



Chirurgie mini-invasive des tumeurs du foie: Passé, présent et perspectives

Service de Chirurgie Digestive et Hépato-Bilio-Pancréatique
GHU Henri-Mondor, Créteil

Unité Inserm U955, Equipe 18 « Pathophysiology and Therapy of Chronic Viral Hepatitis and Related Cancers » IMRB

1

Aucun conflit d'intérêt

INTRODUCTION

PASSÉ

PRESENT

PERSPECTIVES

CONCLUSIONS

INTRODUCTION

PASSÉ

PRESENT

PERSPECTIVES

CONCLUSIONS

Coelioscopie

Pneumopéritoine



Annals of the Royal College of Surgeons of England (1975) vol 57

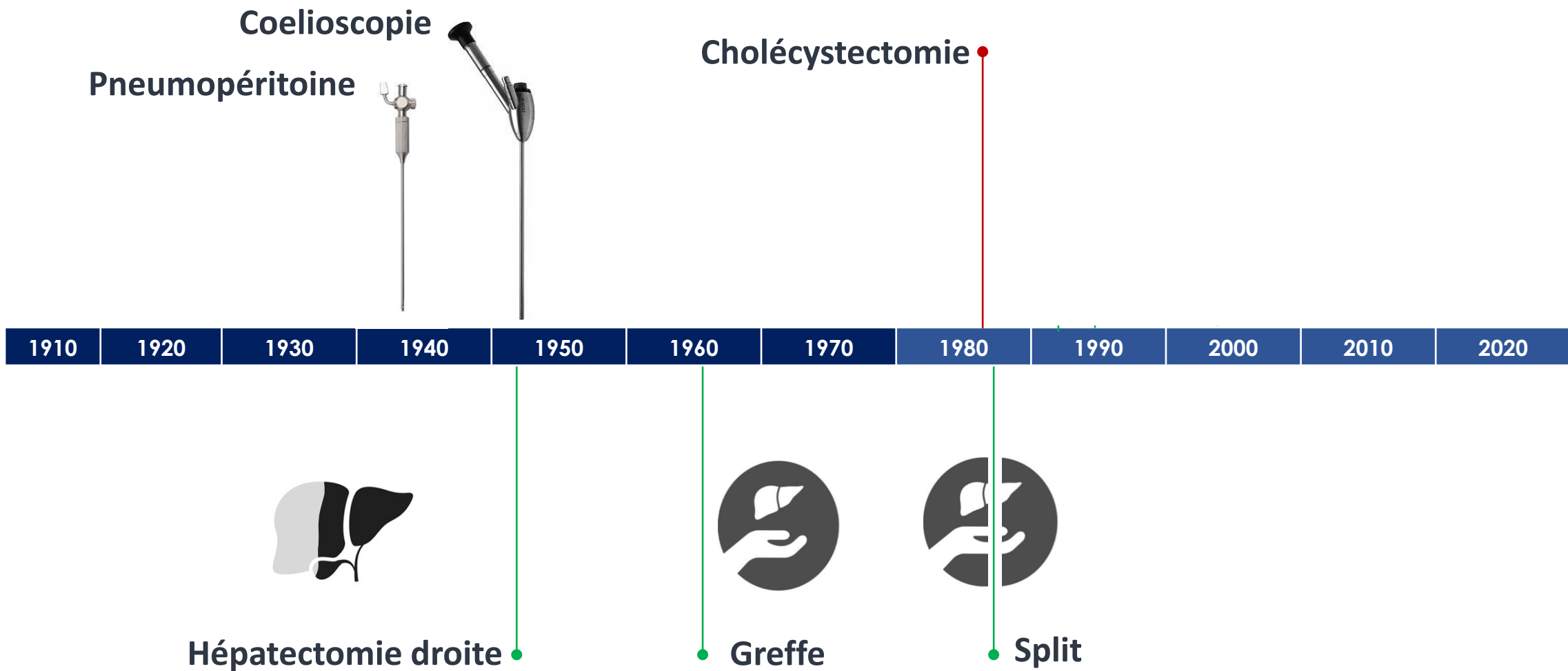
ASPECTS OF DIAGNOSIS*

Value of laparoscopy in hepatobiliary disease

Alfred Cuschieri MD ChM FRCS FRCSED

Senior Lecturer and Honorary Consultant Surgeon, Department of Surgery, University of Liverpool

1910	1920	1930	1940	1950	1960	1970	1980	1990	2000	2010	2020
------	------	------	------	------	------	------	------	------	------	------	------



INTRODUCTION

PASSÉ

PRESENT

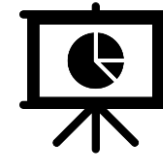
FUTUR

CONCLUSIONS

Démarrage 90's
Merci les gynéco

INTRODUCTION

PASSÉ



PRESENT

FUTUR

CONCLUSIONS

INTRODUCTION

PASSÉ

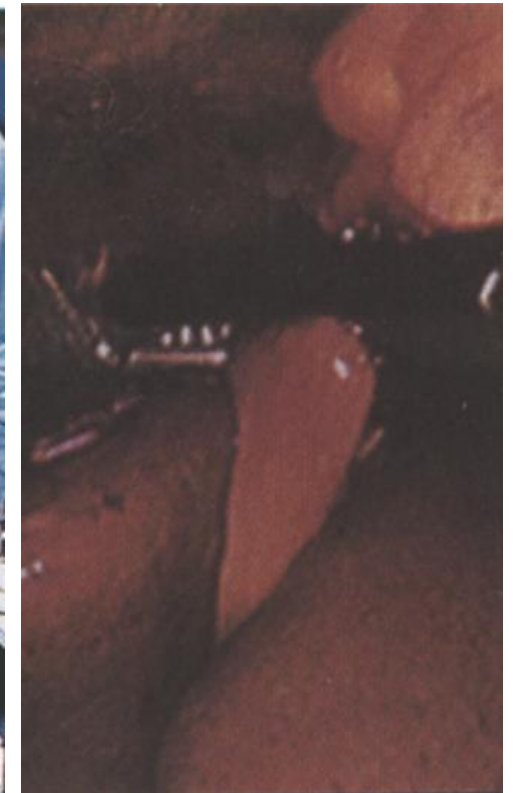


PRESENT

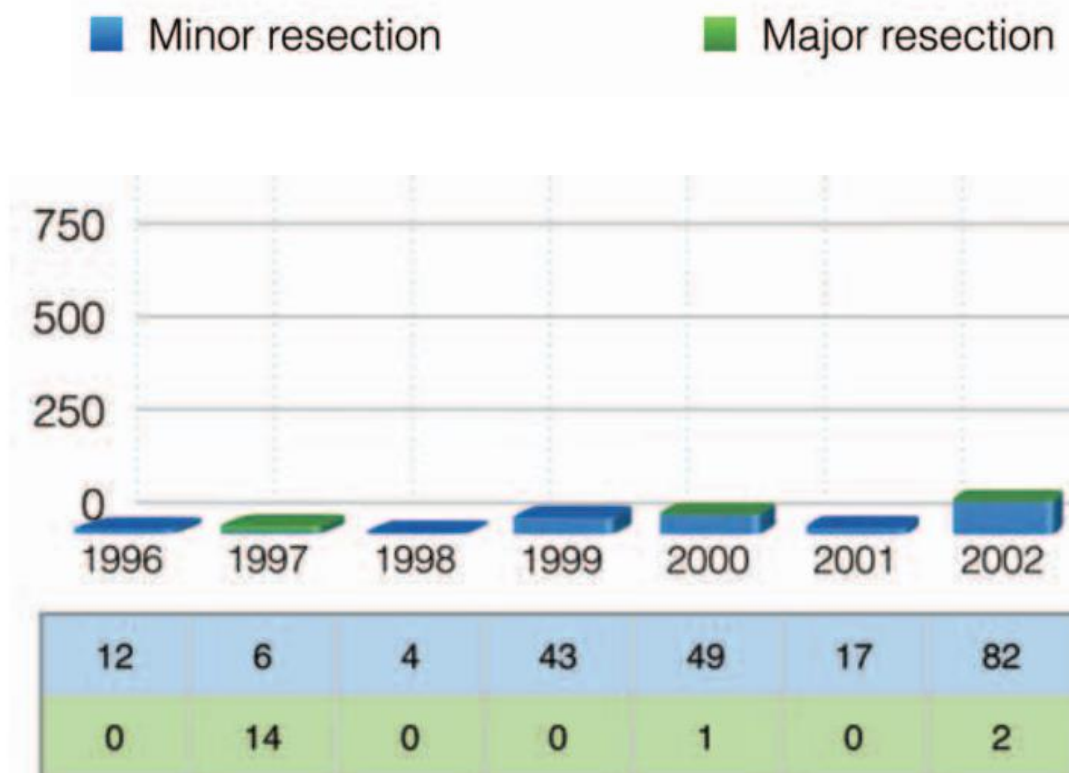
FUTUR

CONCLUSIONS

Défi de taille...



