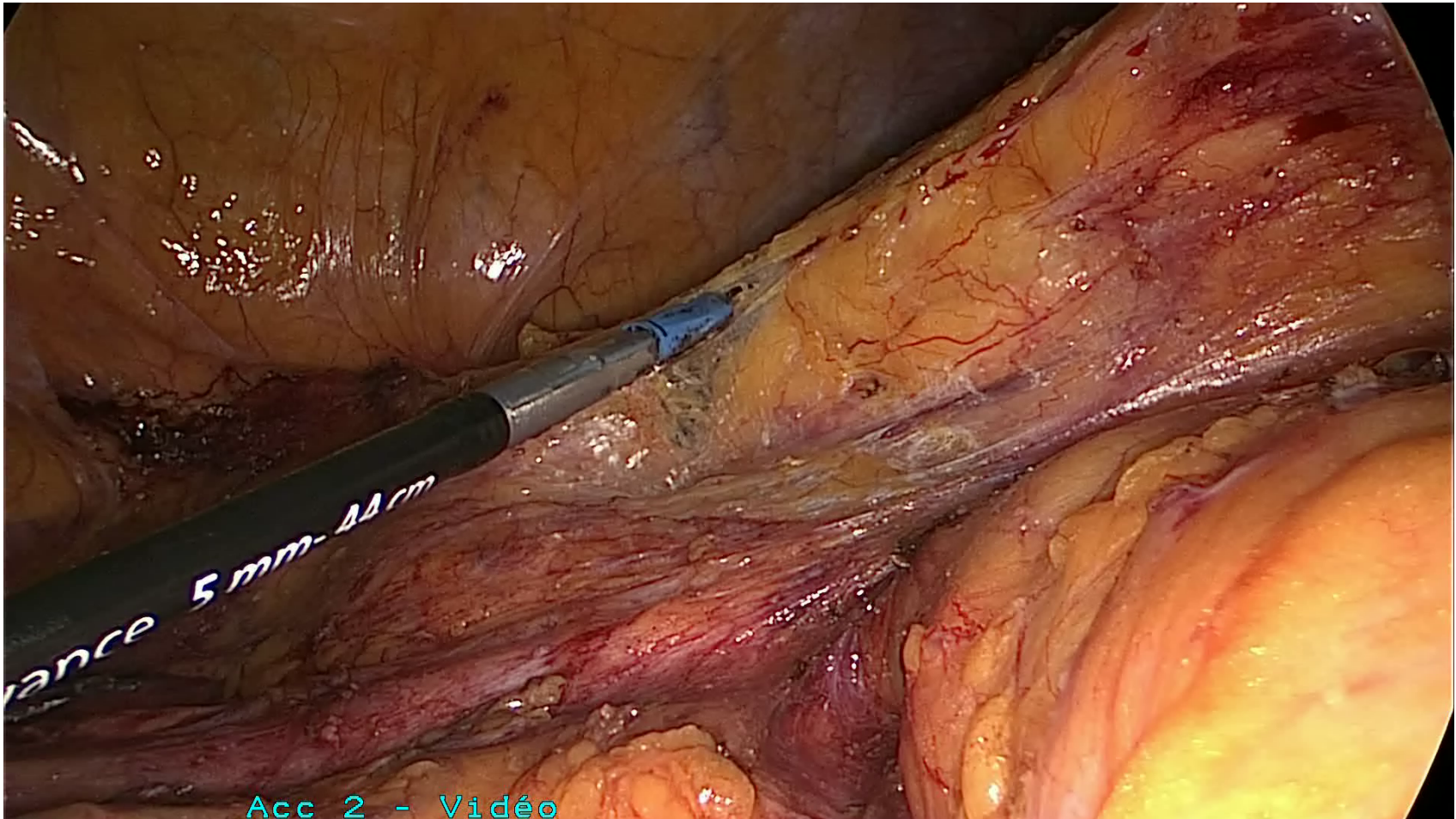


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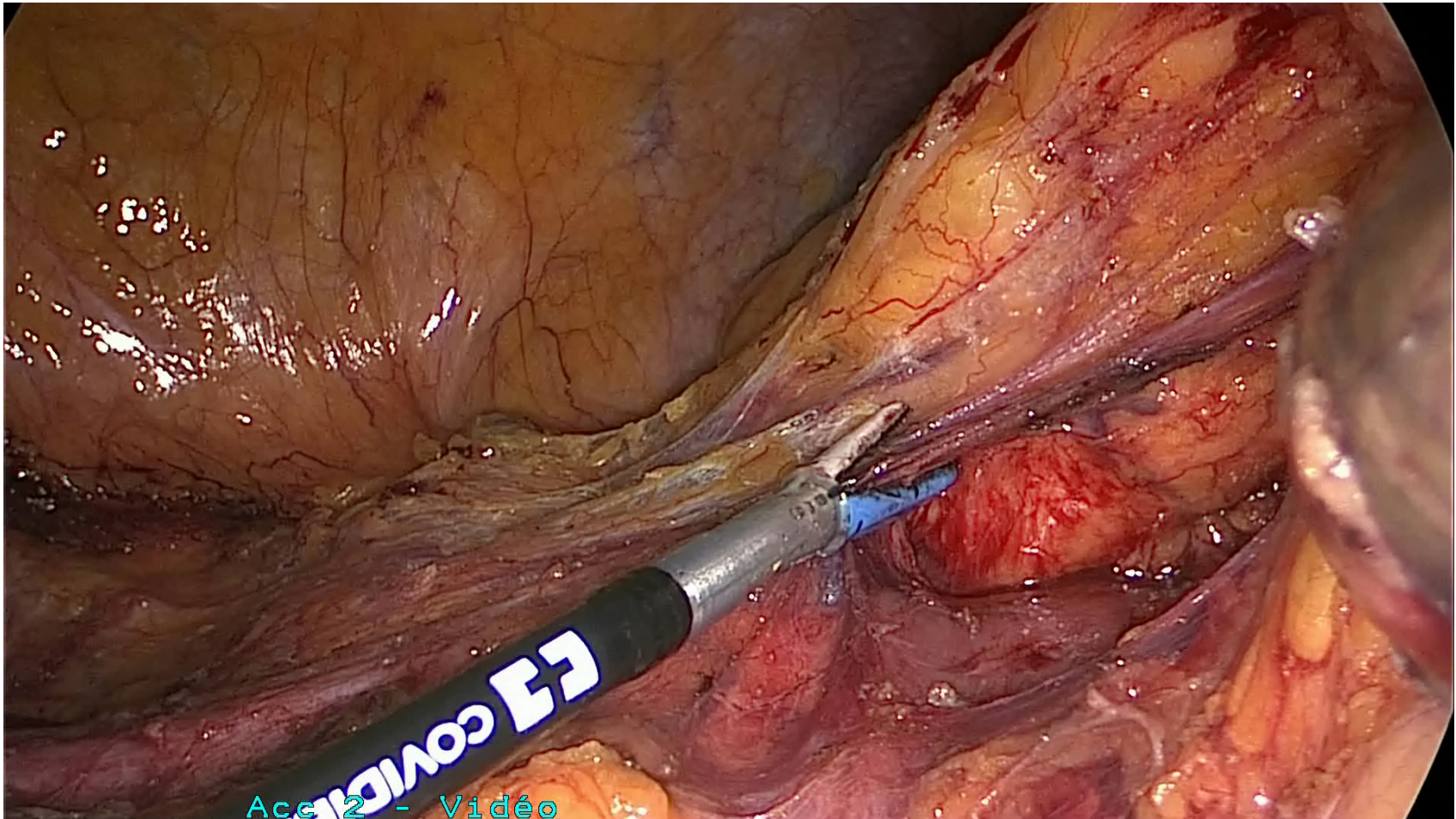


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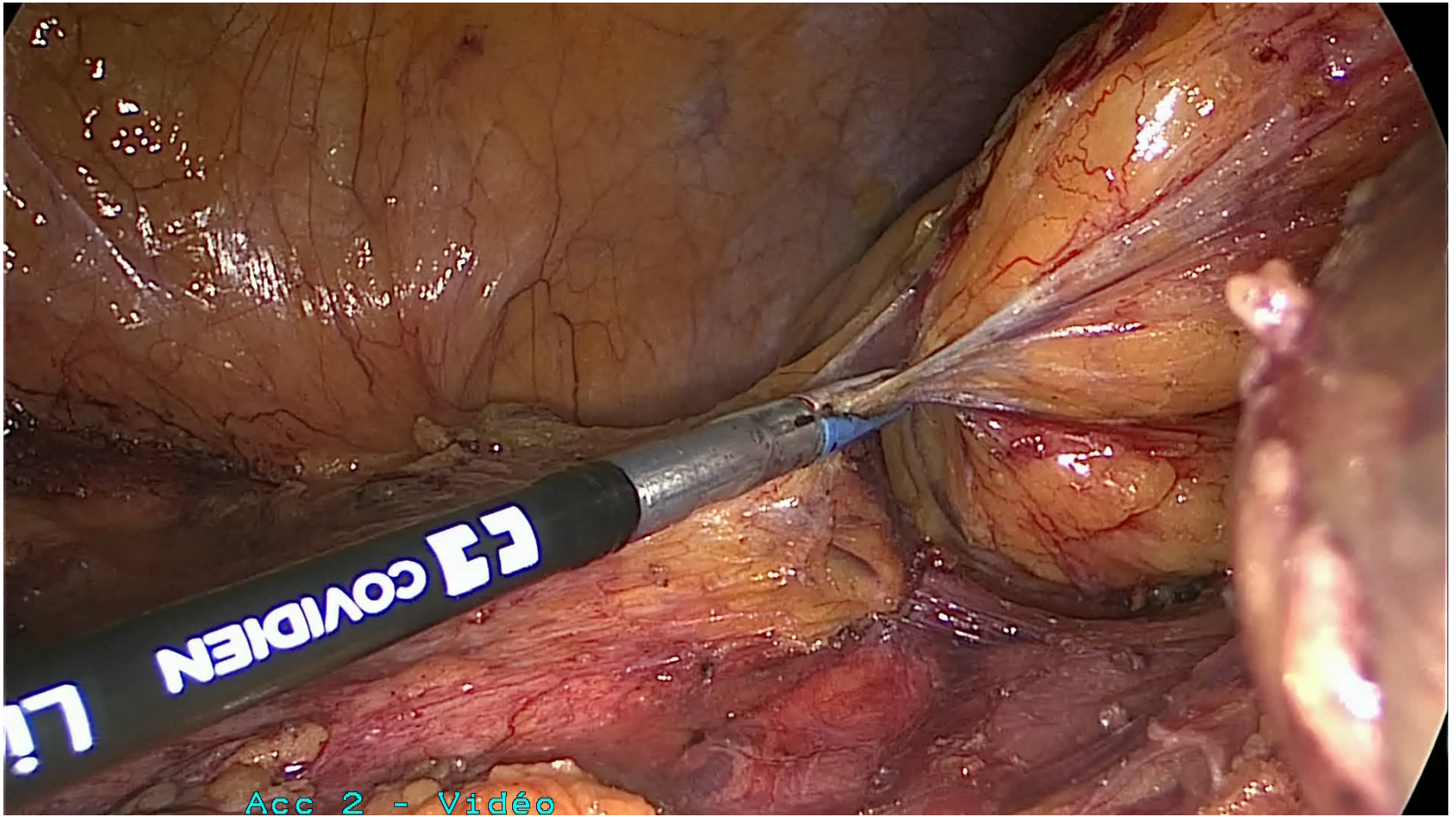