...démarrage lent

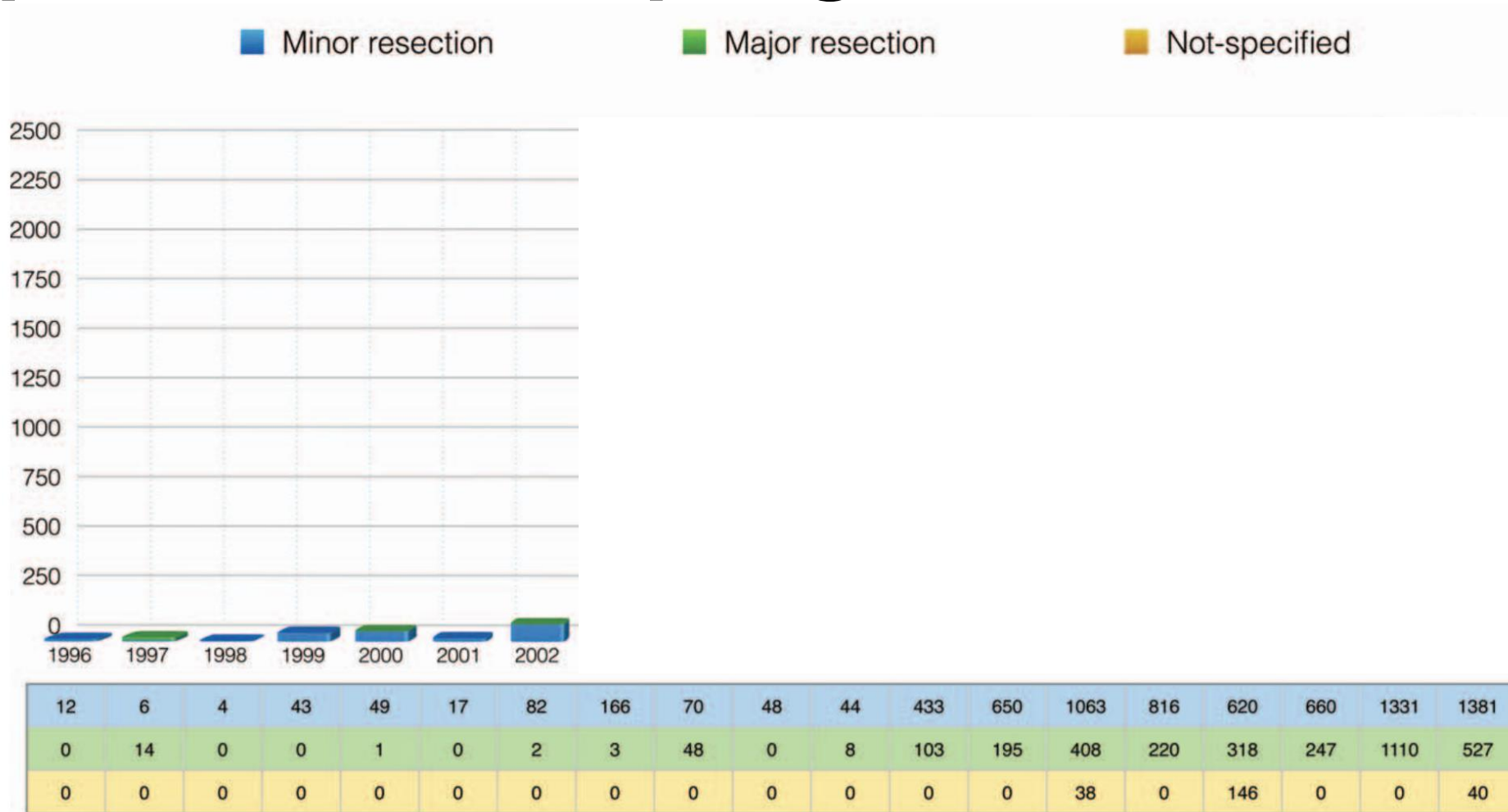


Evolution technique*

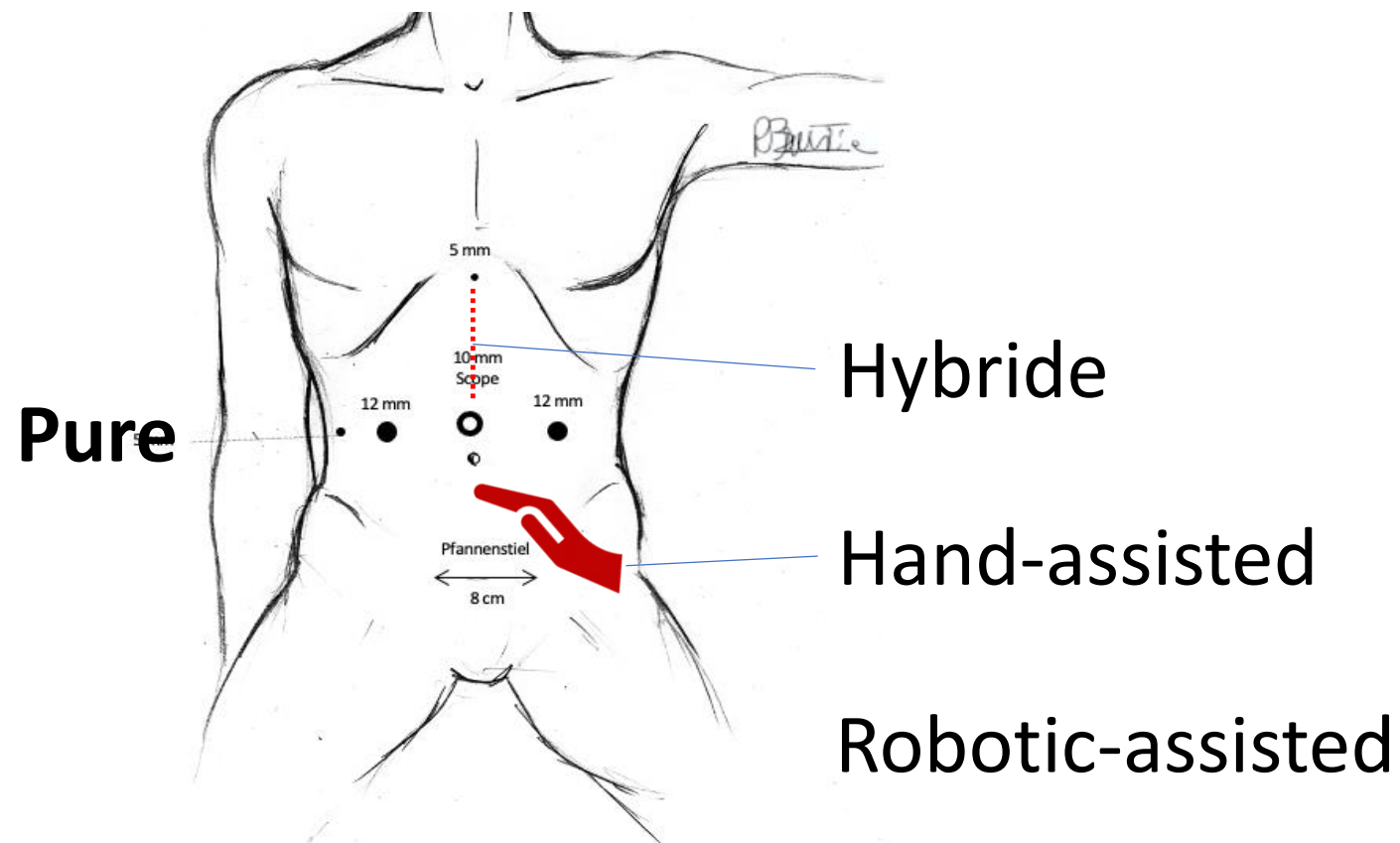
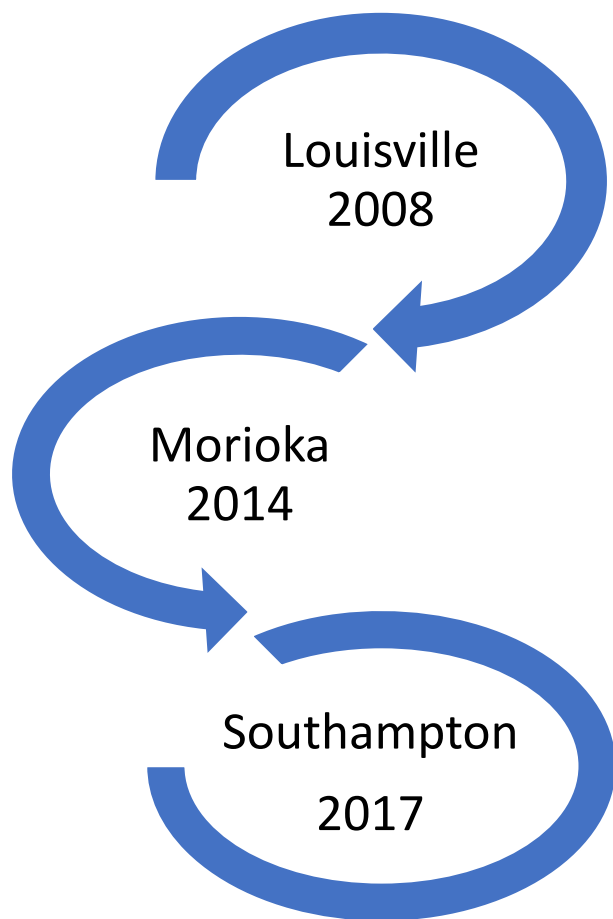


*Echographe, colonnes 3D, vert d'indocyanine

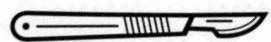
Implémentation progressive



Trois conférences de consensus: définitions



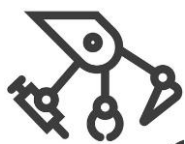
Implémentation constante aux US



N= 8753



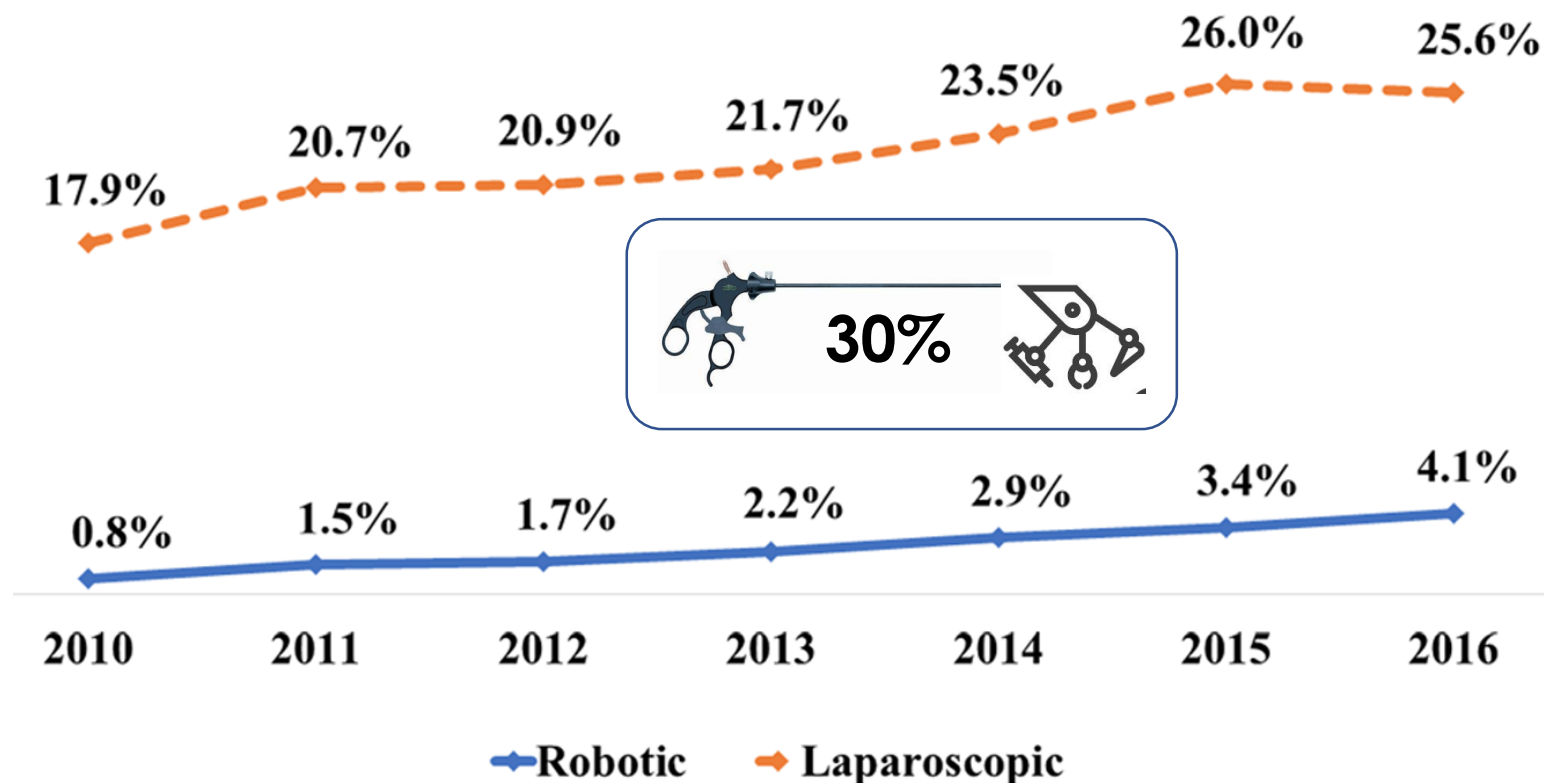
N=2636



N=287



N=621



...et en Europe

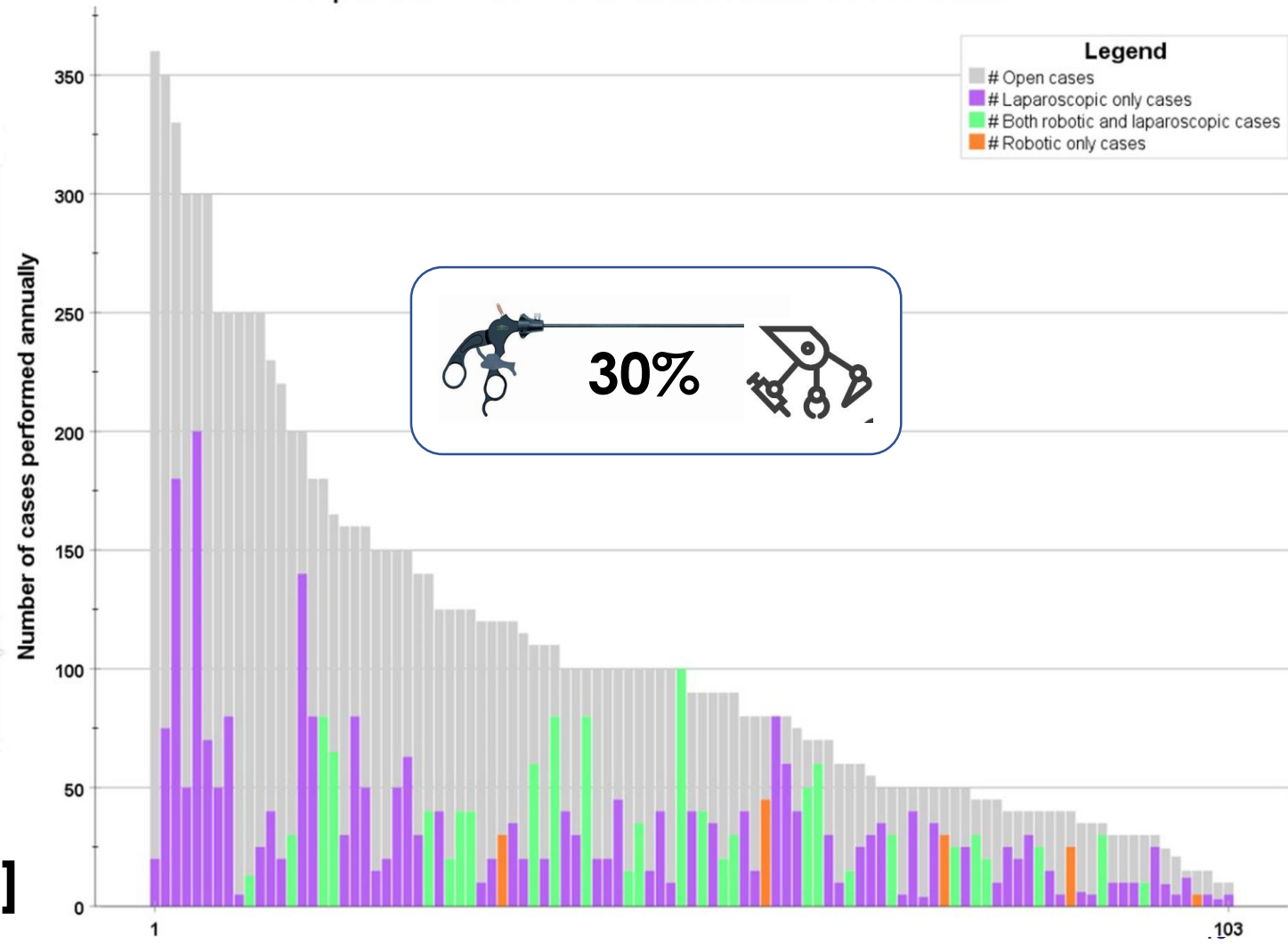


N=103



100/y [50-140]

Proportion MILS of total annual volume of liver resections



INTRODUCTION

PASSÉ



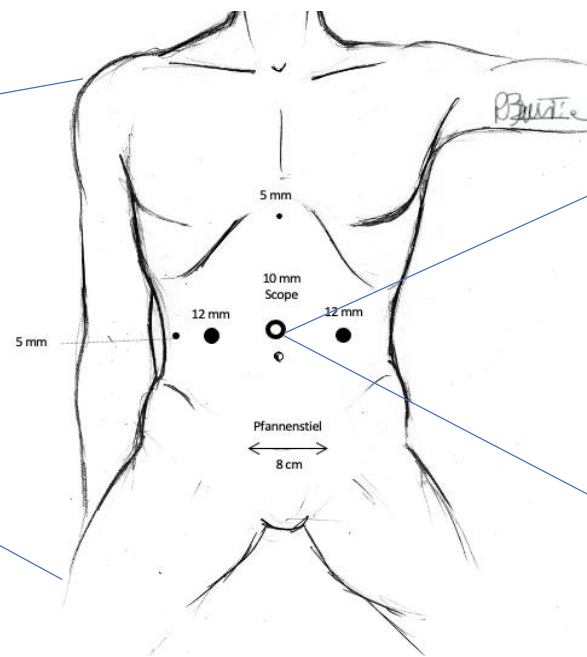
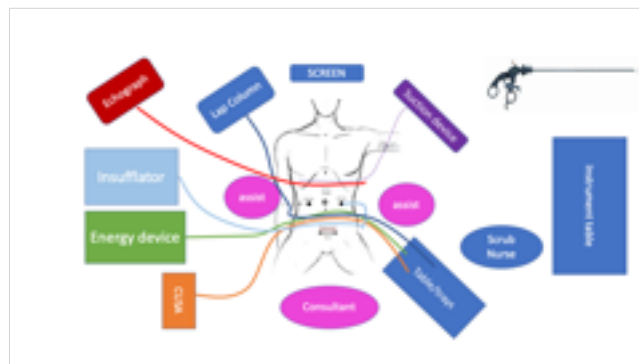
PRESENT