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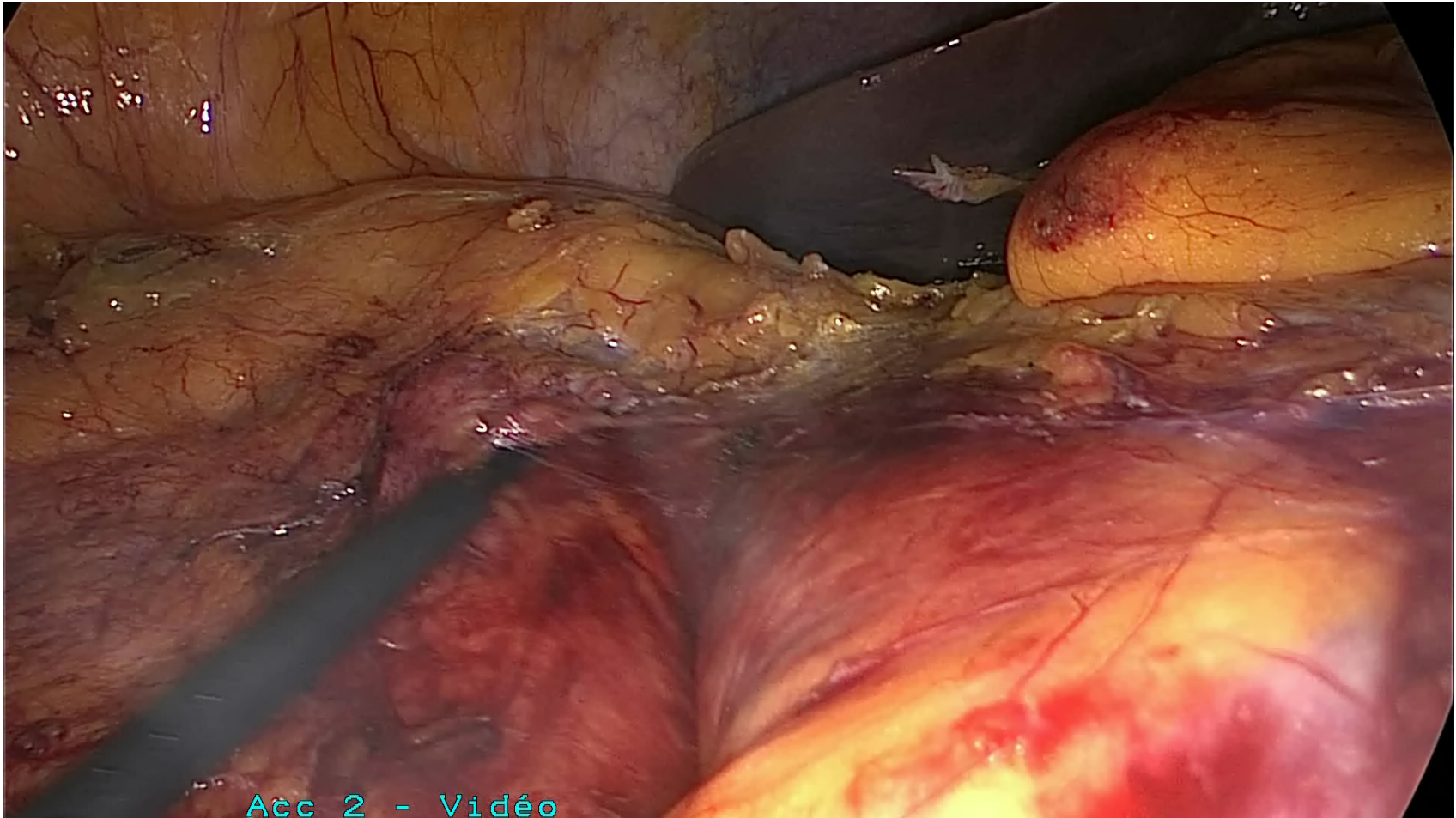


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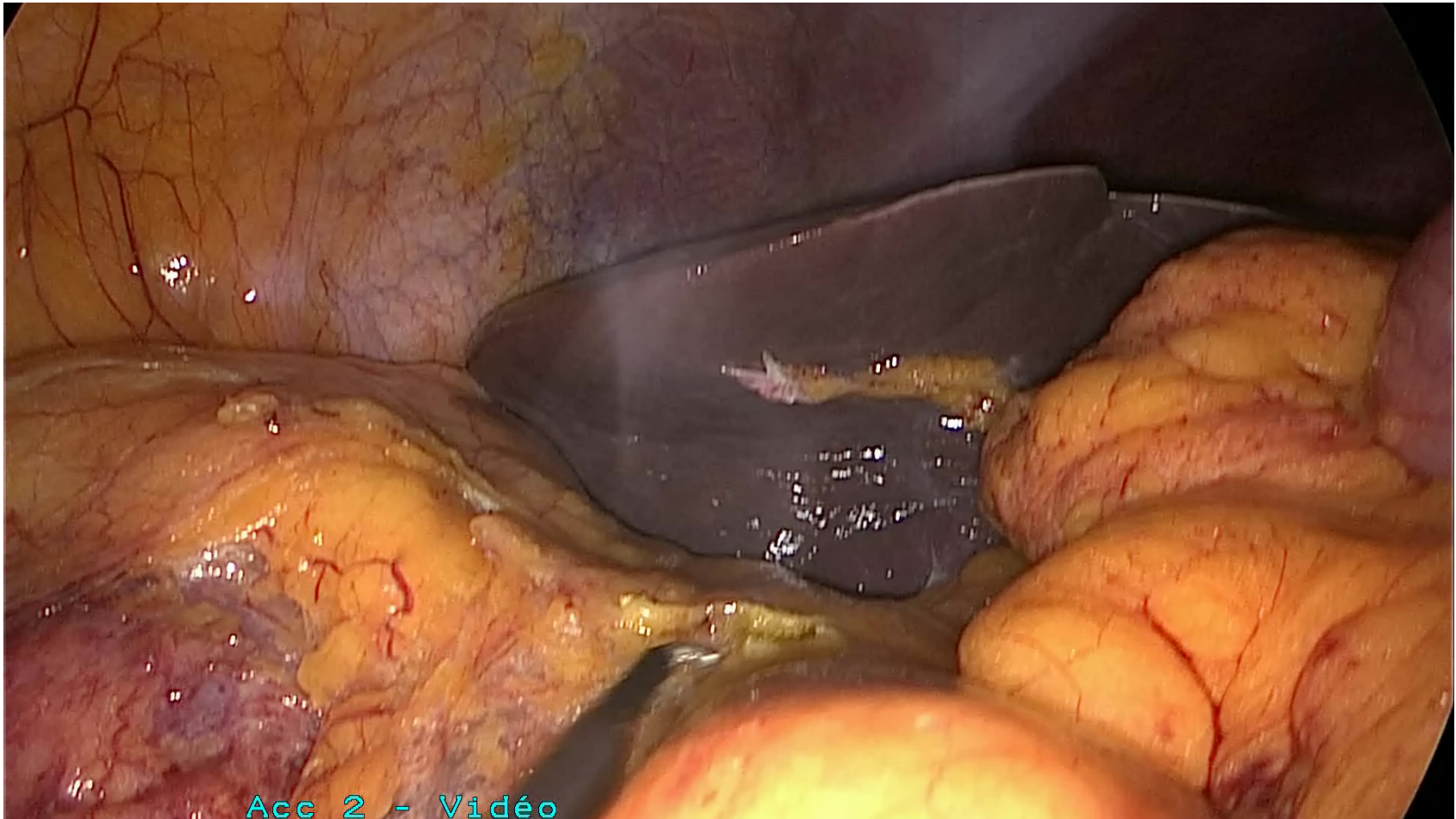


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Acc 2 - Vidéo

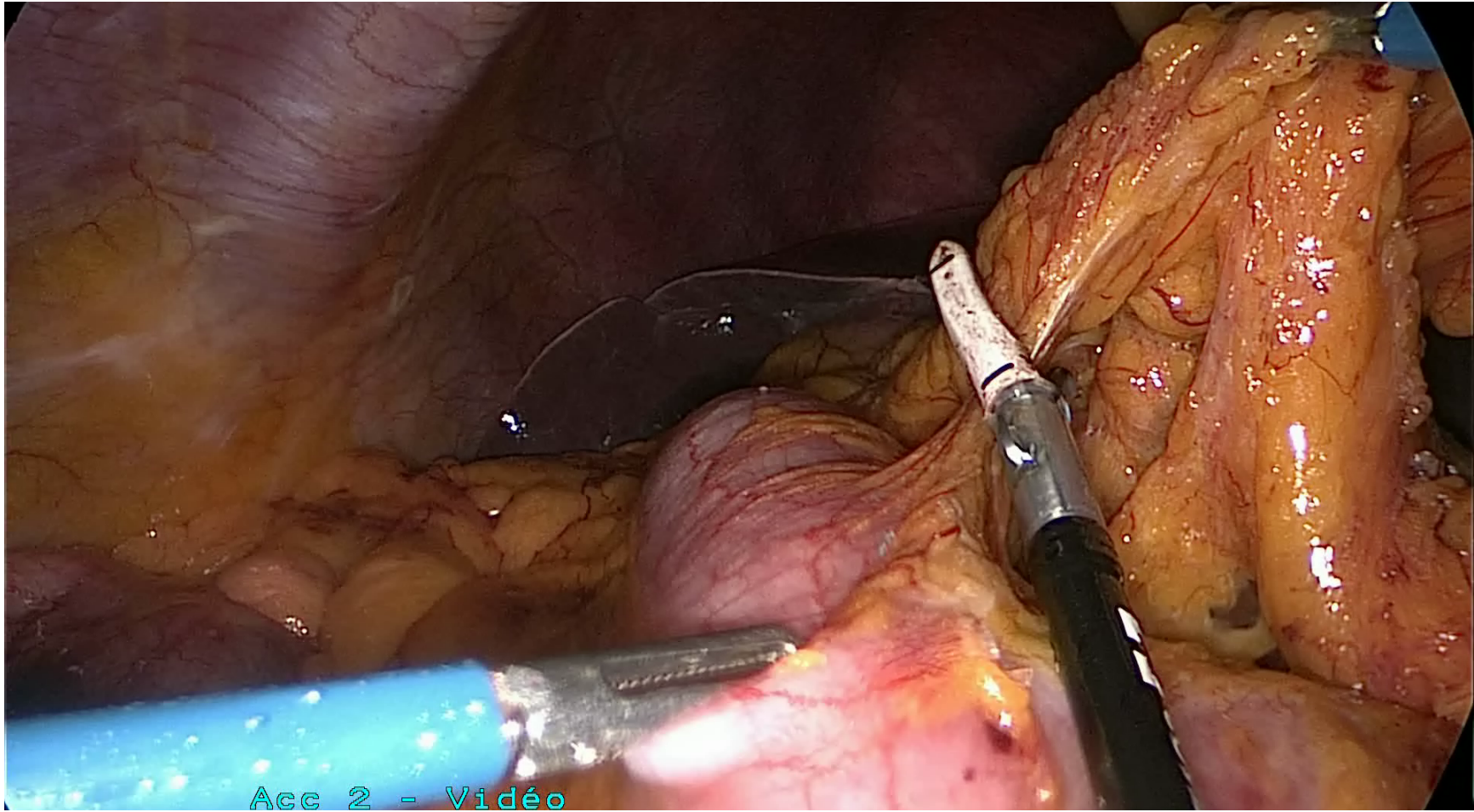




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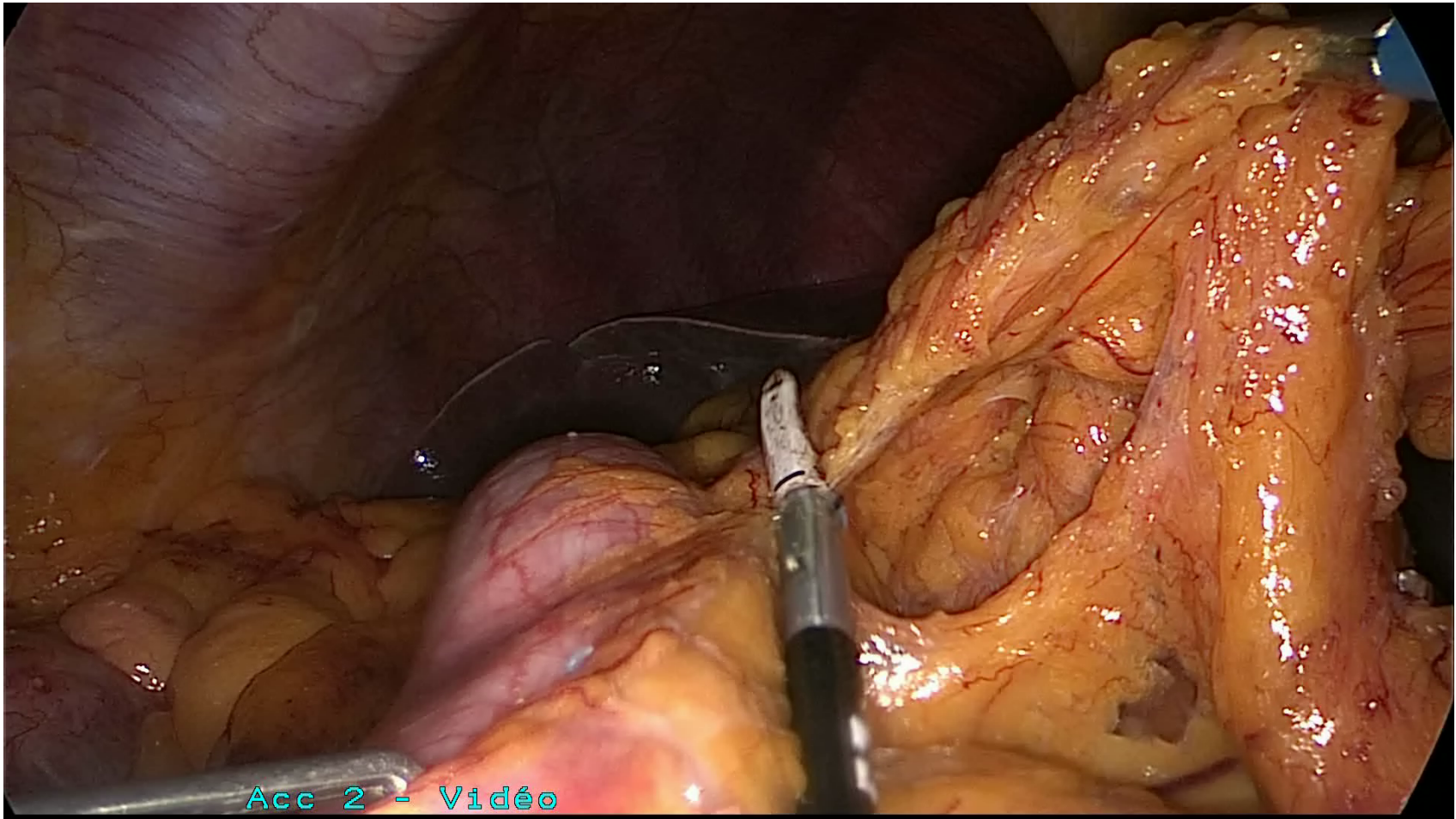
# Etape 5

Section du ligament colo-épiploïque transverse



Acc 2 - Vidéo



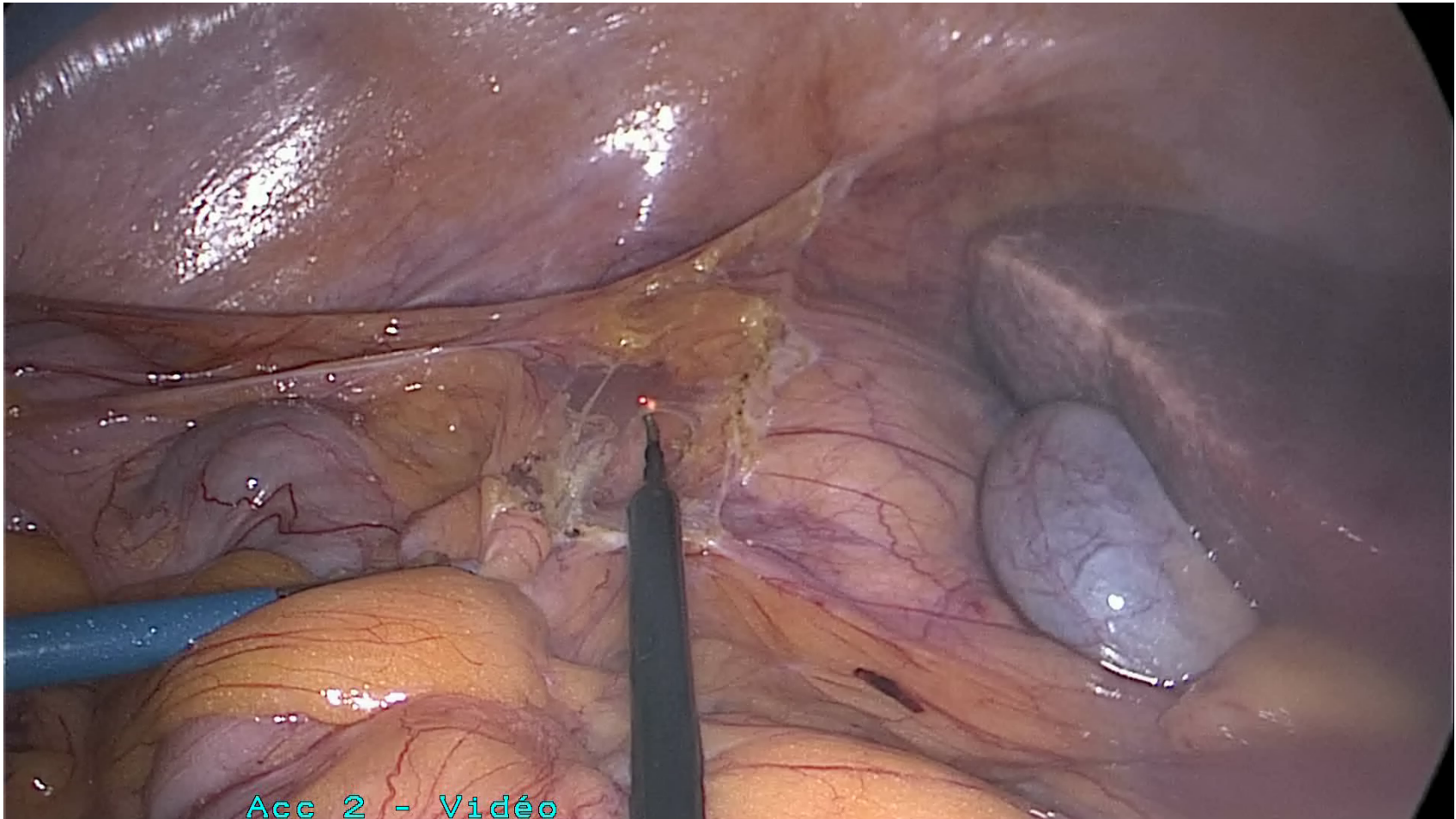


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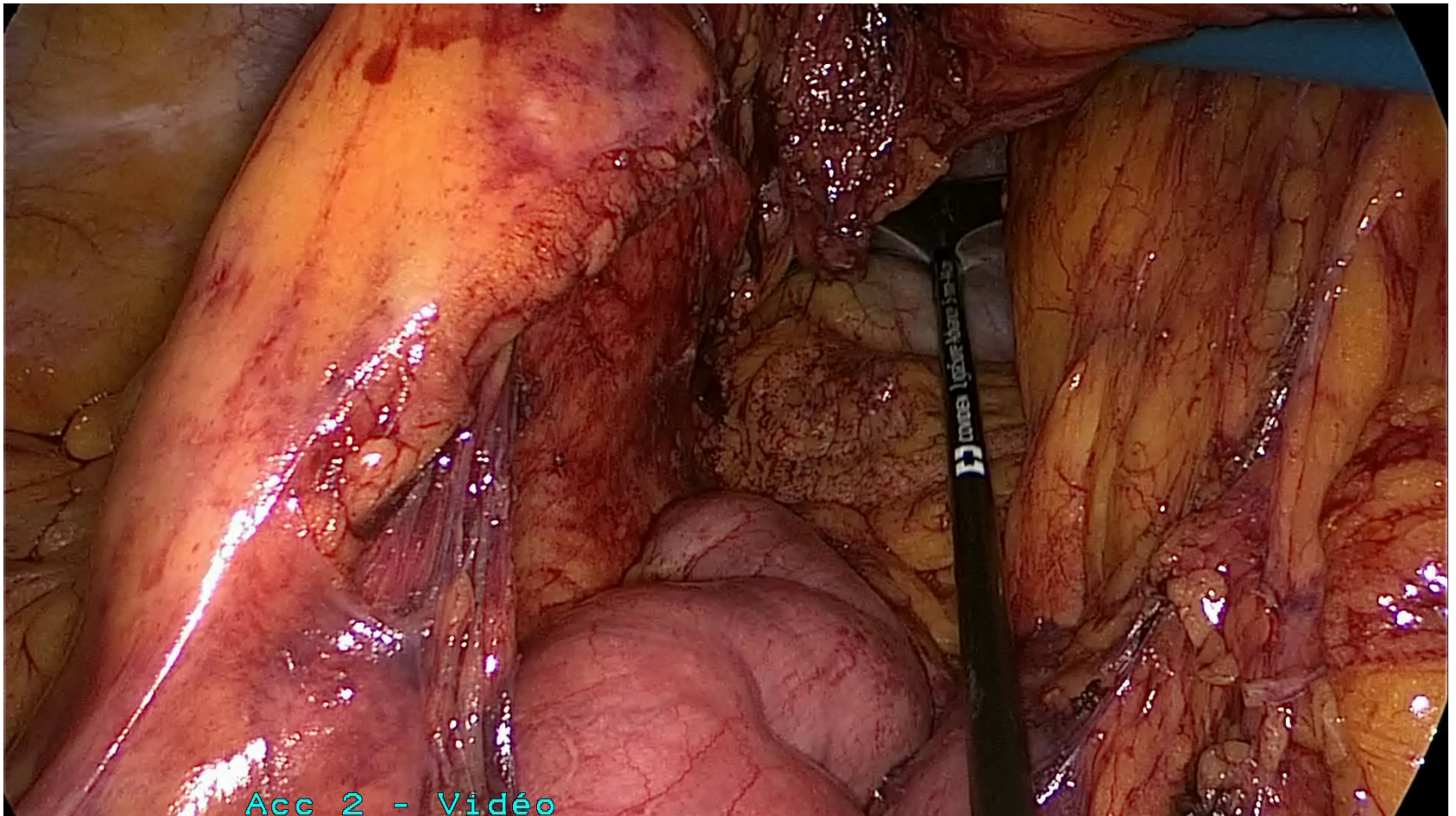
# Etape 5