FUTUR

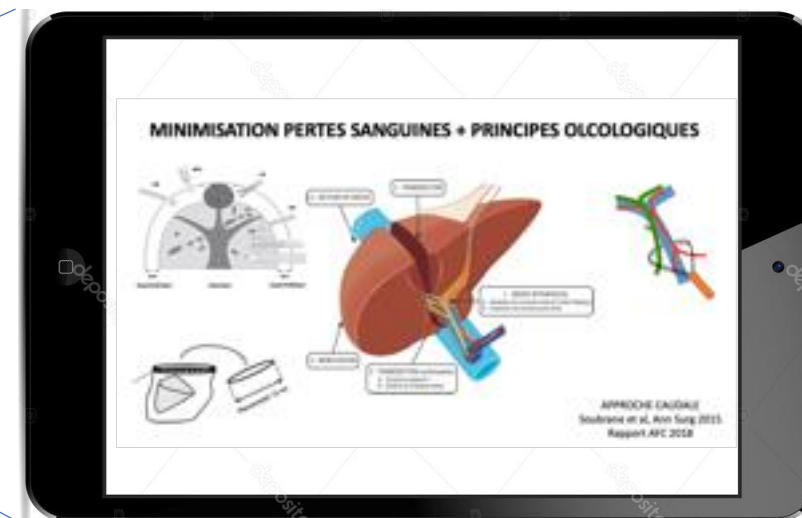
CONCLUSIONS

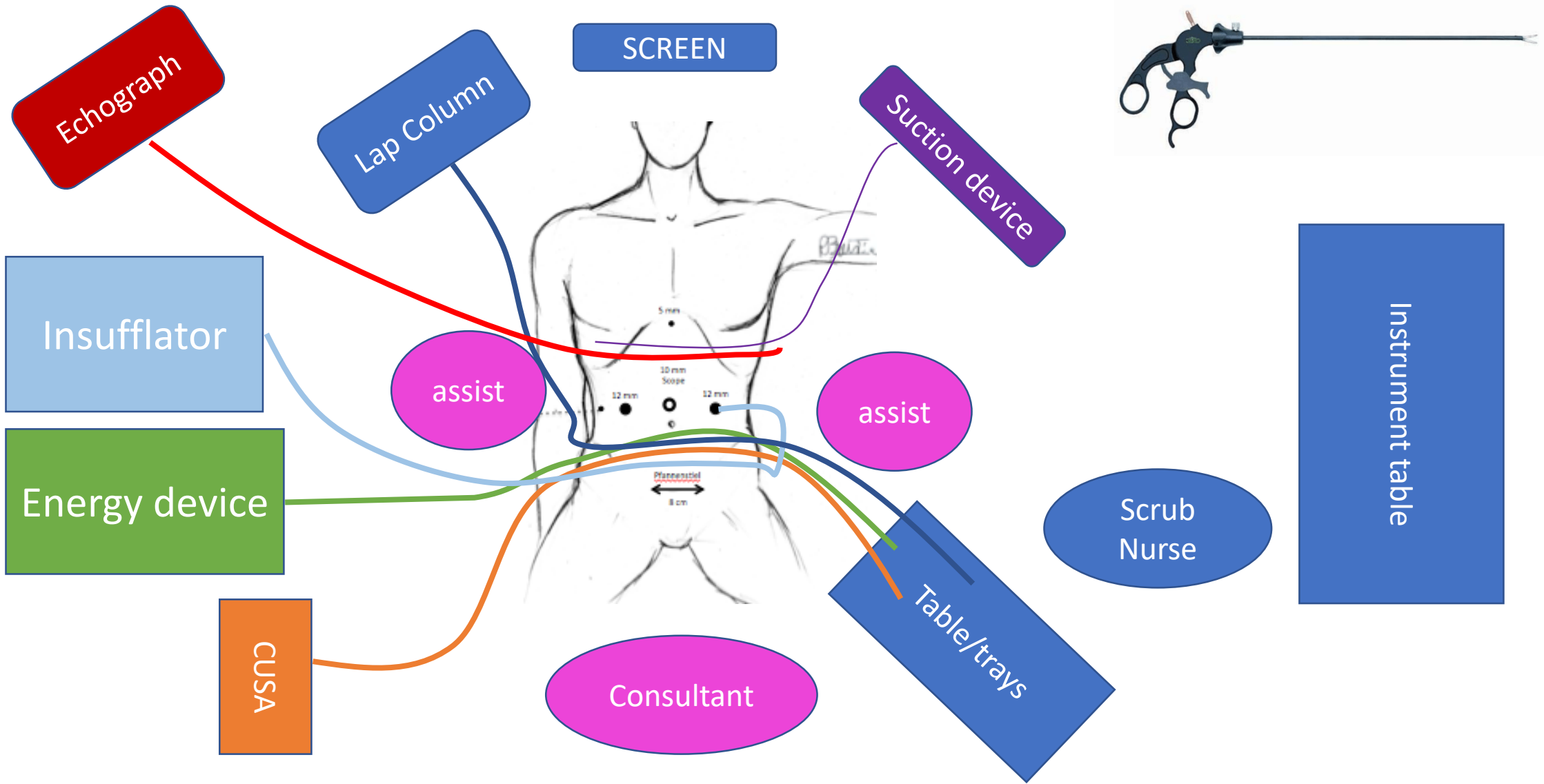
Tout est dans l'organisation

DEHORS



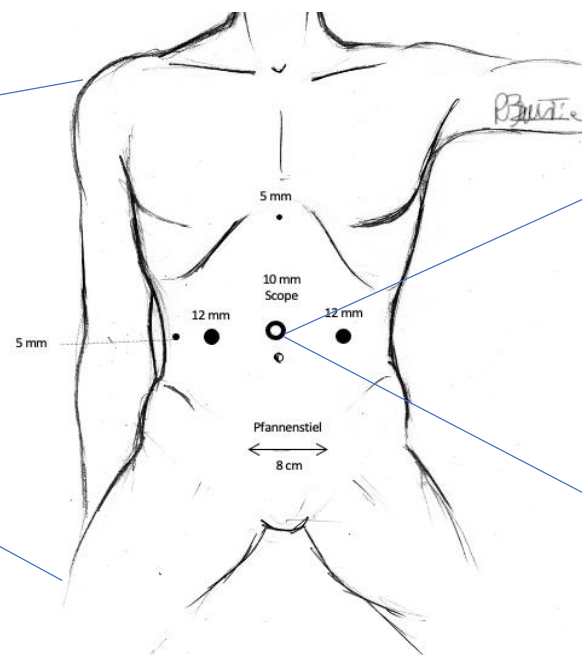
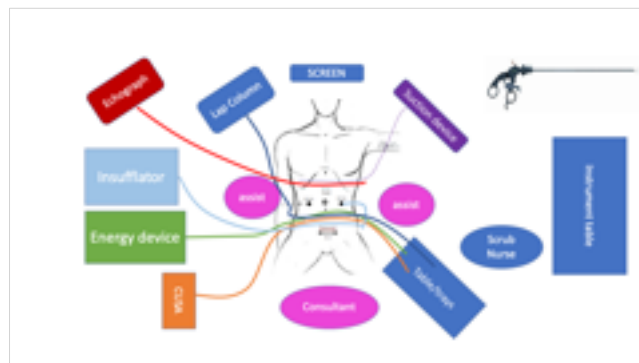
DEDANS



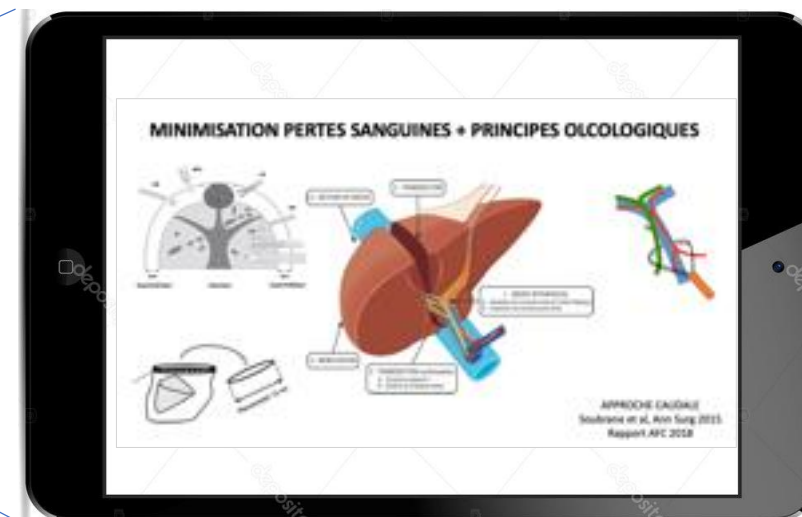


Tout est dans l'organisation

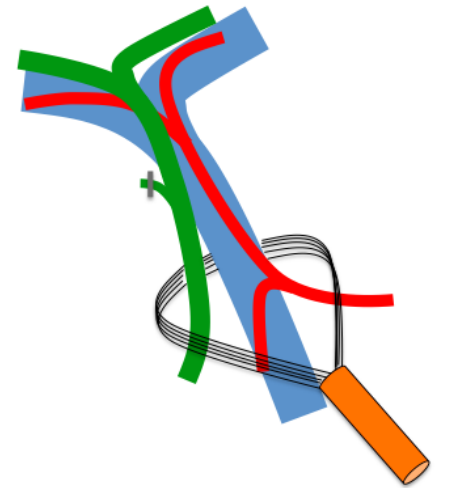
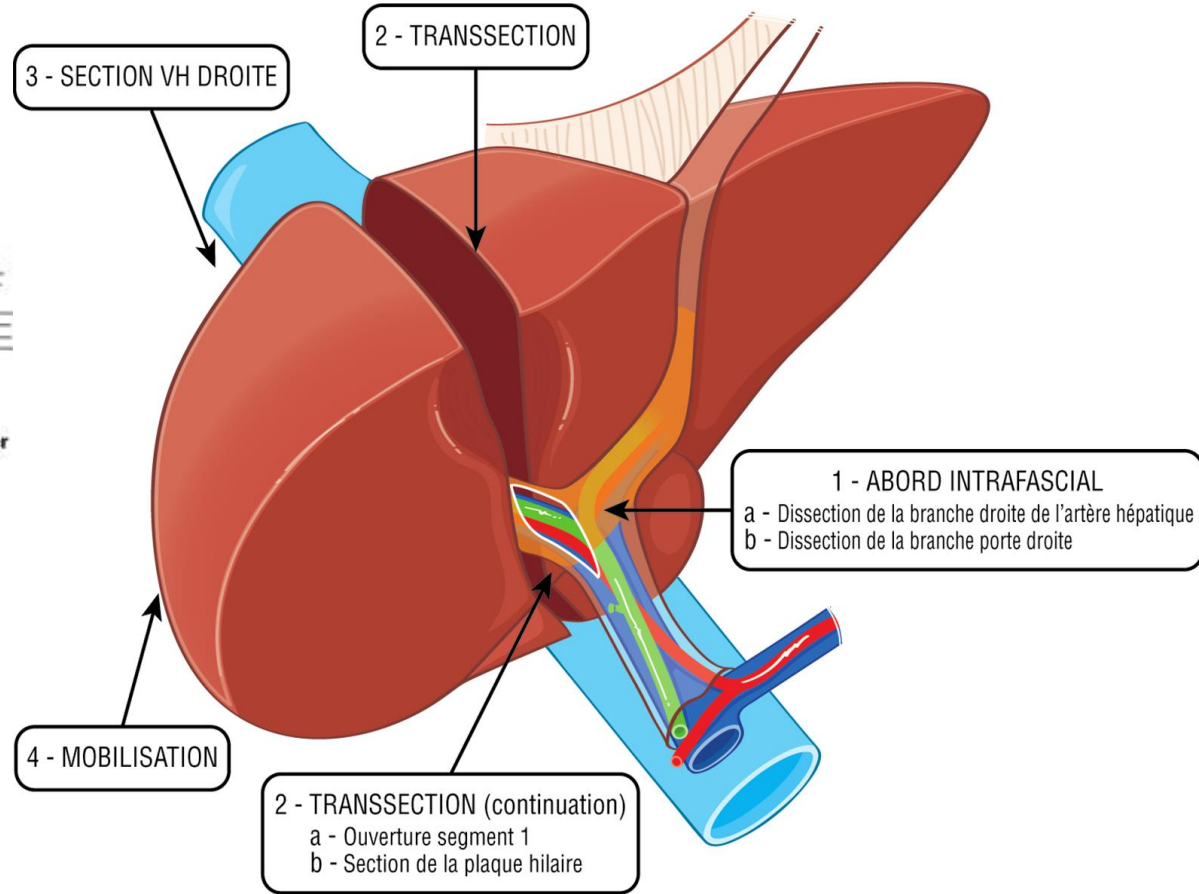
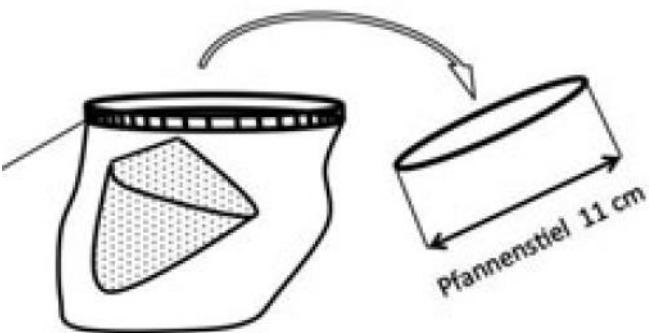
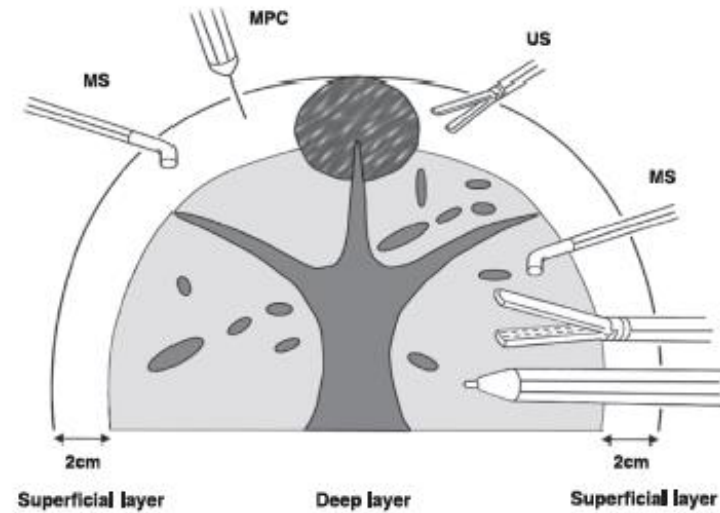
DEHORS



DEDANS

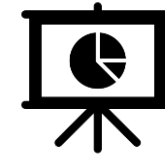


MINIMISATION PERTES SANGUINES + PRINCIPES ONCOLOGIQUES



INTRODUCTION

PASSÉ



PRESENT

FUTUR

CONCLUSIONS

Que mesurer?