Section du ligament colo-épiploïque transverse  
Libération de l'angle hépatique



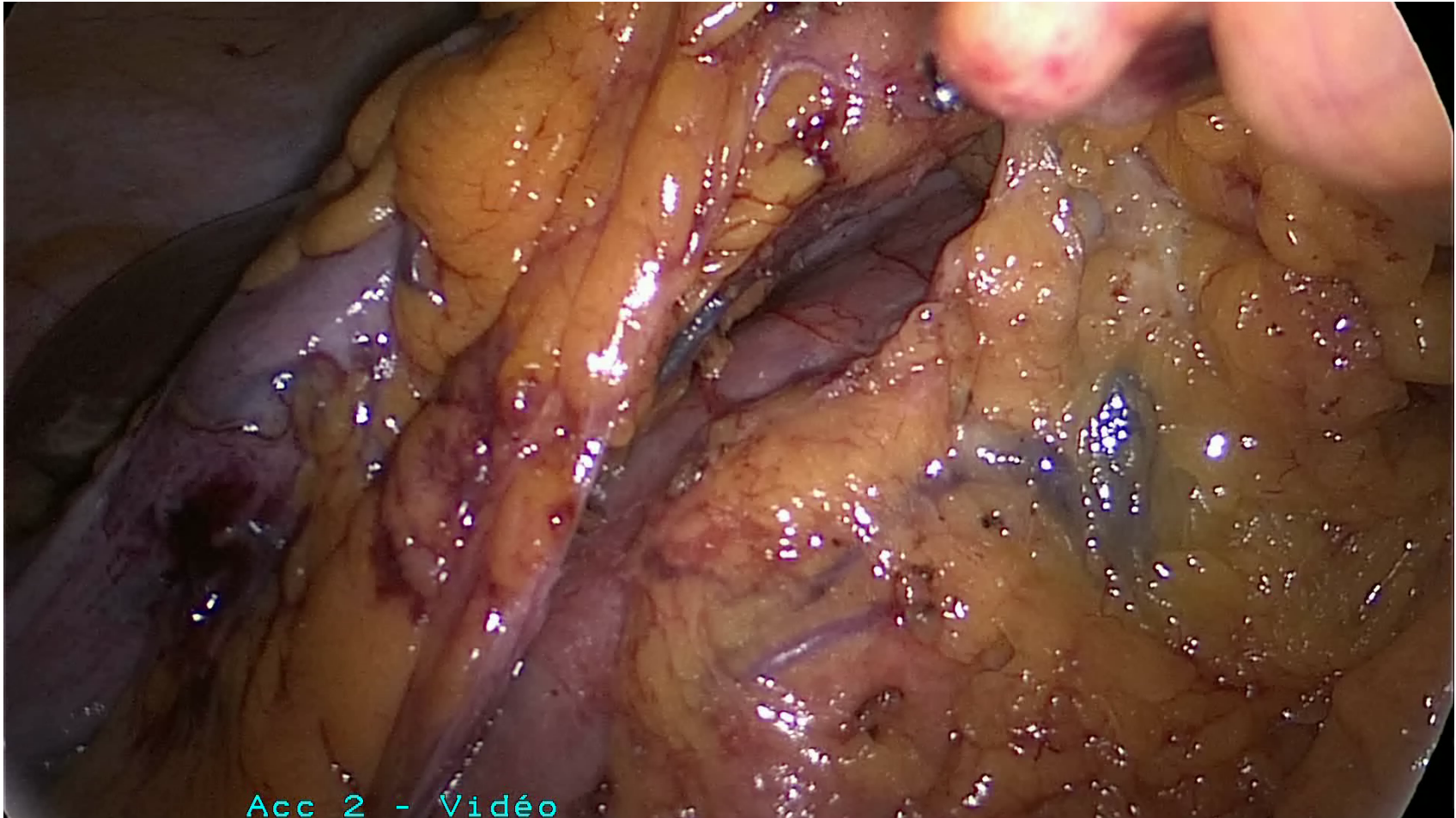


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Acc 2 - Vidéo

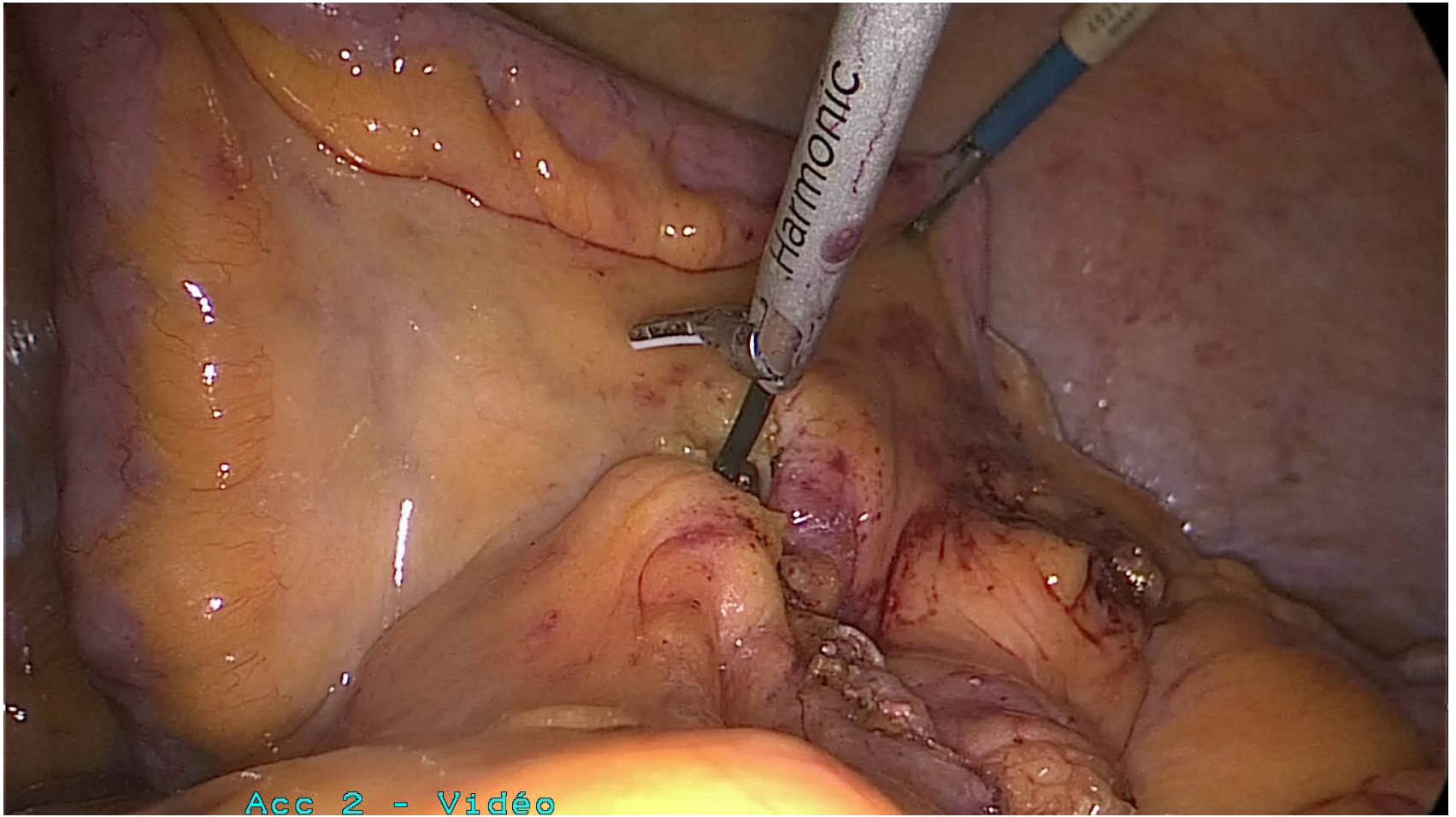




Acc 2 - Vidéo

# Etape 6

Section du mésentère de l'iléon terminal

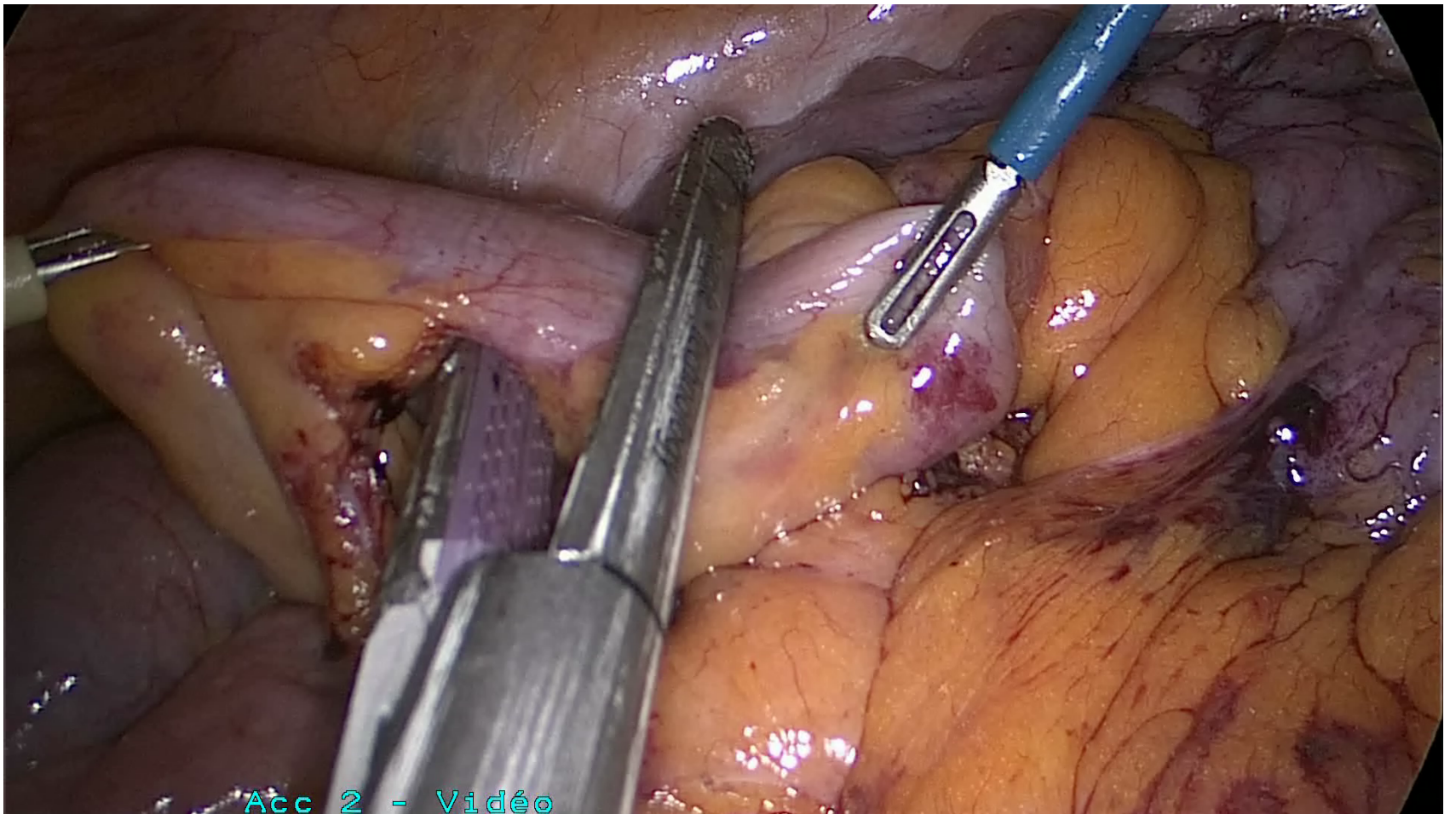


Acc 2 - Vidéo

# Etape 6

Section du mésentère de l'iléon terminal  
Section de l'iléon terminal