versus

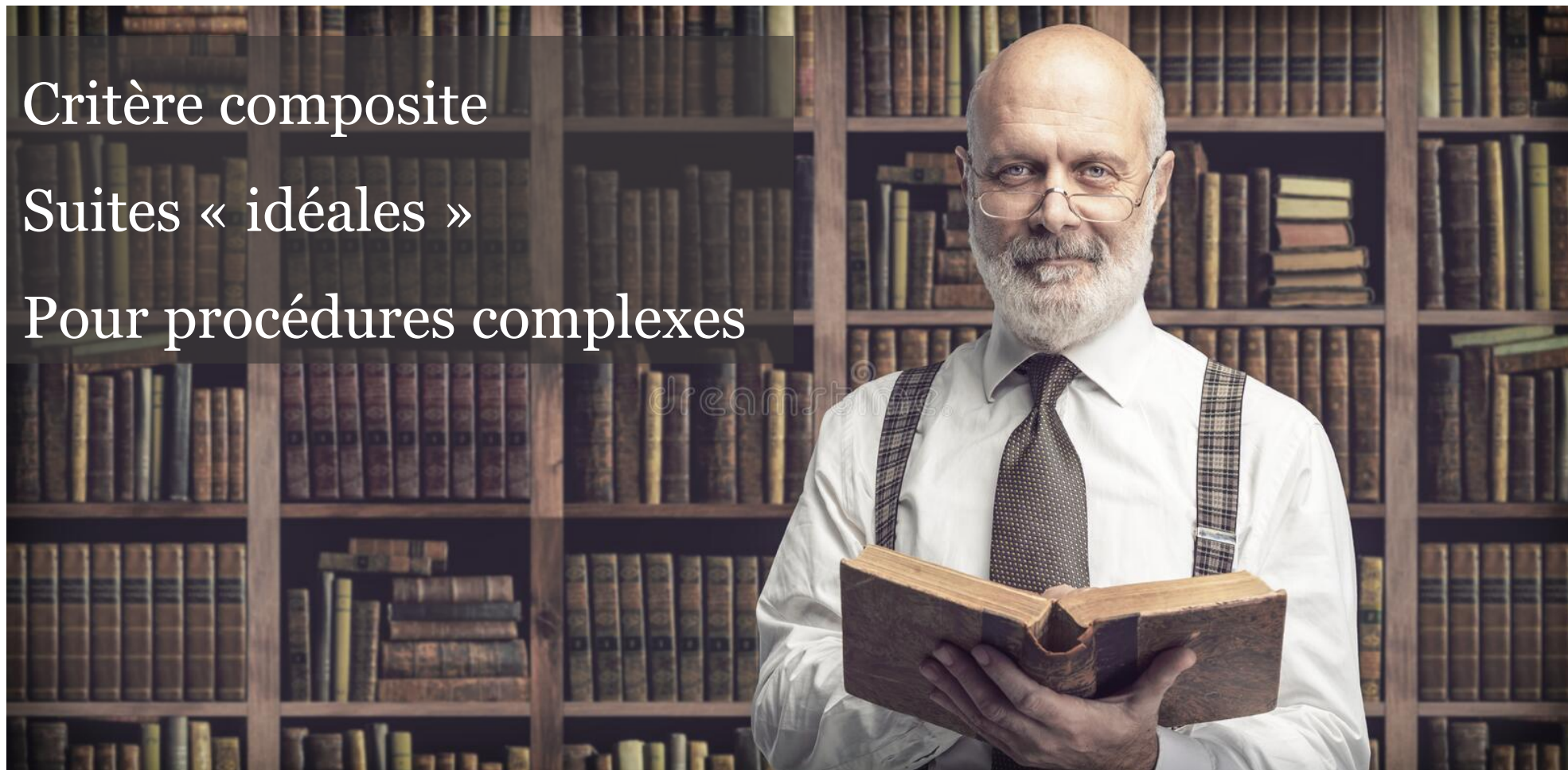


Textbook Outcomes

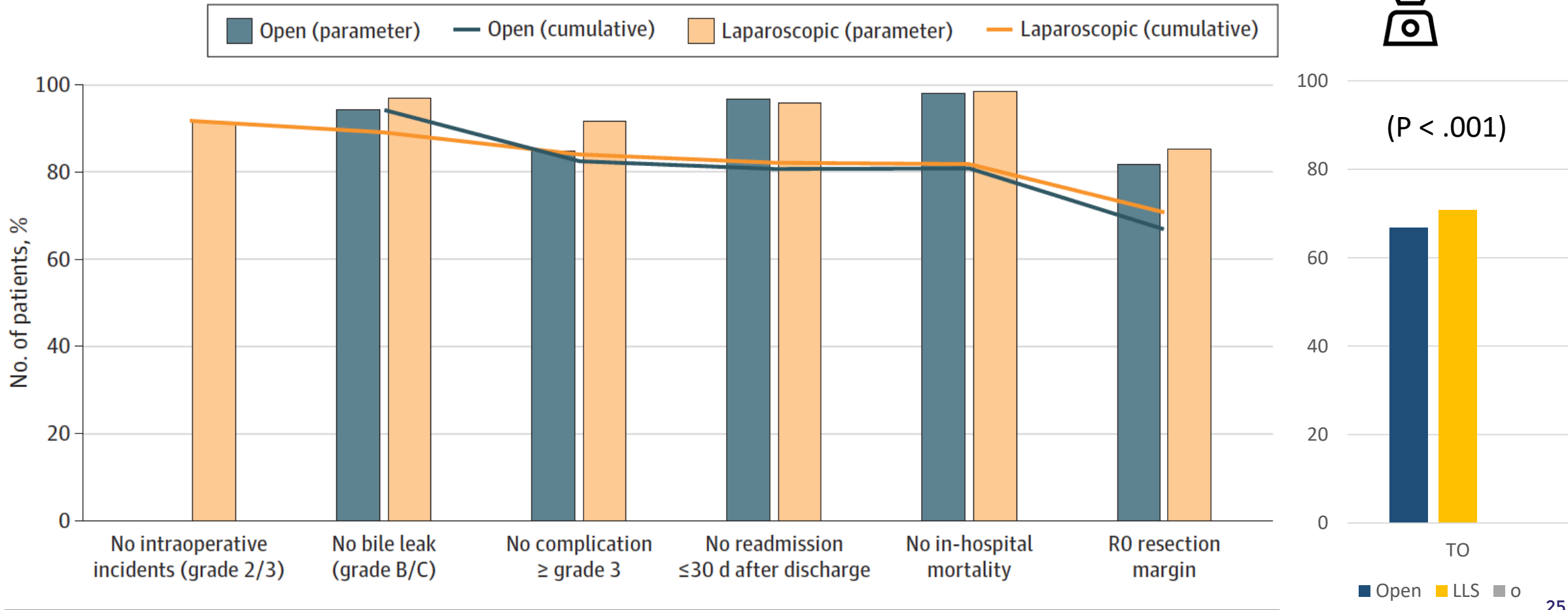
Critère composite

Suites « idéales »

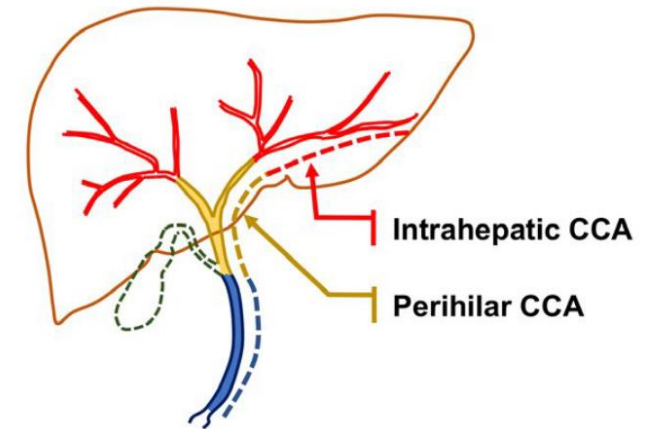
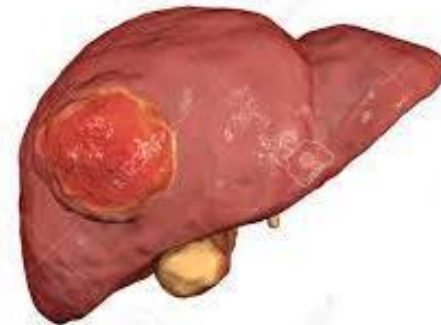
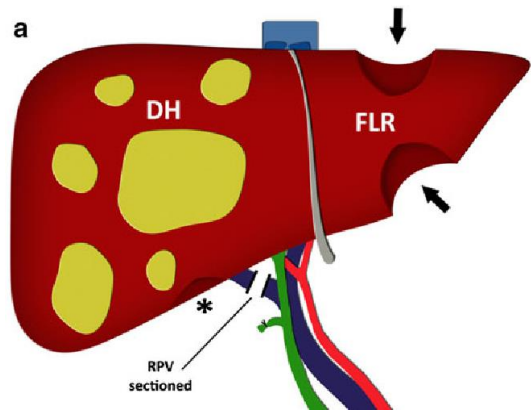
Pour procédures complexes



Textbook Outcomes in MILS et Open

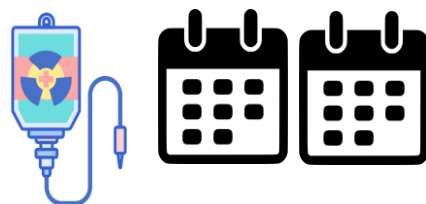
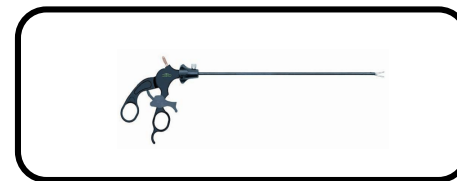
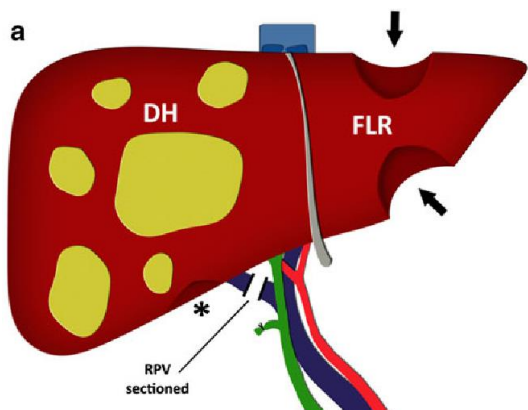


Résultats oncologiques?



Métastases hépatiques?

Survie globale et sans récurrence similaire

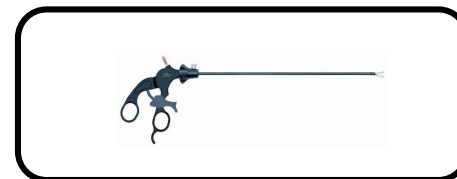
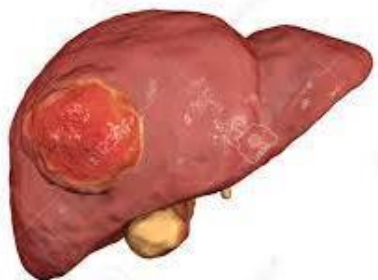


Moindre intervalle sans chimiothérapie

Return to the intended oncological treatment (RIOT)

Carcinome hépatocellulaire?

Survie globale et sans récurrence similaire

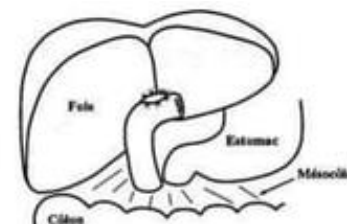
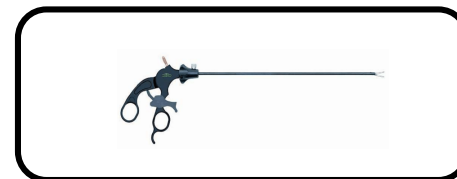
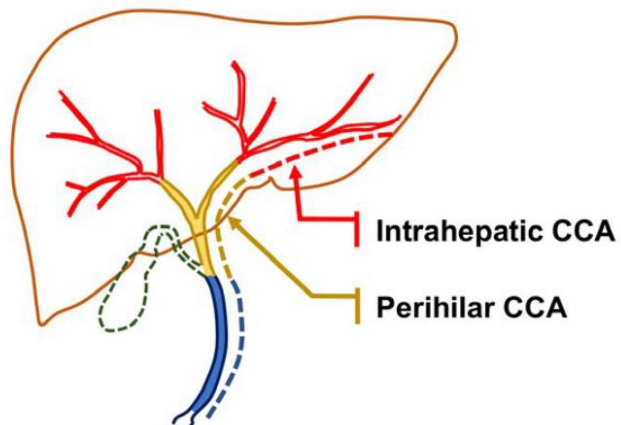


CHILD B

Moindre décompensation d'ascite et mortalité 90J

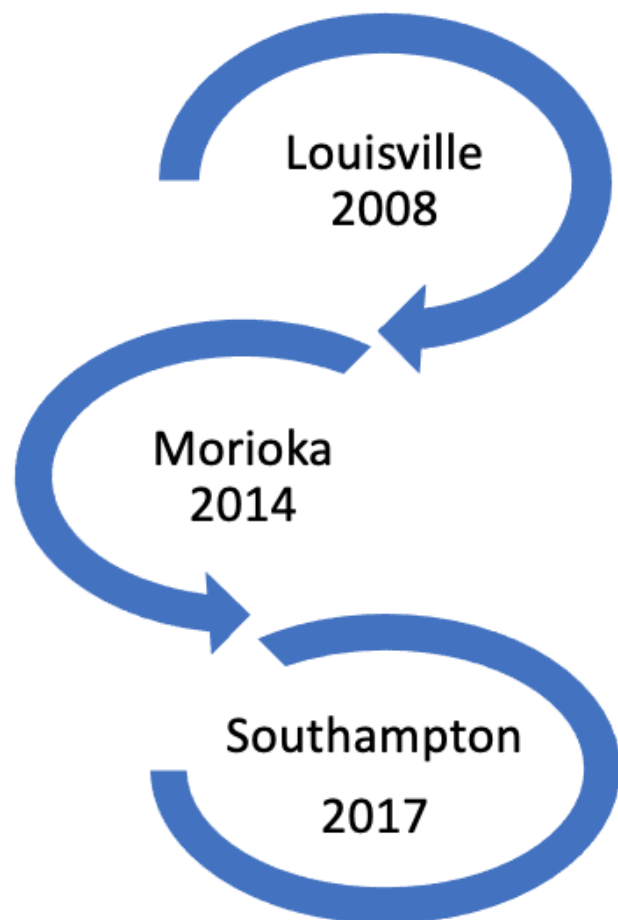
Cholangiocarcinome?