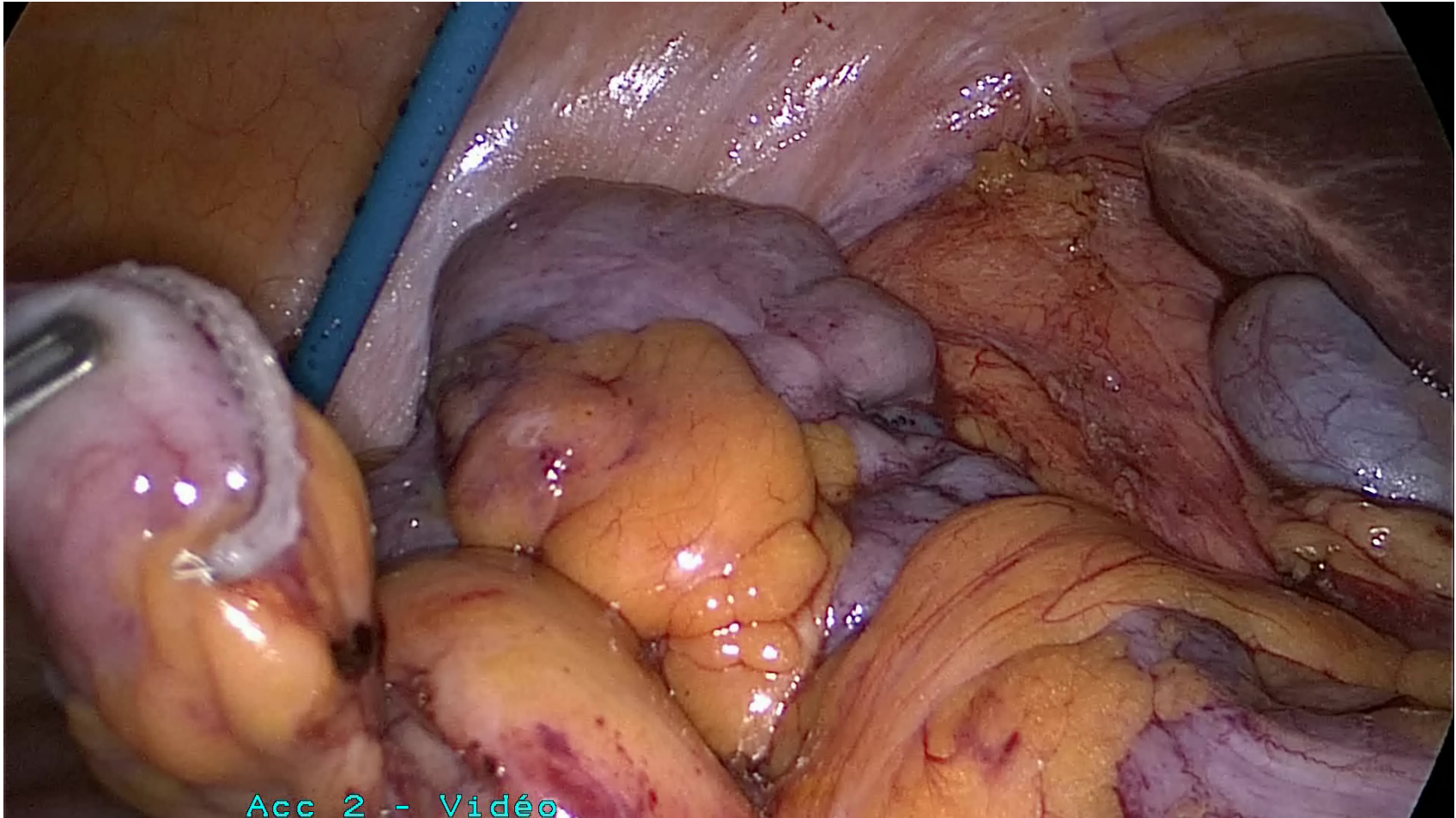
Acc 2 - Vidéo

# Etape 6

Section du méésentère de l'iléon terminal

Section de l'iléon terminal

Vérification de la libération complète



Acc 2 - Vidéo

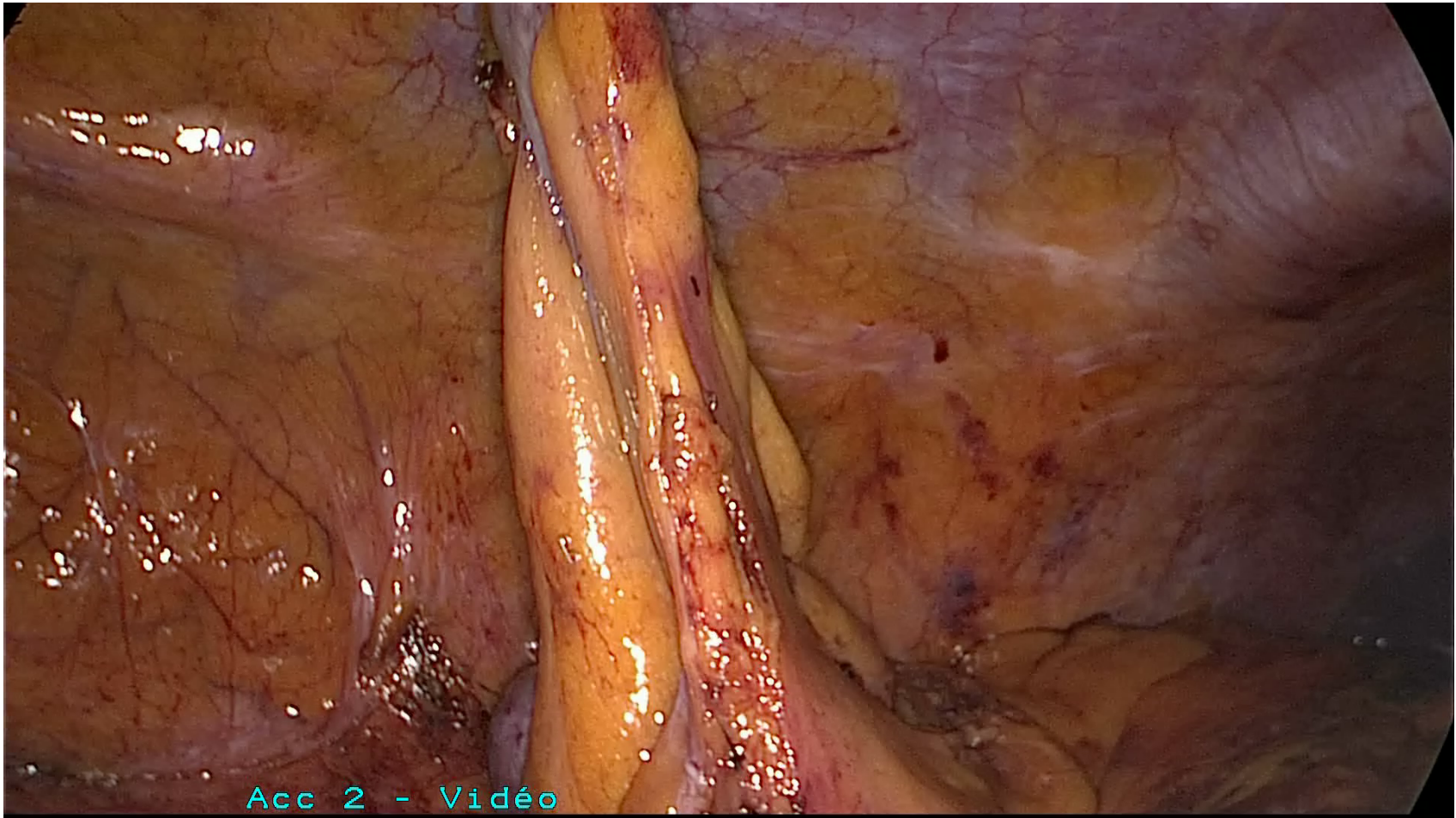
# Etape 7

## Anastomose extracorporelle

« Laparoscopic-assisted »

Extraction de la pièce opératoire





Acc 2 - Vidéo



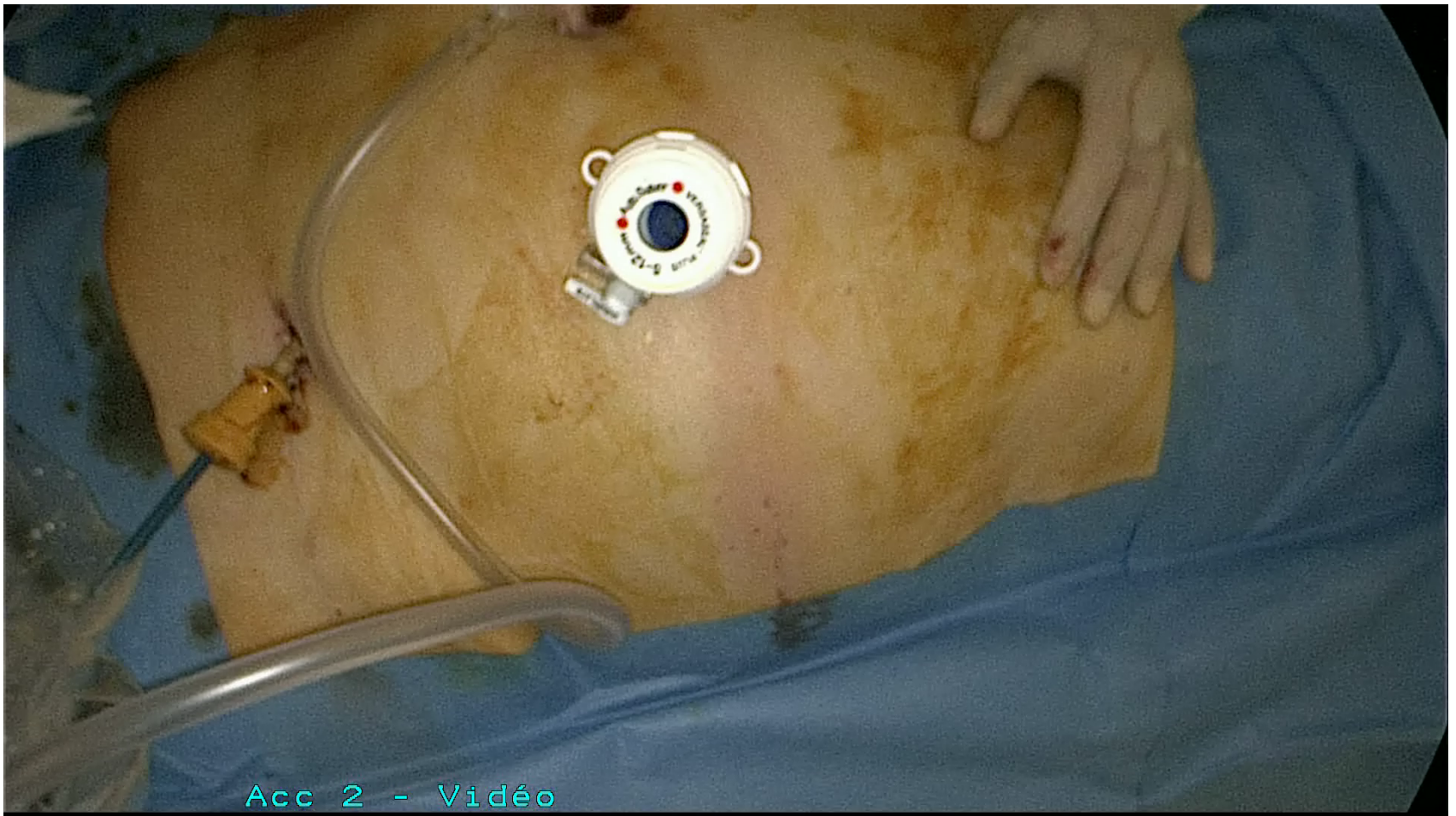
# Etape 7

Anastomose extracorporeale

« Laparoscopic-assisted »

Extraction de la pièce opératoire

Exsufflation par les trocarts



Acc 2 - Vidéo

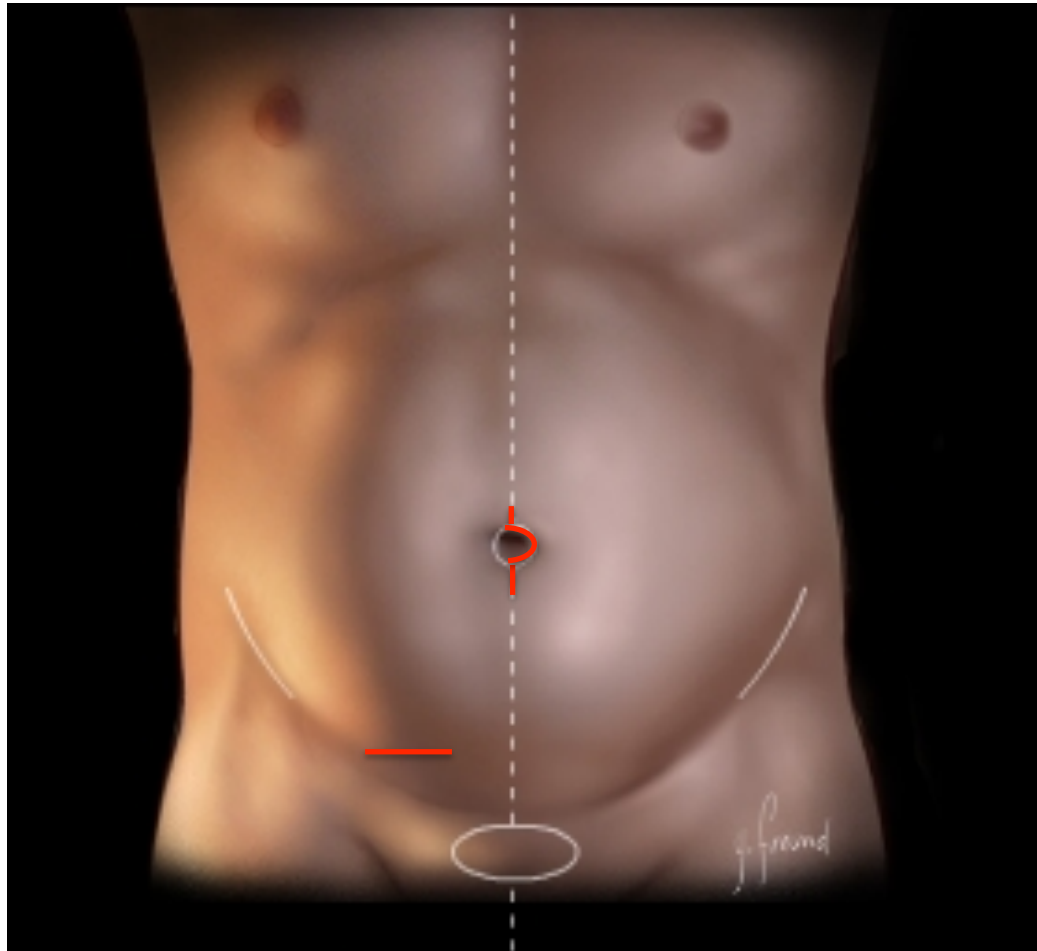
# Etape 7

Anastomose extracorporeale

« Laparoscopic-assisted »

Extraction de la pièce opératoire

Incision ombilicale (ou sus-pubienne)





# Etape 7

Anastomose extracorporeale

« Laparoscopic-assisted »

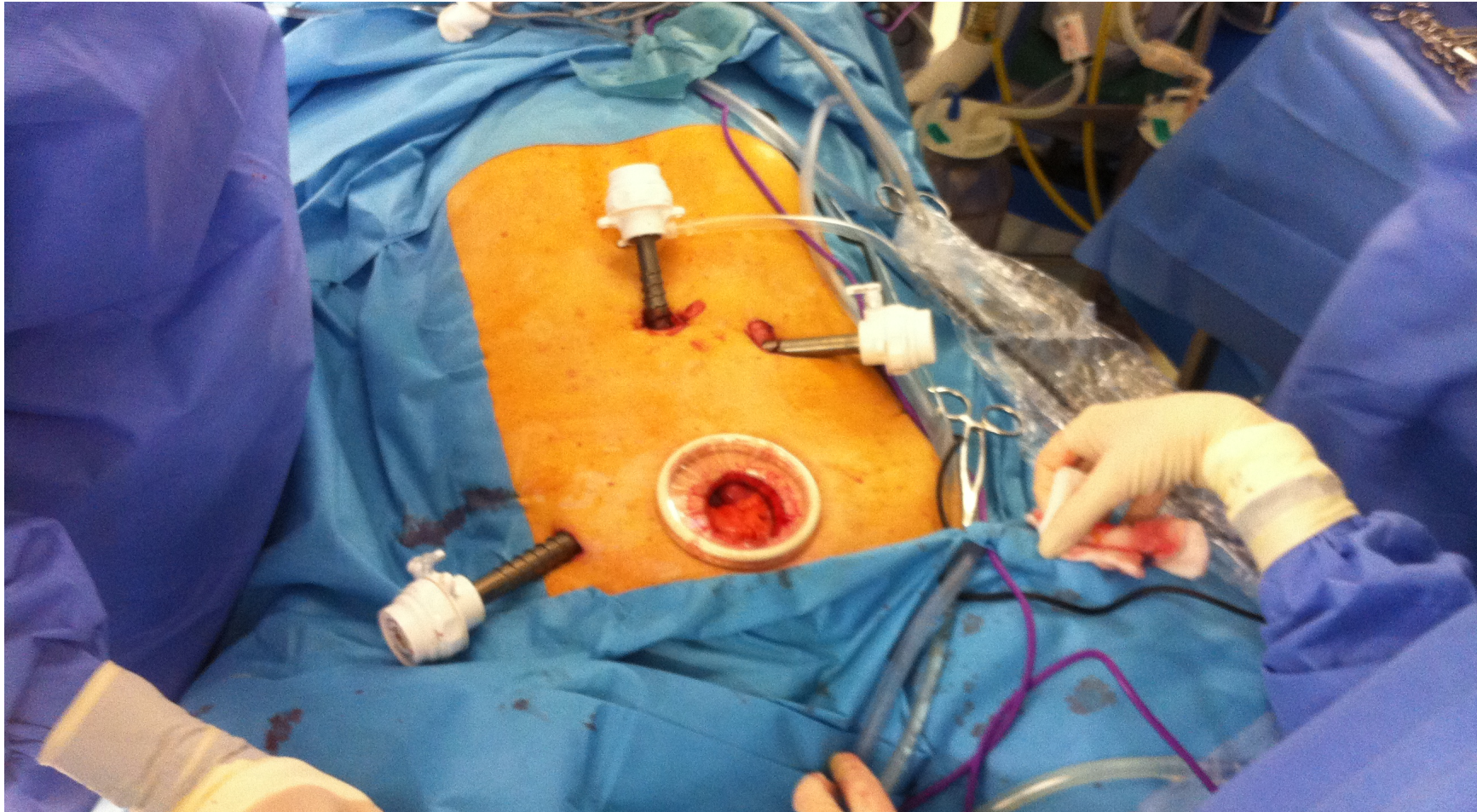
Extraction de la pièce opératoire

Incision ombilicale (ou sus-pubienne)

Protecteur de paroi







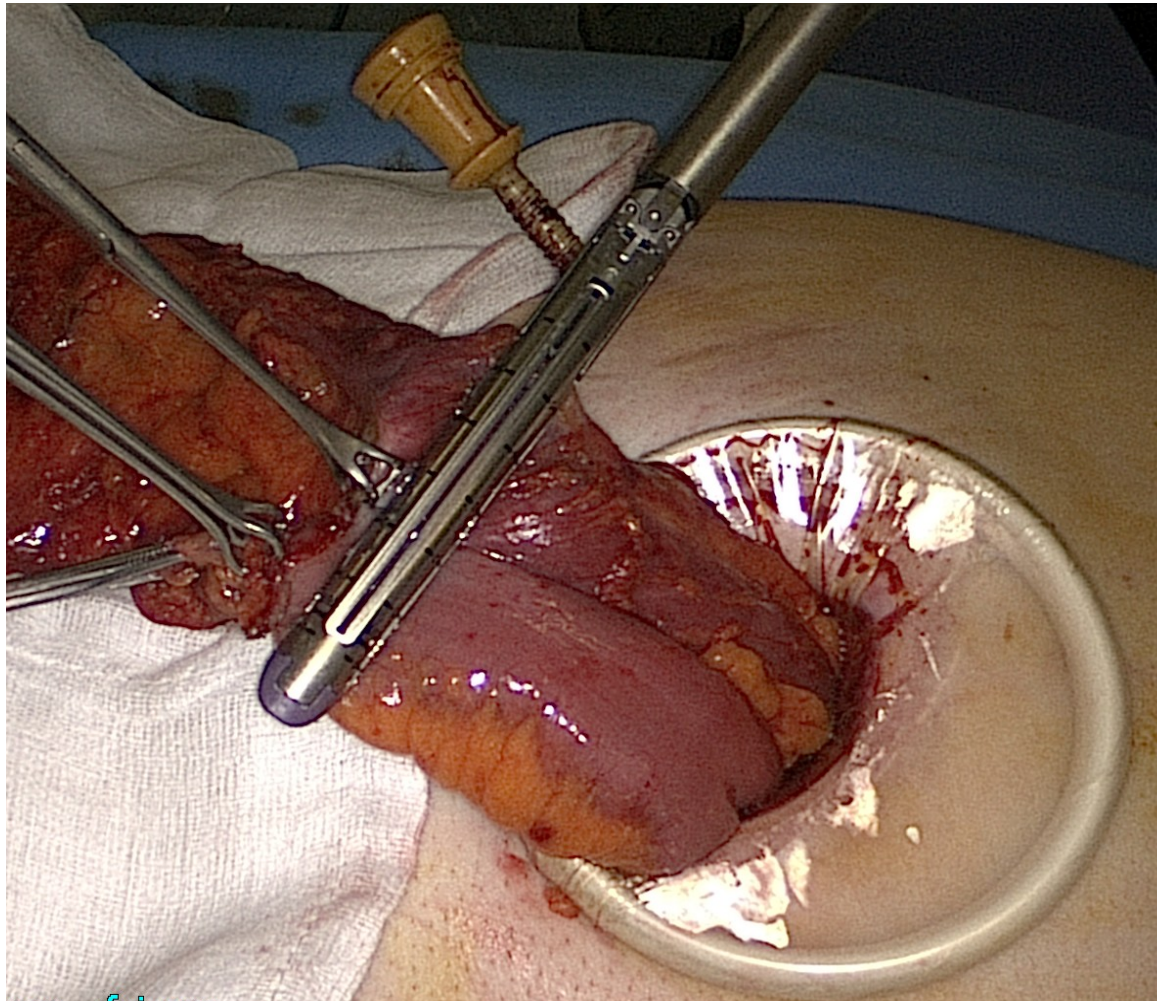


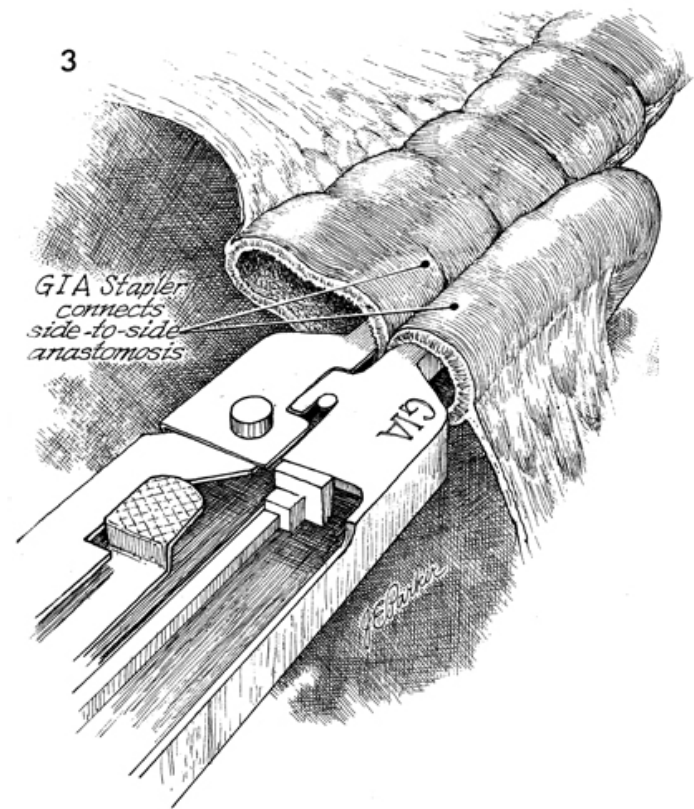
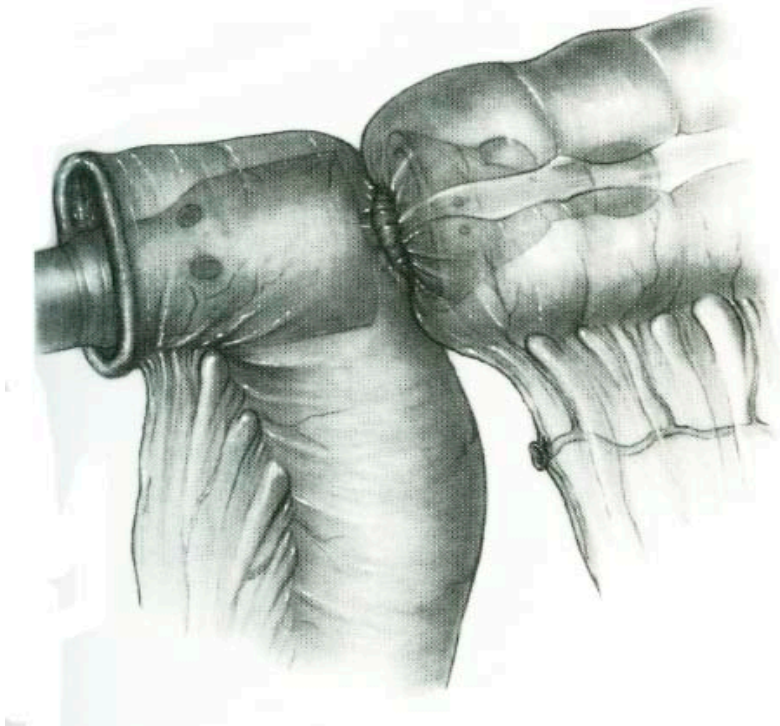