Survie globale et sans récurrence similaire



Curage difficile, reconstruction biliaire très difficile

Trois conférences de consensus: résultats



lineures = standard
lajeures à explorer
n plus de la laparosc



INTRODUCTION

PASSÉ

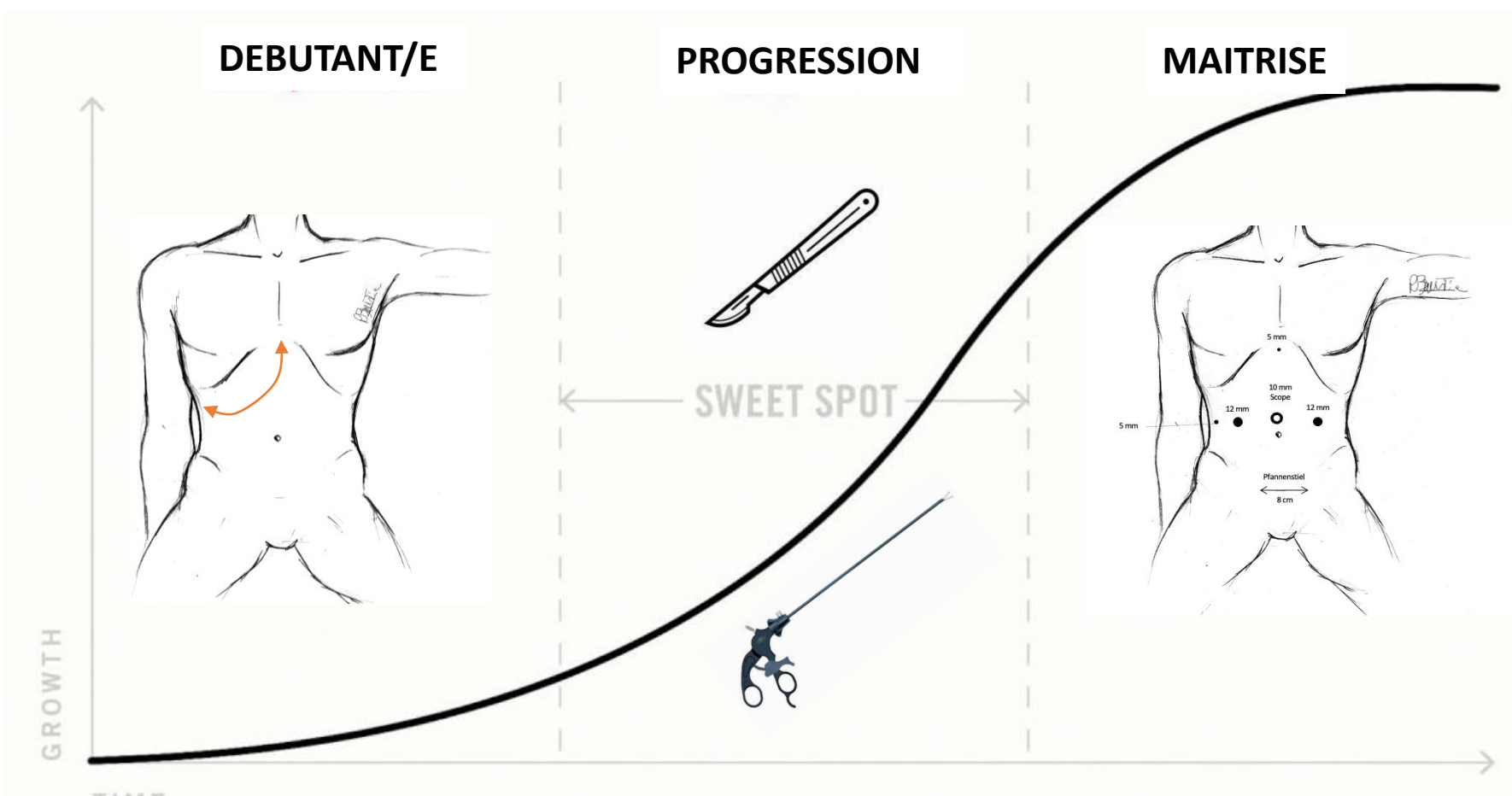


PRESENT

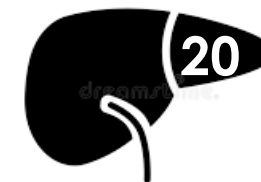
FUTUR

CONCLUSIONS

Le problème est...la courbe d'apprentissage



...mais ça change!



Surgeon's experience	1st–5th case	6th–10th case	11th–15th case	16th–20th case	>20th case
Conversion	9/36 (25 %)	5/23 (21.7 %)	4/25 (16 %)	1/18 (5.6 %)	1/45 (2.2 %)



Institution's experience	1st–25th case	26th–50th case	51th–75th case	76th–100th case	>100th case
Conversion	8/25 (32 %)	3/25 (12 %)	3/25 (12 %)	3/25 (12 %)	3/47 (6.4 %)

INTRODUCTION

PASSÉ

PRESENT

PERSPECTIVES

CONCLUSIONS

MILS 30%

**Complications ↓, Onco =
Mineur ok, Majeur à explorer
Programme HPB, 2 chir**

INTRODUCTION

PASSÉ

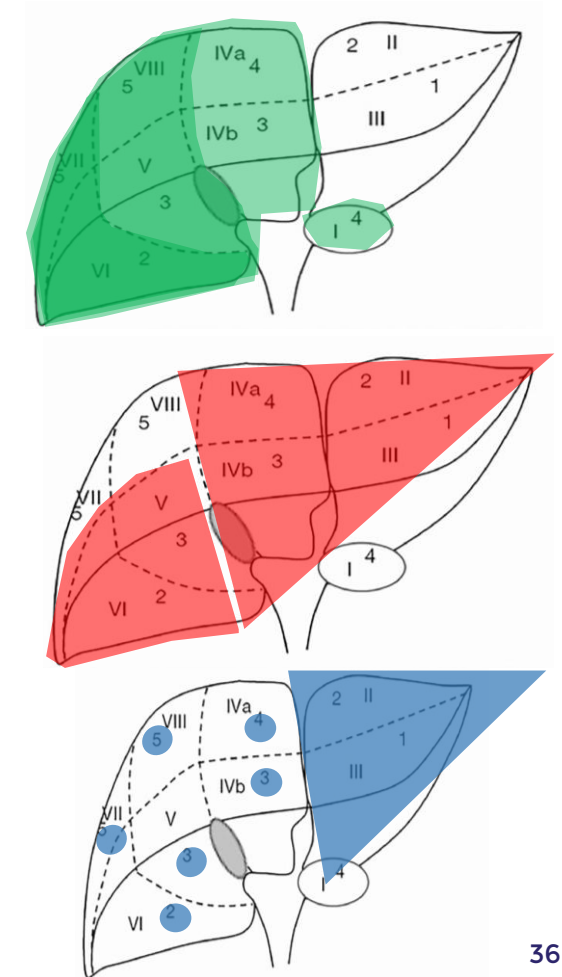
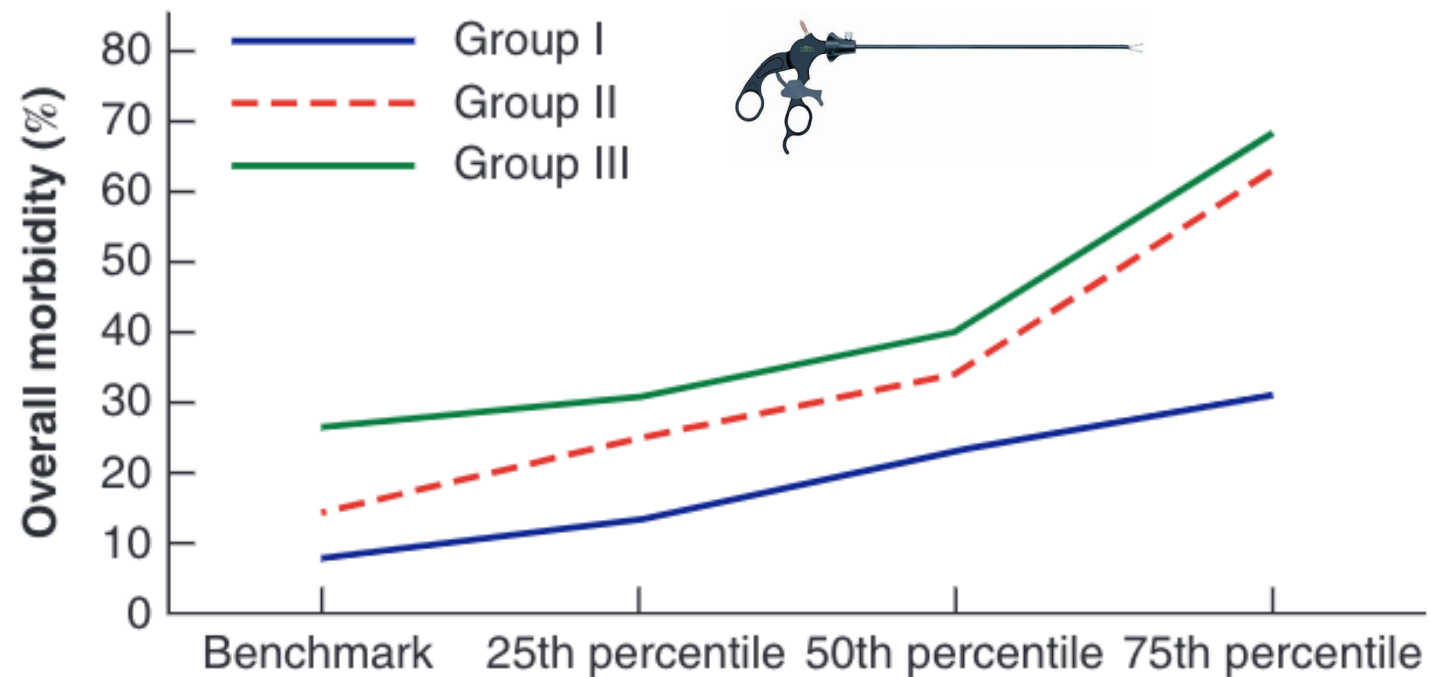
PRESENT

PERSPECTIVES

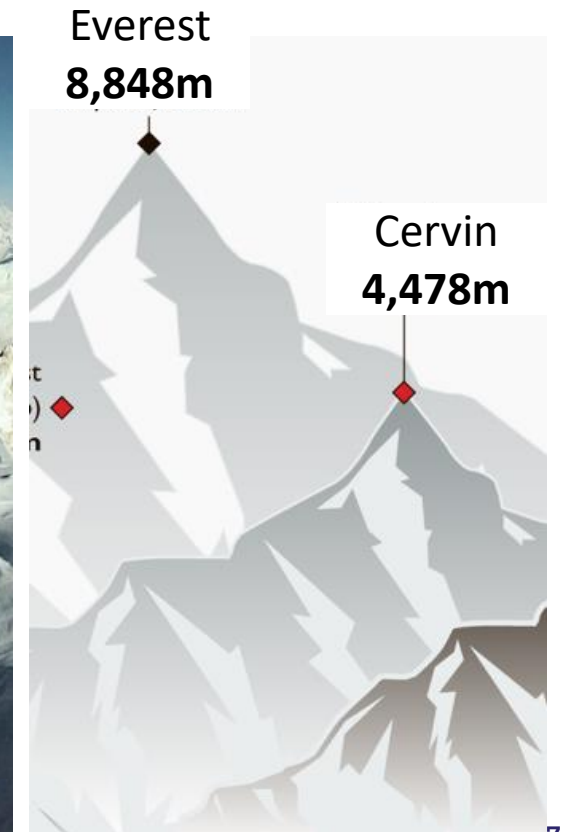
CONCLUSIONS

MILS: Benchmark et Difficulté

a Overall morbidity

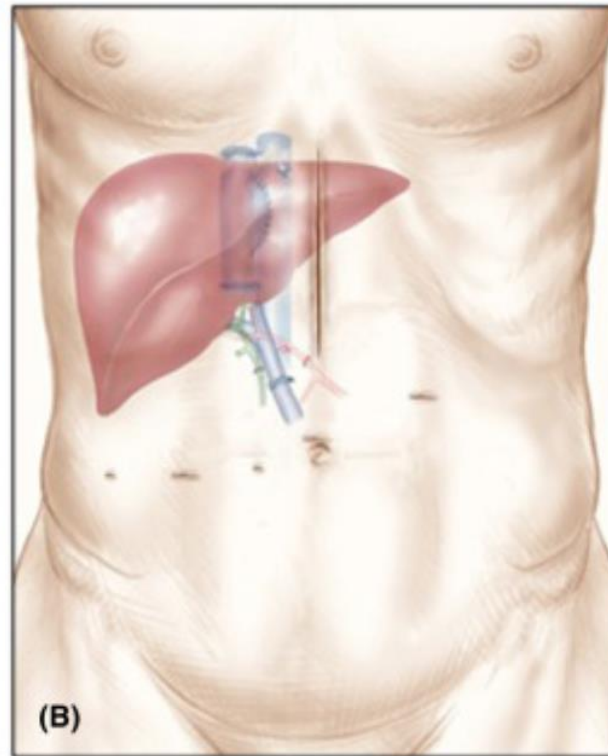
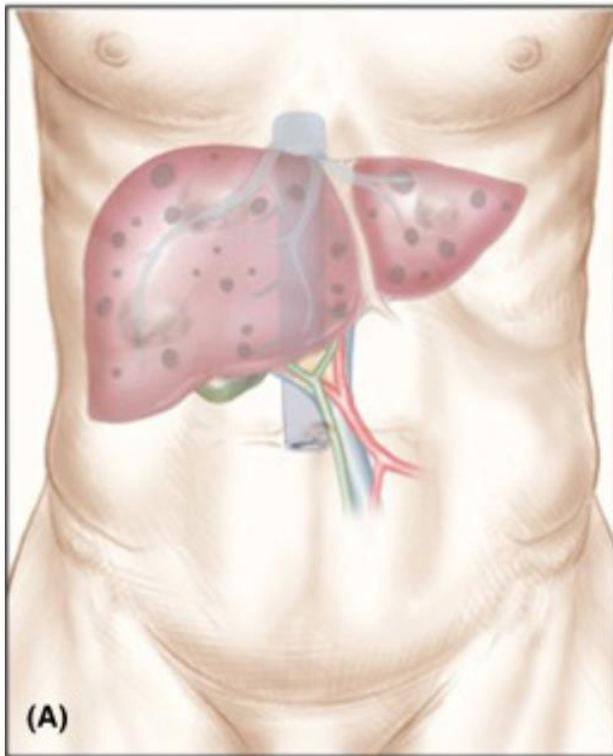


Monter en grade...



La greffe hépatique par coelioscopie

C'est une niche!
(6 patients et 1 chirurgien...)