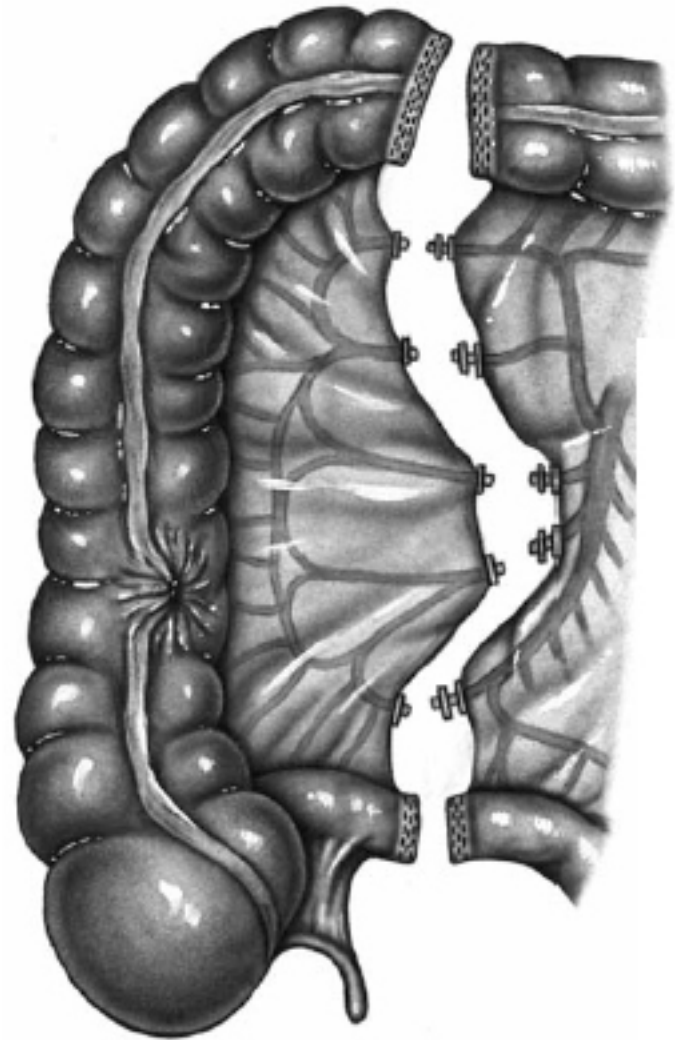
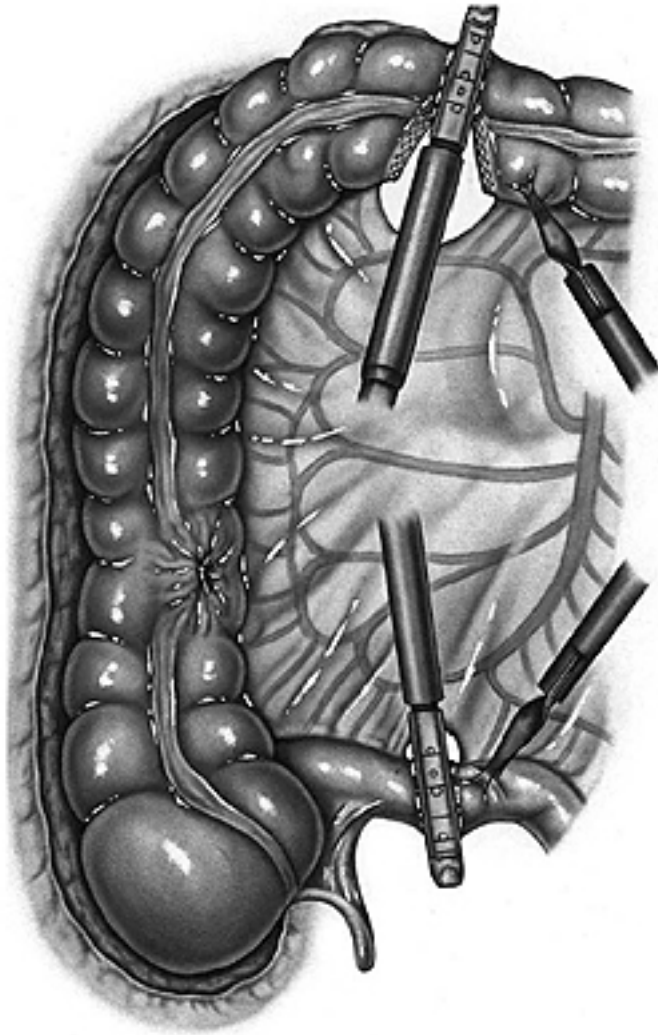
# Anastomose latéro-latérale



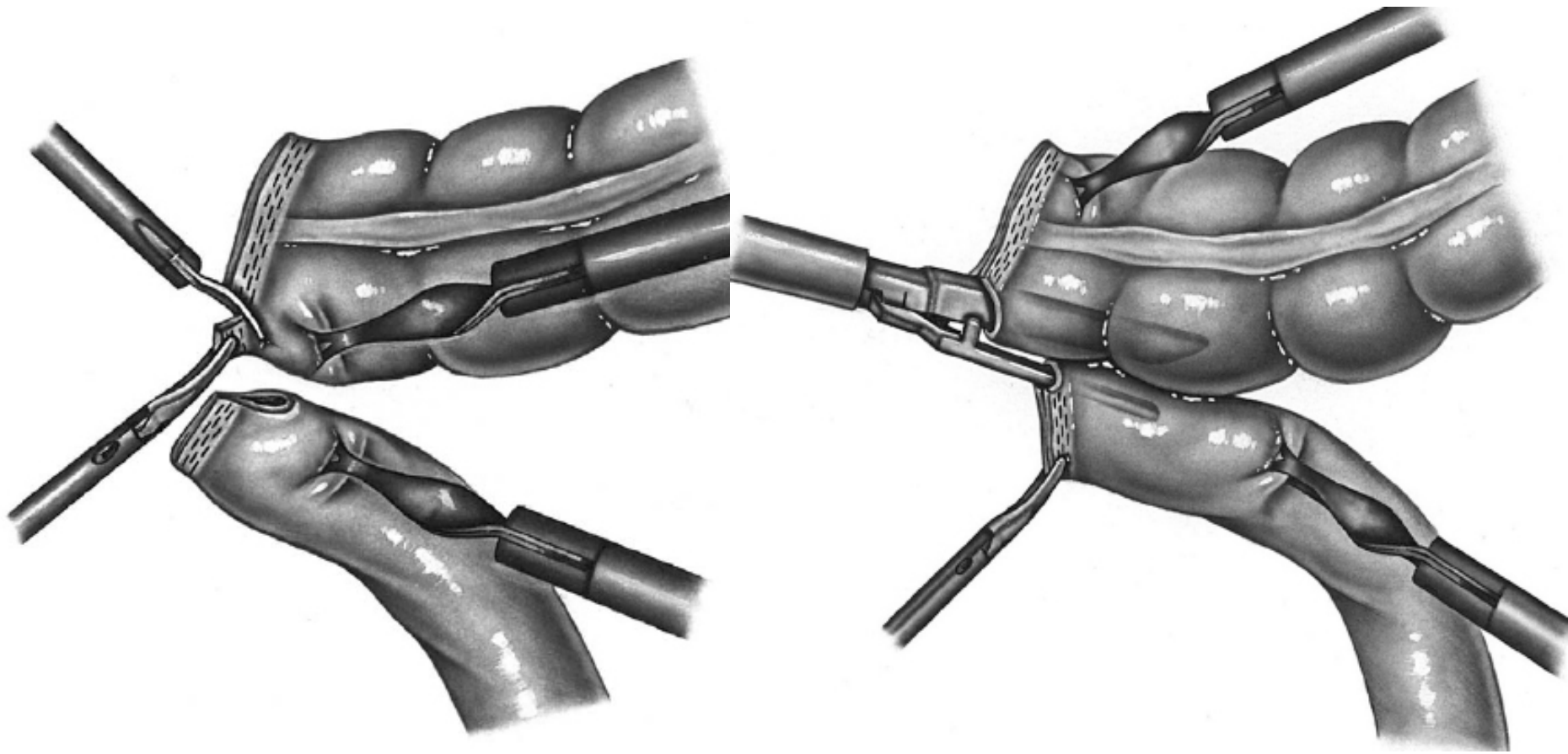




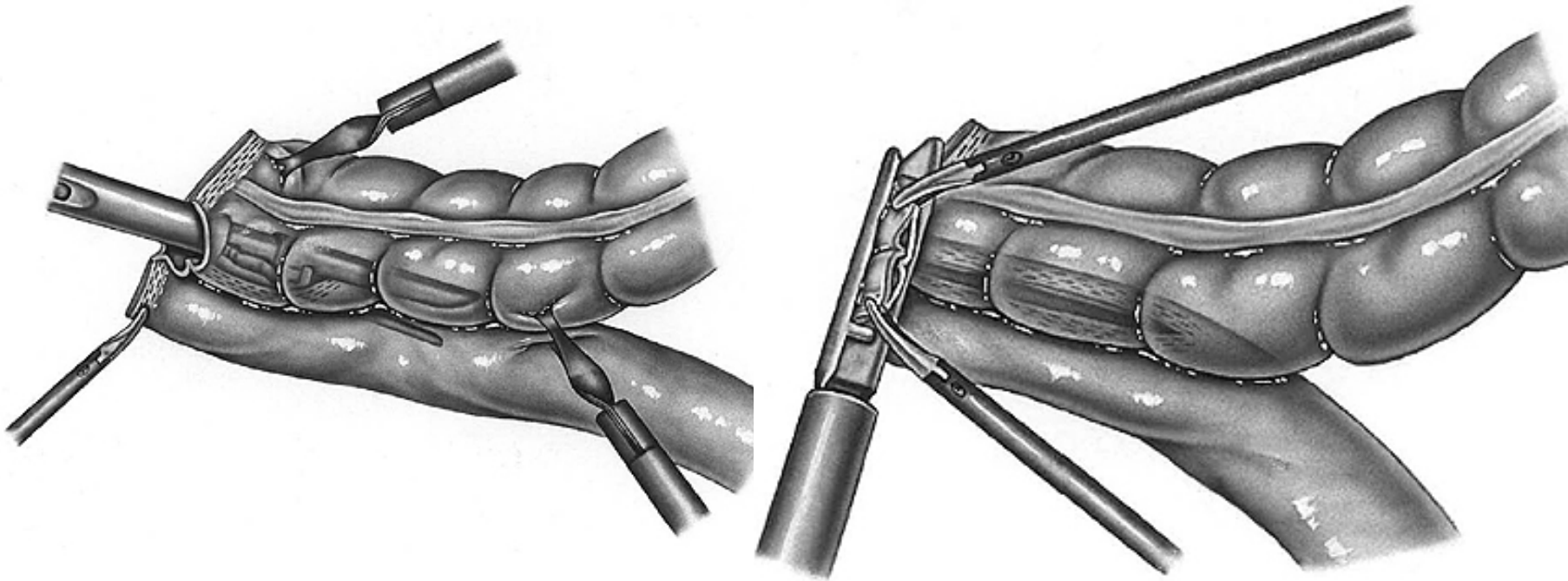
# Anastomose intra- corporelle



# Anastomose intra- corporelle



# Anastomose intra- corporeale





# Intracorporeal versus extracorporeal anastomosis during laparoscopic right hemicolectomy – Systematic review and meta-analysis