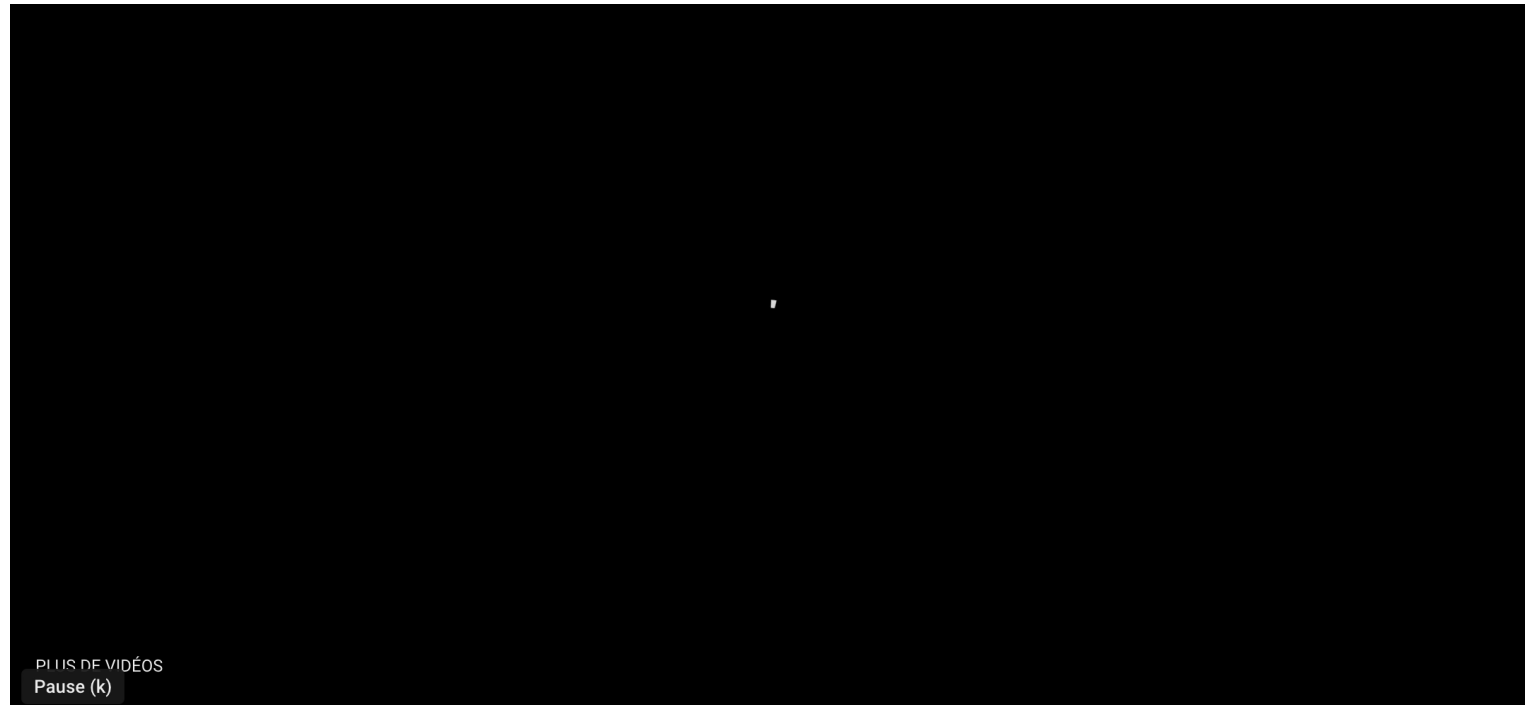
INTRODUCTION

PASSÉ

PRESENT

PERSPECTIVES

CONCLUSIONS



INTRODUCTION

PASSÉ

PRESENT



PERSPECTIVES

CONCLUSIONS

Le robot a des avantages

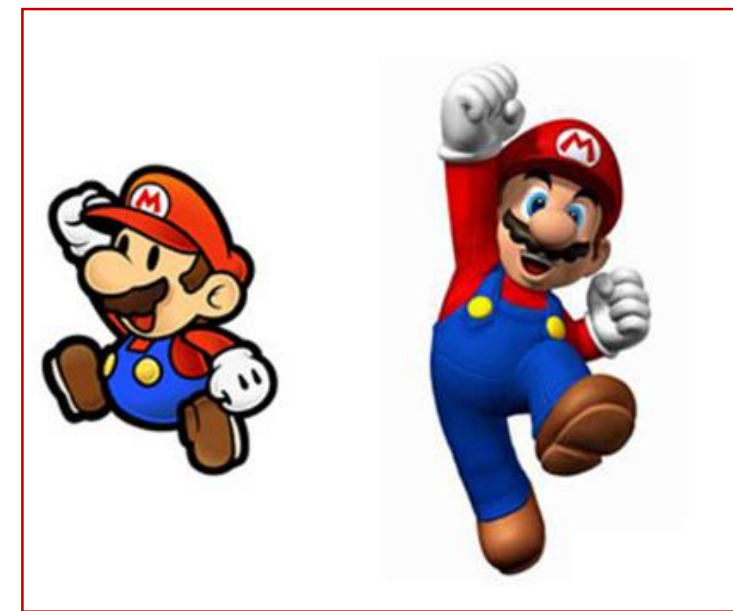
Instruments Articulés



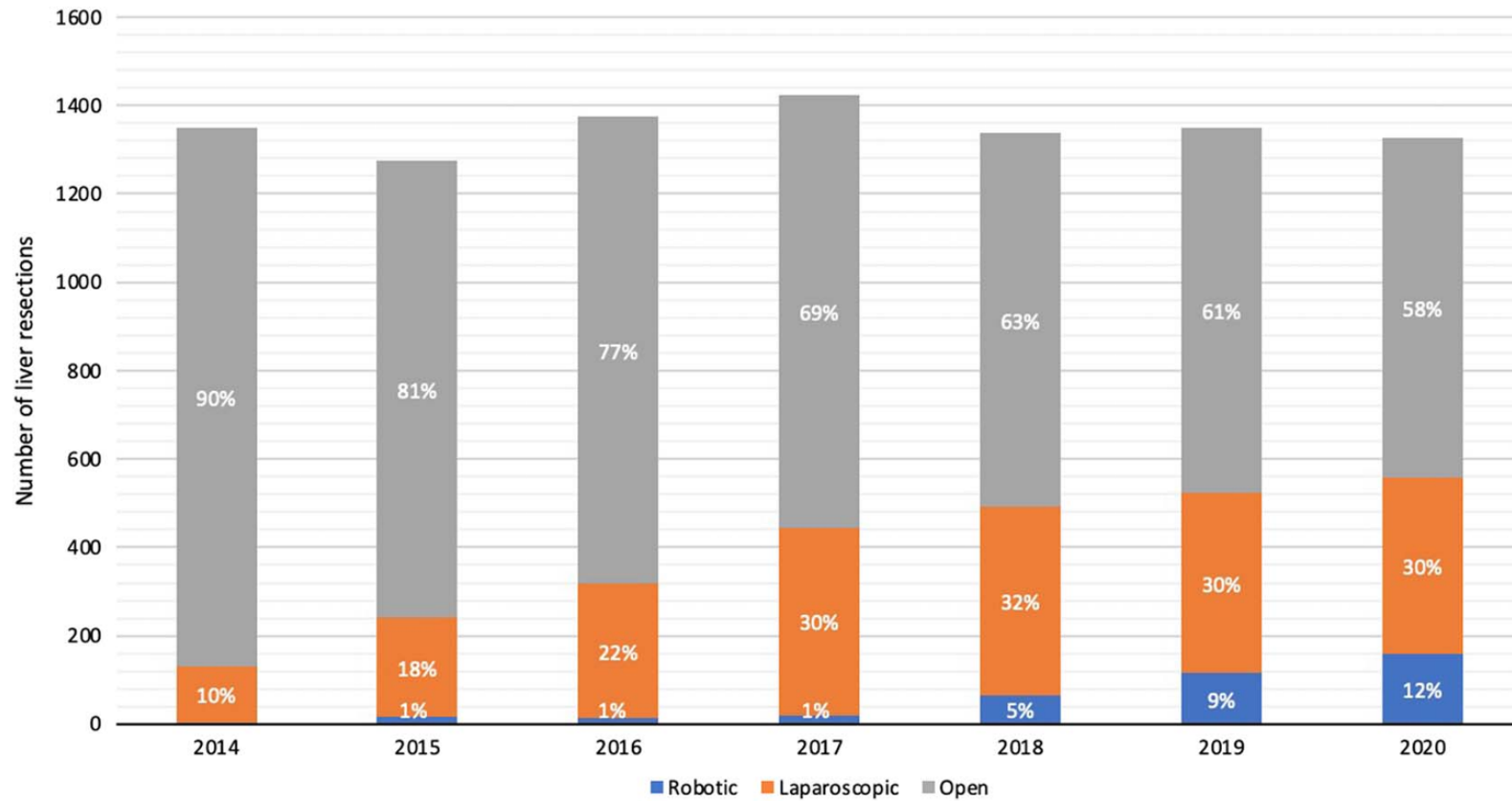
Stabilité



Magnification 3D

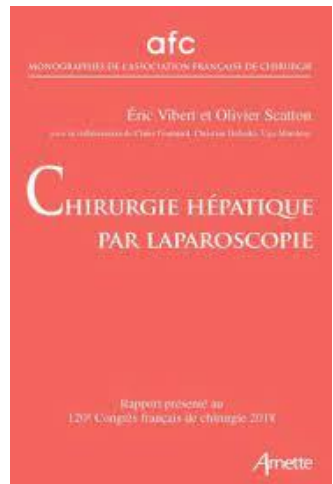


Montée en puissance timide...



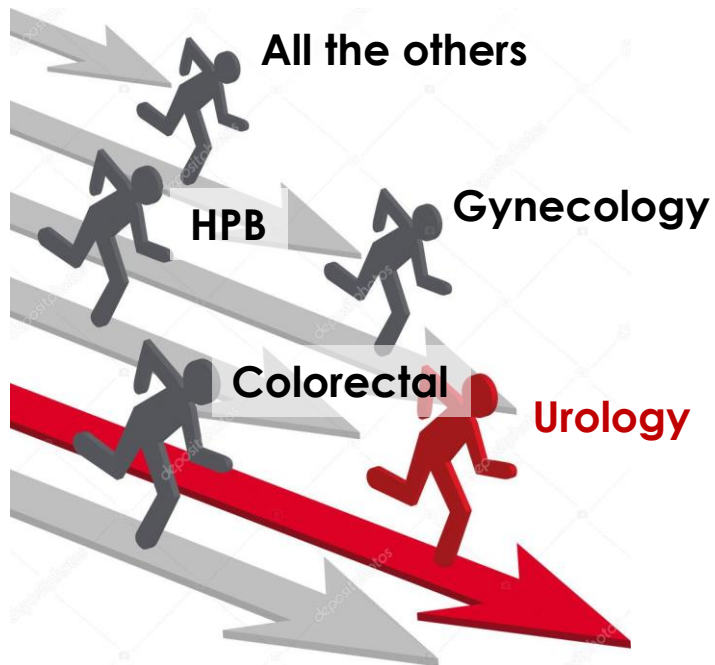
4.2%

2.3%

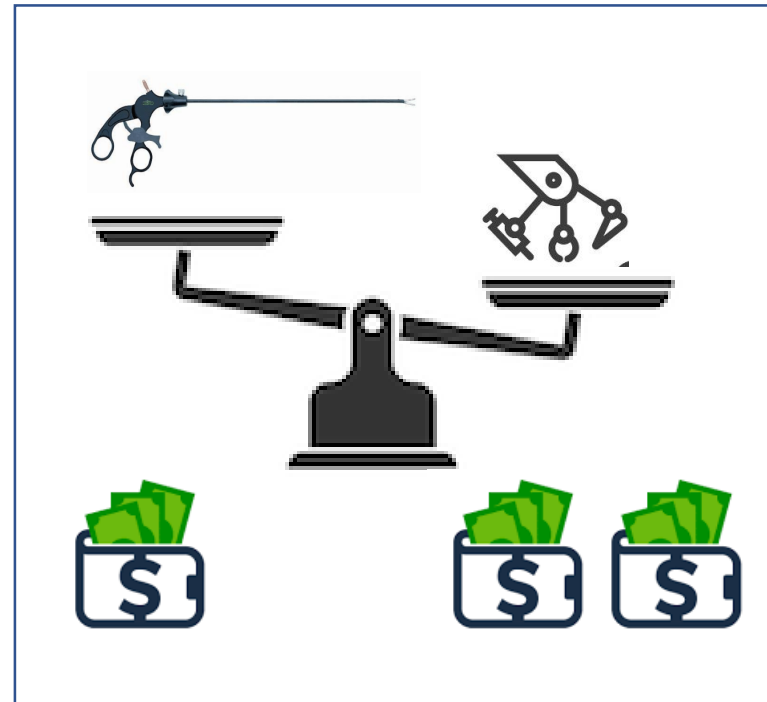


... à cause de 3 inconvénients

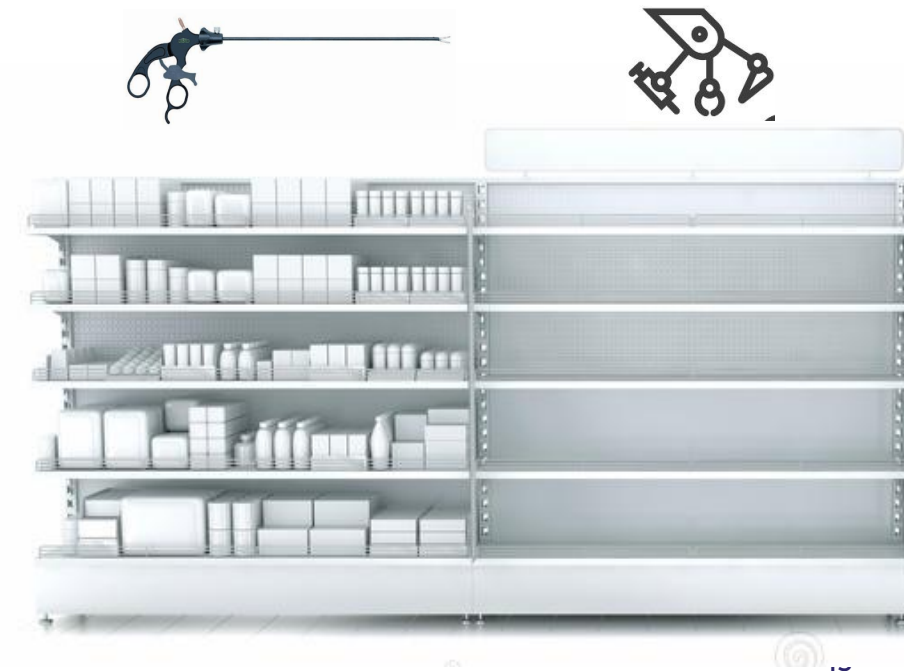
ACCÈS



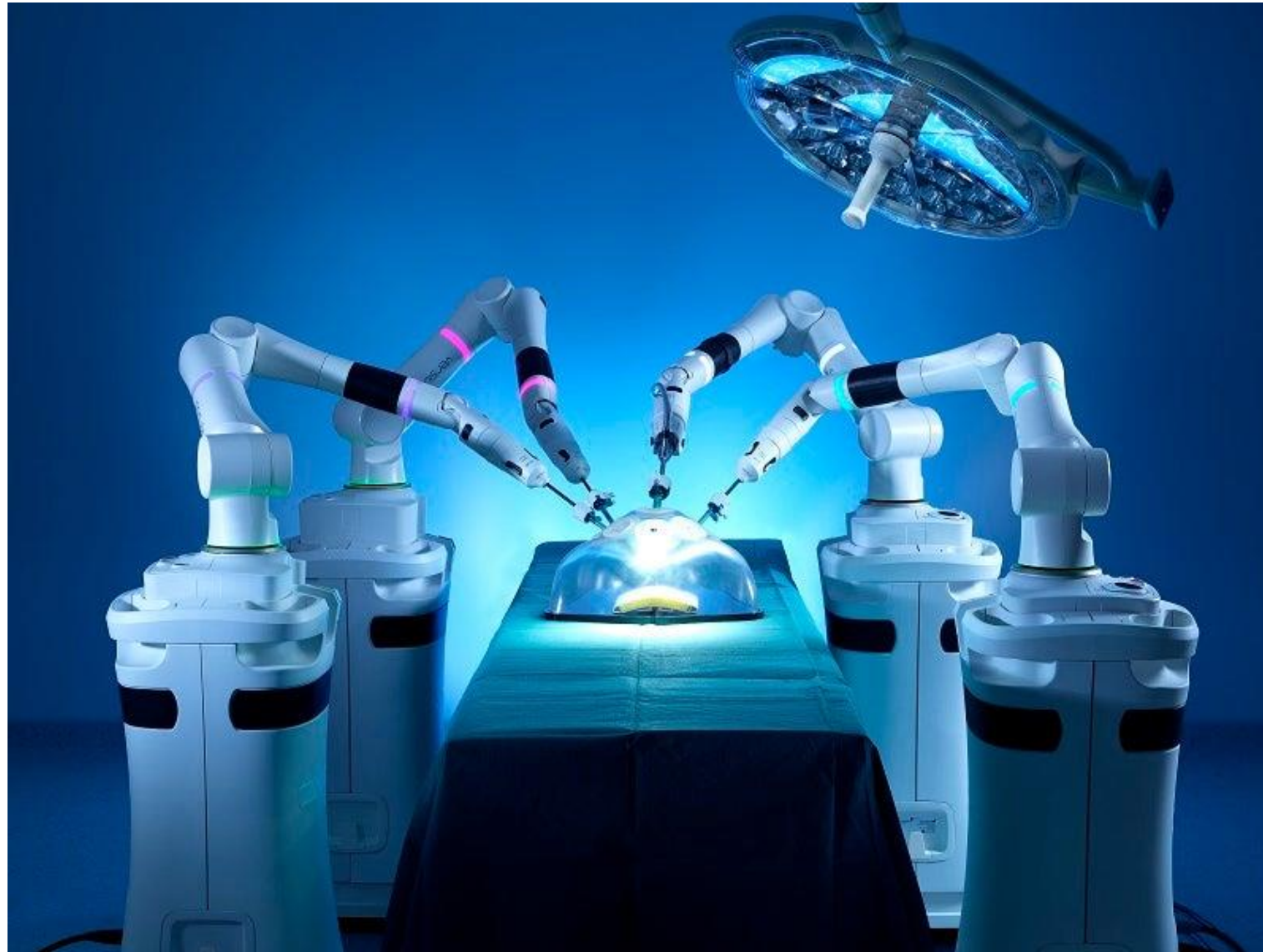
COÛT



MOINDRE CHOIX

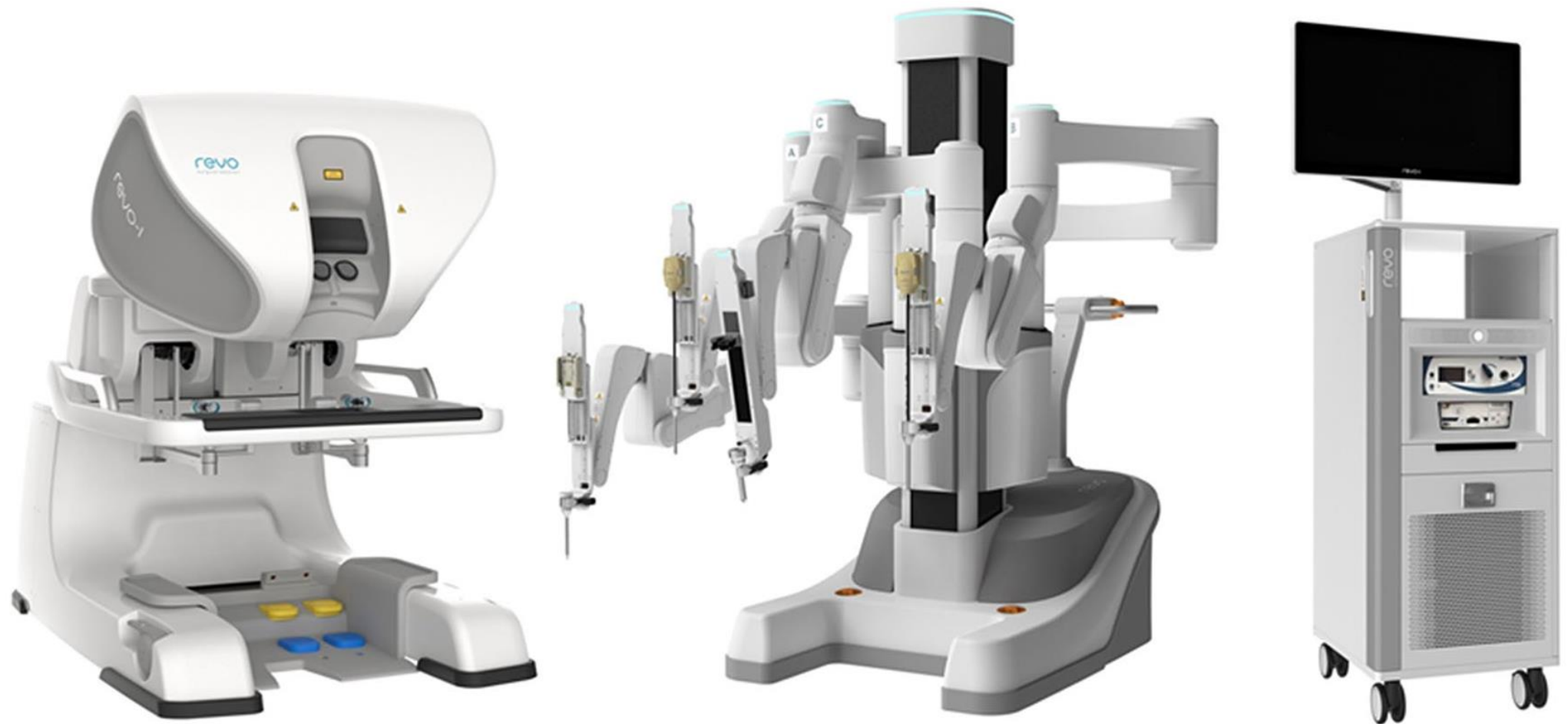












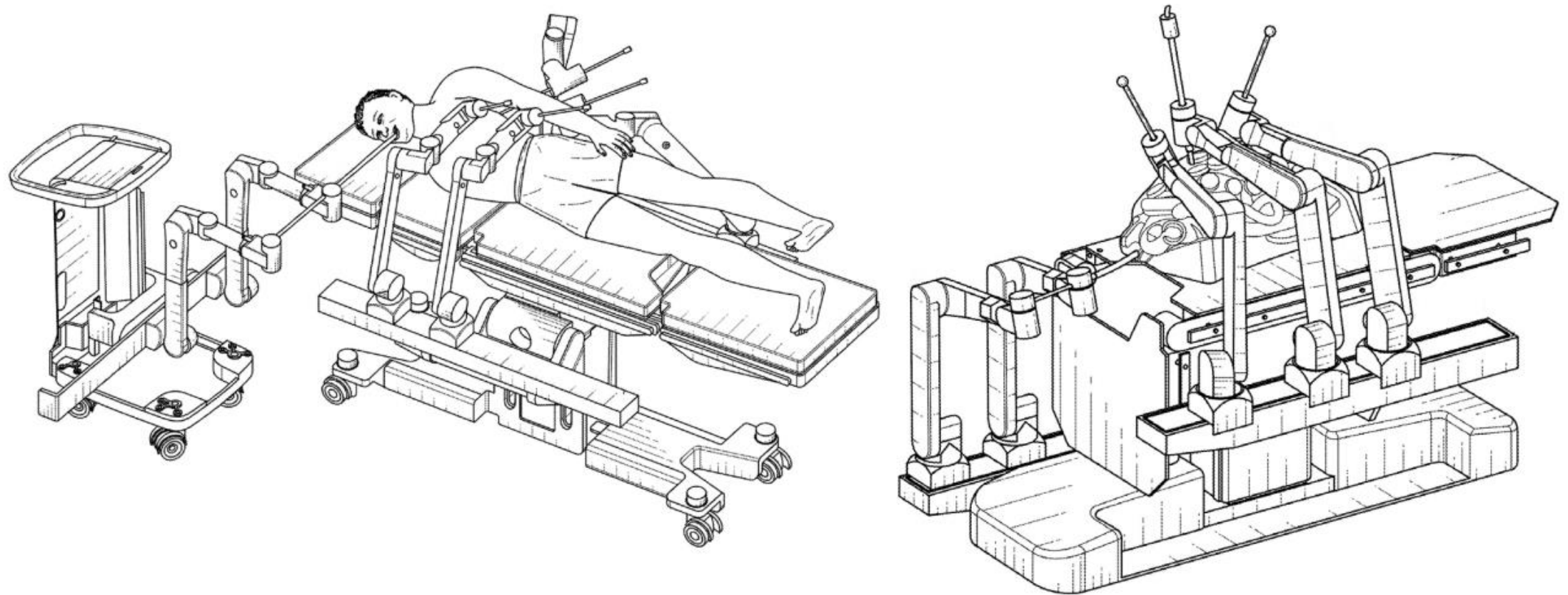


Figure 2. Schema of Ottawa (Johnson & Johnson) currently under development, with arms integrated into the operating table¹⁸