Roberto Cirocchi<sup>a</sup>, Stefano Trastulli<sup>a</sup>, Eriberto Farinella<sup>b</sup>, Salvatore Guarino<sup>c</sup>, Jacopo Desiderio<sup>a,\*</sup>, Carlo Boselli<sup>d</sup>, Amilcare Parisi<sup>e</sup>, Giuseppe Noya<sup>d</sup>, Karem Slim<sup>f</sup>

## Characteristics of the included studies.

Study	Type of study	N° patients and pathology	Type of ileo-colic anastomosis	
			Intracorporeal	Extracorporeal
Franklin et al. [26]	CCT	98 patients (all right colon cancers)	Side-to-side mechanical anastomosis, closing the enterotomy with additional stapler. A intra-operative colonoscopy was performed to ensure that the target lesion was removed, to inspect for synchronous lesion and to check the anastomosis for air leakage.	Side-to-side hand-sewn or stapled mechanical anastomosis
Hellan et al. [27]	CCT	80 patients (2 lymphomas, 15 benign neoplasms, 2 carcinoid tumours and 51 right colon cancers)	Side-to-side mechanical anastomosis. The enterotomies were closed using a intracorporeal manual suture.	Side-to-side stapled ileocolonic anastomosis in all cases with a stapled closure of the enterotomy in 91% of cases and a double-layer, hand-sewn closure in the remaining 9%
Fabozzi et al. [28]	CCT	100 patients (non metastatic right colon cancers)	NR	NR
Scatizzi et al. [29]	CCT	80 patients (non metastatic right colon cancer T1-3)	Side-to-side mechanical isoperistaltic anastomosis. The enterotomies were closed using a intracorporeal manual suture.	Side-to-side isoperistaltic mechanical anastomosis. The enterotomies were then closed using a manual suture
Chaves et al. [30]	CCT	60 patients (20 benign neoplasms and 40 non metastatic right colon cancers)	Side-to-side mechanical isoperistaltic anastomosis. The enterotomies were closed using a intracorporeal manual suture.	Side-to-side isoperistaltic mechanical anastomosis. The enterotomies were then closed using a stapler
Franklin et al. [31]	CCT	473 patients	NR	NR
Roscio et al. [32]	CCT	72 patients (non metastatic right colon cancer T1-4)	Side-to-side mechanical isoperistaltic anastomosis. The enterotomies were closed using a intracorporeal manual suture.	Side-to-side handsewn isoperistaltic anastomosis



# Anastomose intra- corporeale

Techniquement plus compliquée

Nécessité de plus d'agrafages (coût)

**Table 15**

Instrumentation costs in different procedures.

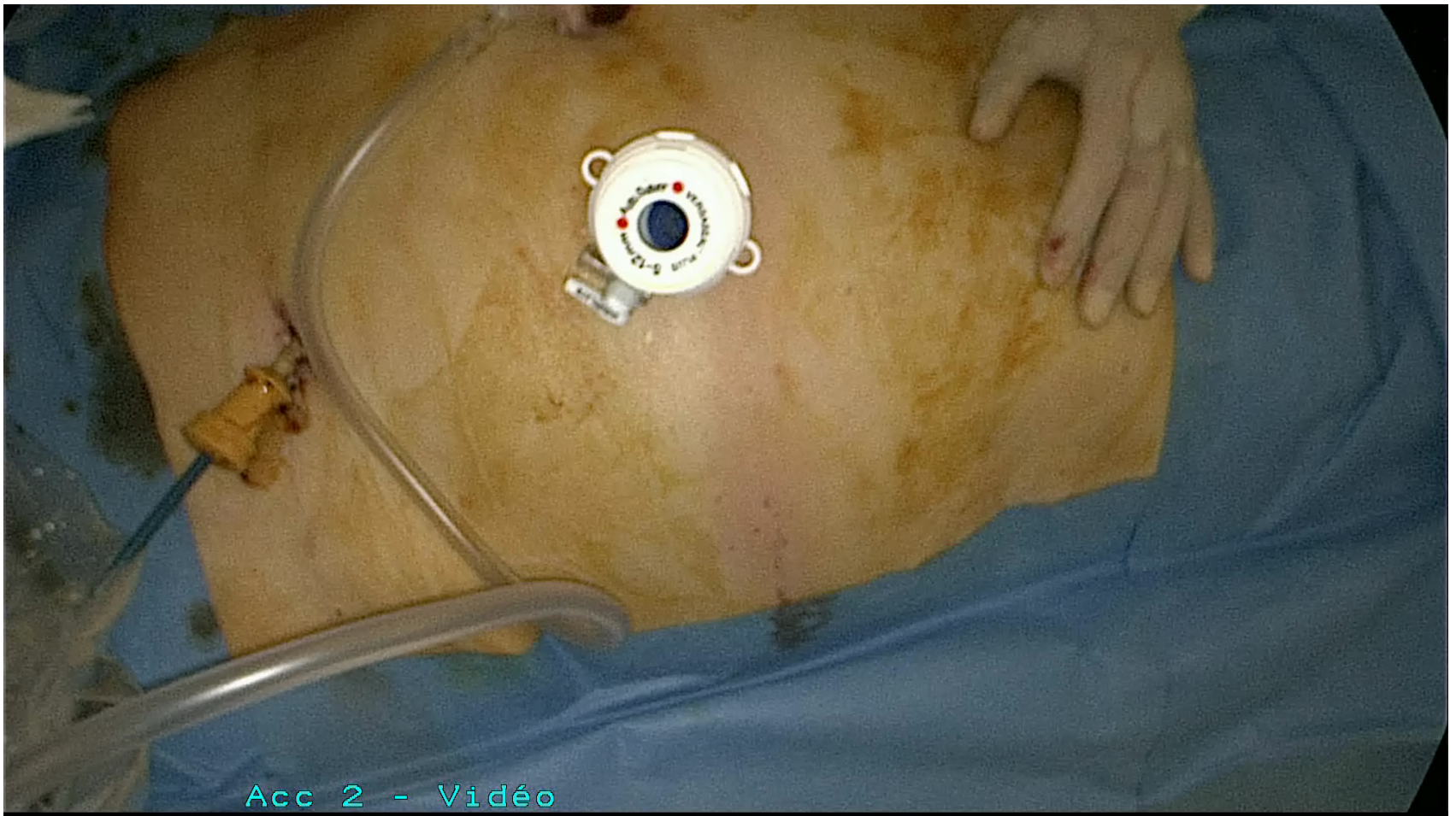
Right hemicolectomy	"Estimated Instrumentation Costs", General Hospital, Leverkusen Germany (\$)
Open	45
Video assisted	105–109
Fully laparoscopic	1200–2000

Surtout utile chez les patients obèses

# Etape 8

Fermeture des mésos

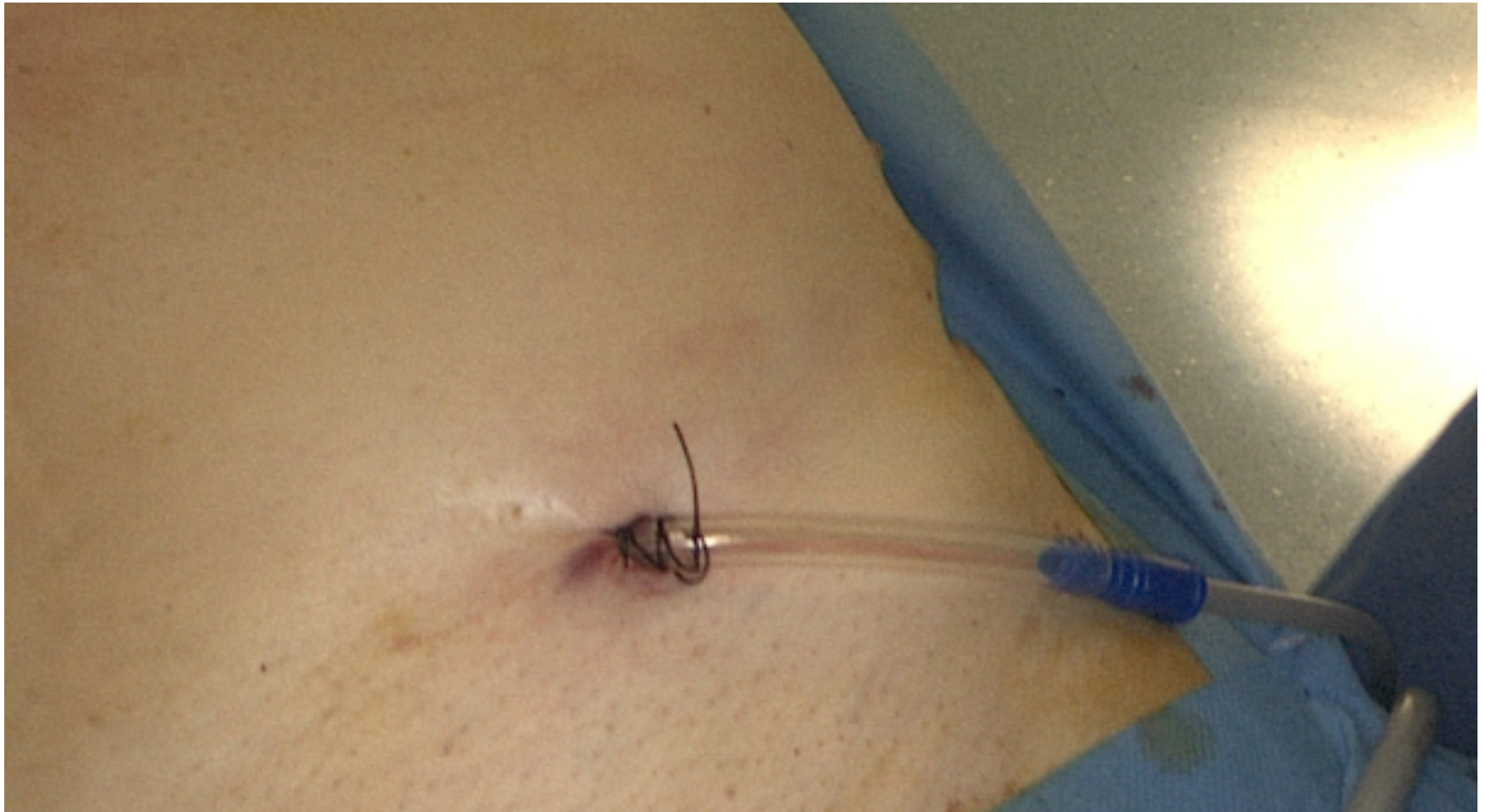








# Drain?



# Soins post-opératoires

- Liquides clairs après 4 heures
- Alimentation légère après 8 heures
- 2 doses d'antibiotiques (CS II)
- Prophylaxie HBPM
- Patient stimulé à se mobiliser
- Retrait du drain J1
- Retour au domicile dès la reprise du transit



Fast track



# កម្ពុជា