INTRODUCTION

PASSÉ

PRESENT

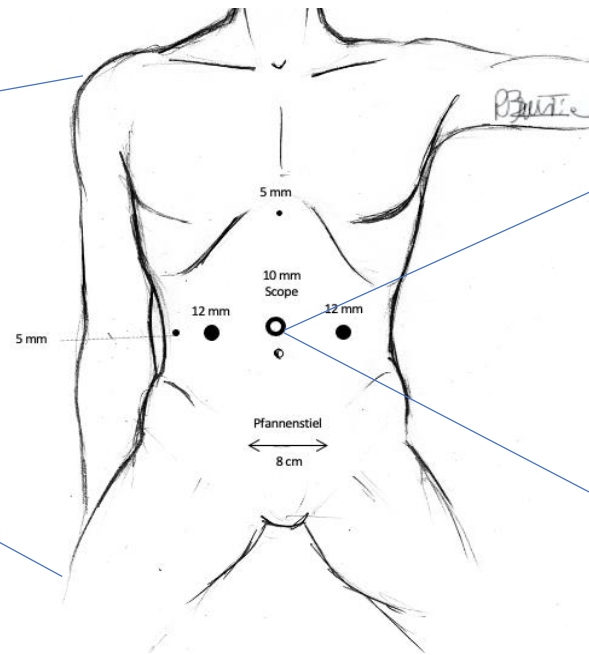


PERSPECTIVES

CONCLUSIONS

Tout est dans l'organisation

DEHORS



DEDANS

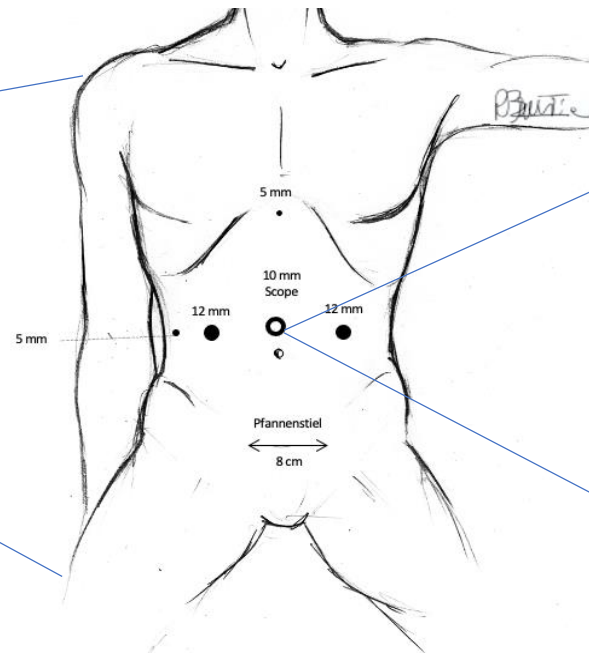




RECURRENCE des PROCEDURES: ENTRAINEMENT D'EQUIPE

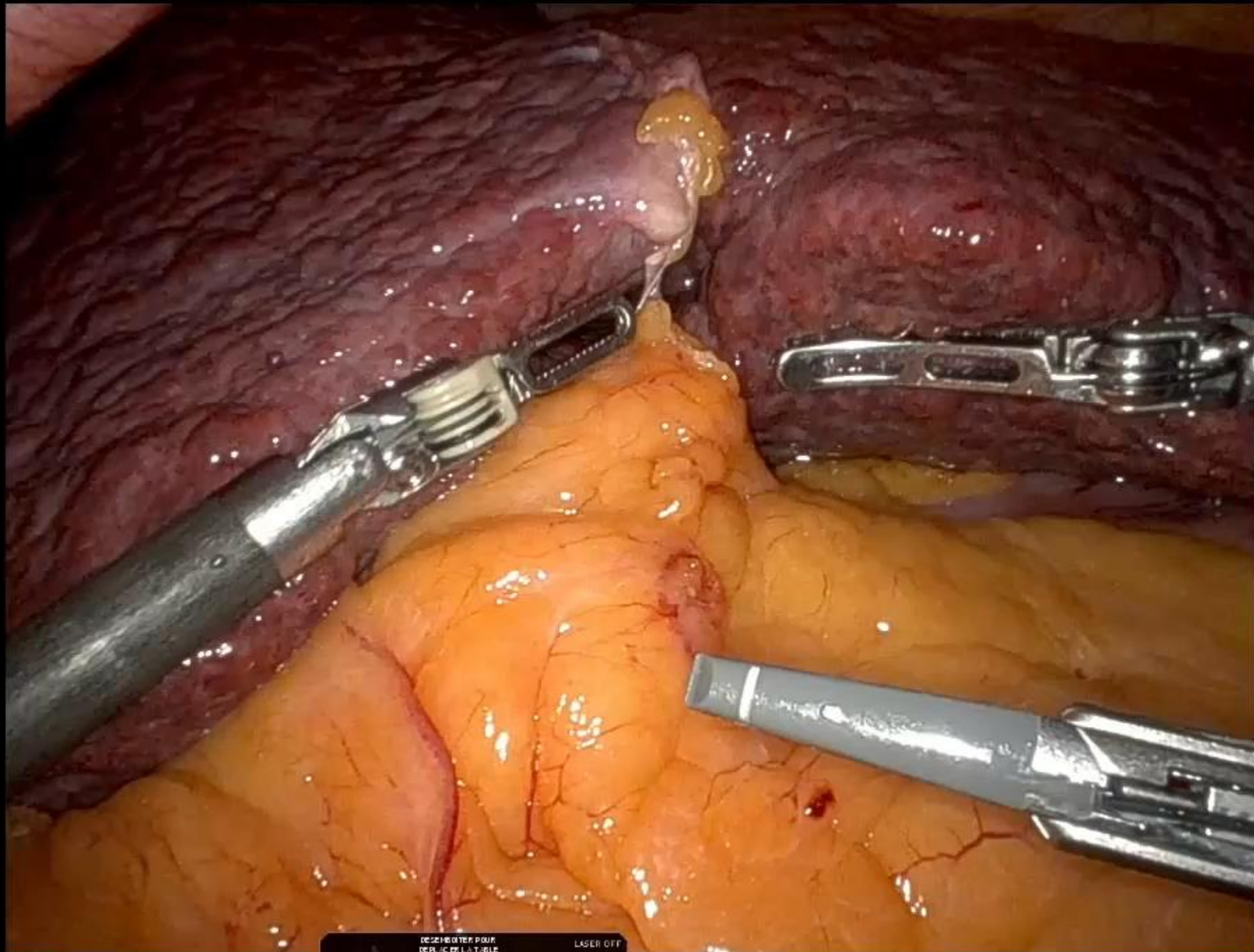
Tout est dans l'organisation

DEHORS



DEDANS





1 FENESTRATED BIPOLAR FORCEPS COAG

RECEIVER POUR REP. IC EN LAT. BLE LASER OFF 2 1x 30°

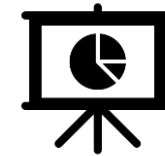
3 VESSEL SEALER EXTEND CUT BIPOLAR

4 TIP-UP FENESTRATED GRASPER

INTRODUCTION

PASSÉ

PRESENT



PERSPECTIVES

CONCLUSIONS



Durée opératoire

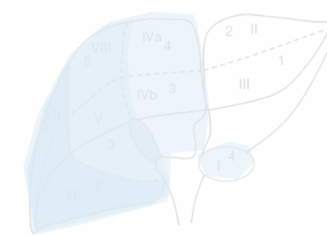
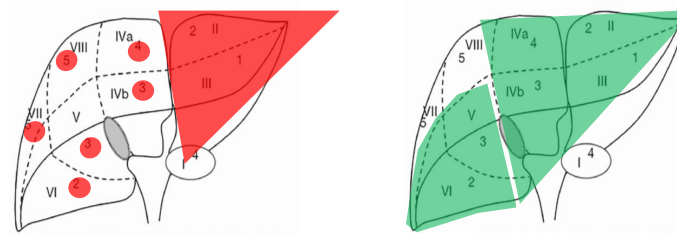
Taux de conversion

Durée de séjour

Morbidité

Coût

IMM I et II



Similaire ou augmentée

Similaire

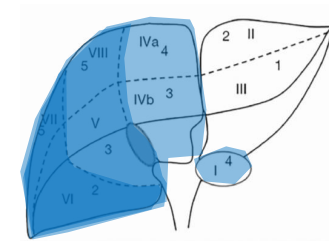
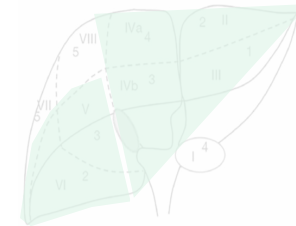
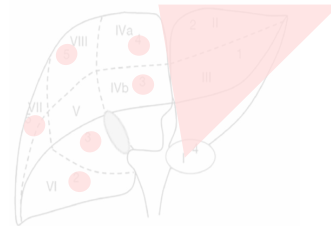
Similaire

Similaire

Supérieur



IMM III



Durée opératoire

Similaire

Taux de conversion

Moindre

Durée de séjour

Similaire

Morbidité

Similaire

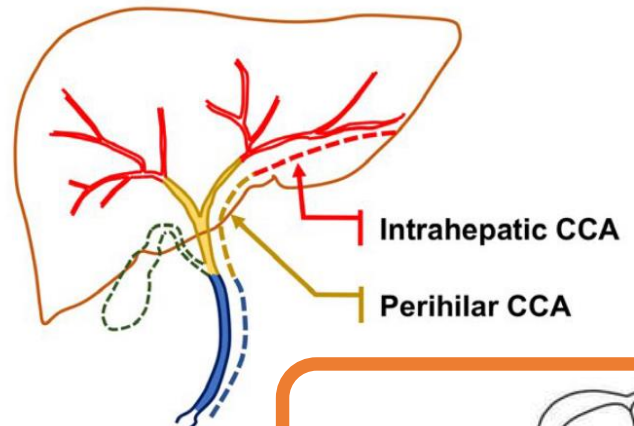
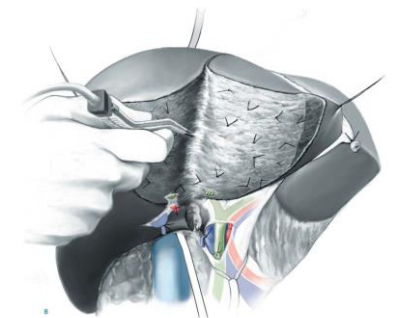
Coût

Similaire

Résultats oncologiques?



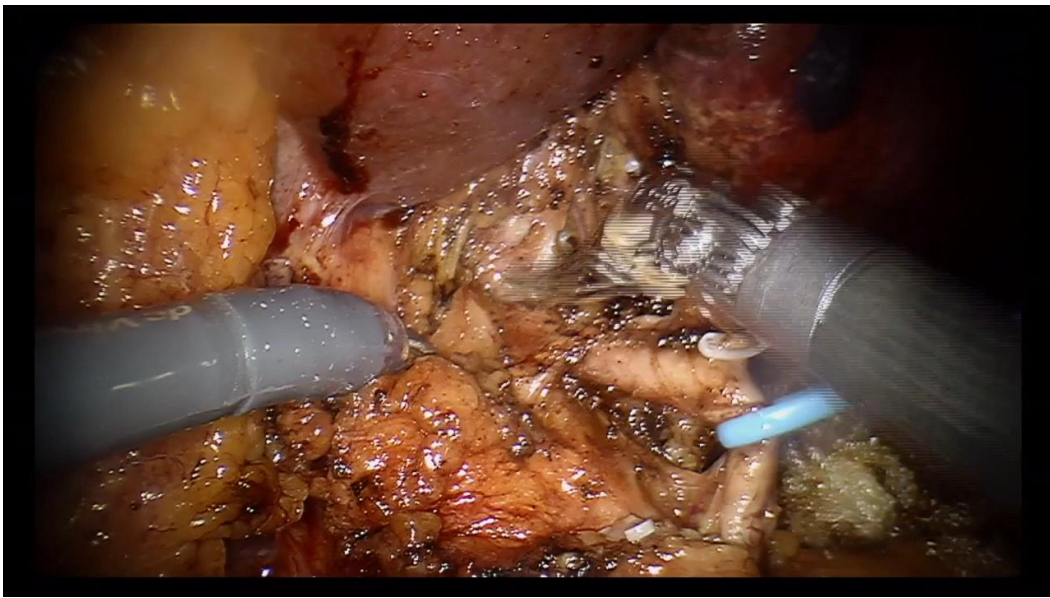
Au moins équivalents



N=6.9 (±5.8)

100%

N=7 (±6.6)



INTRODUCTION

PASSÉ

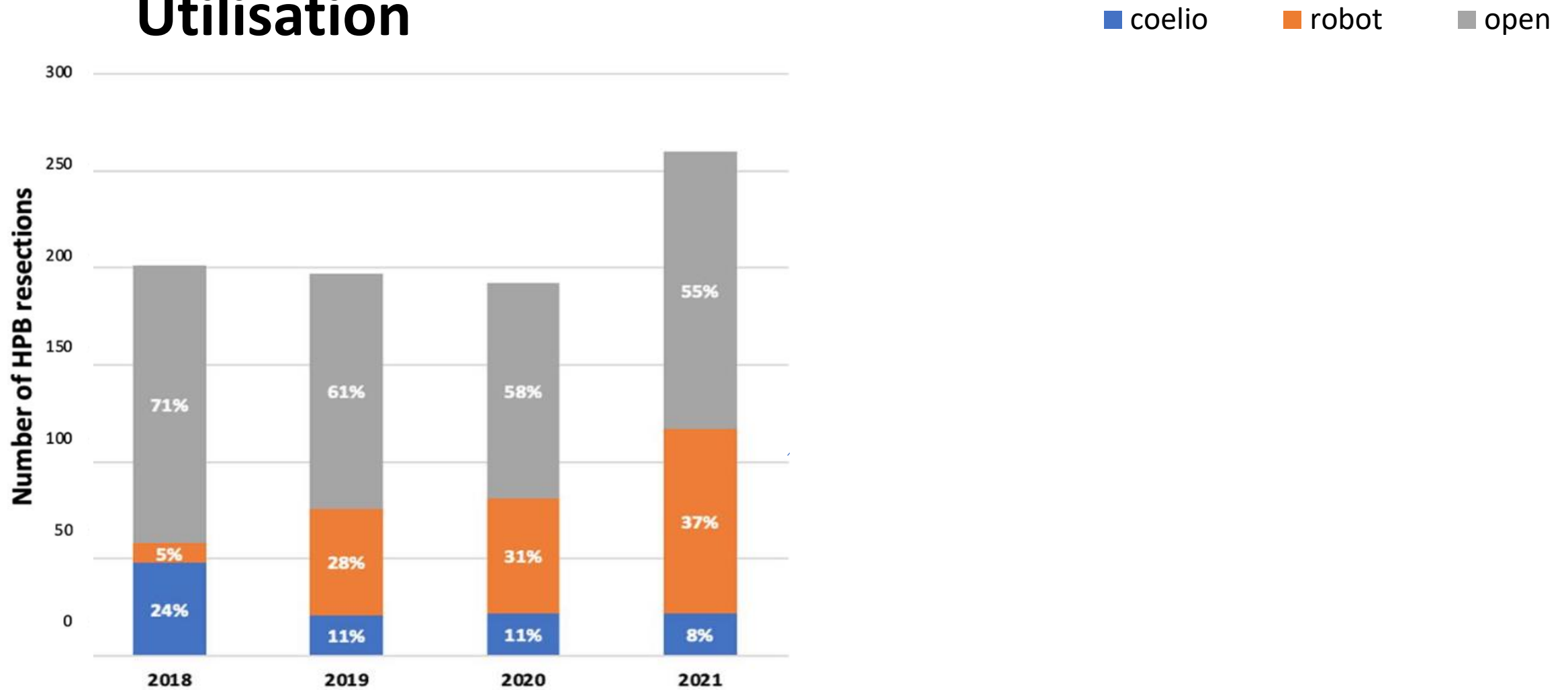
PRESENT



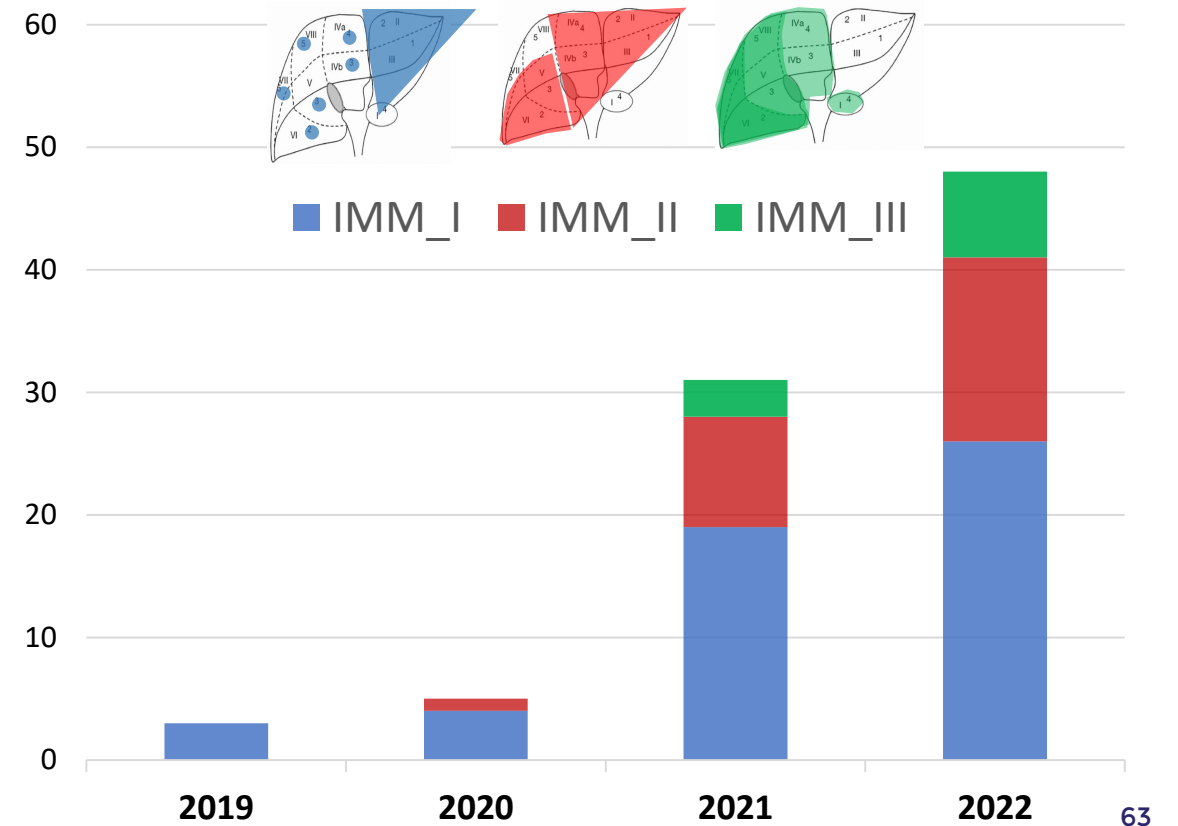
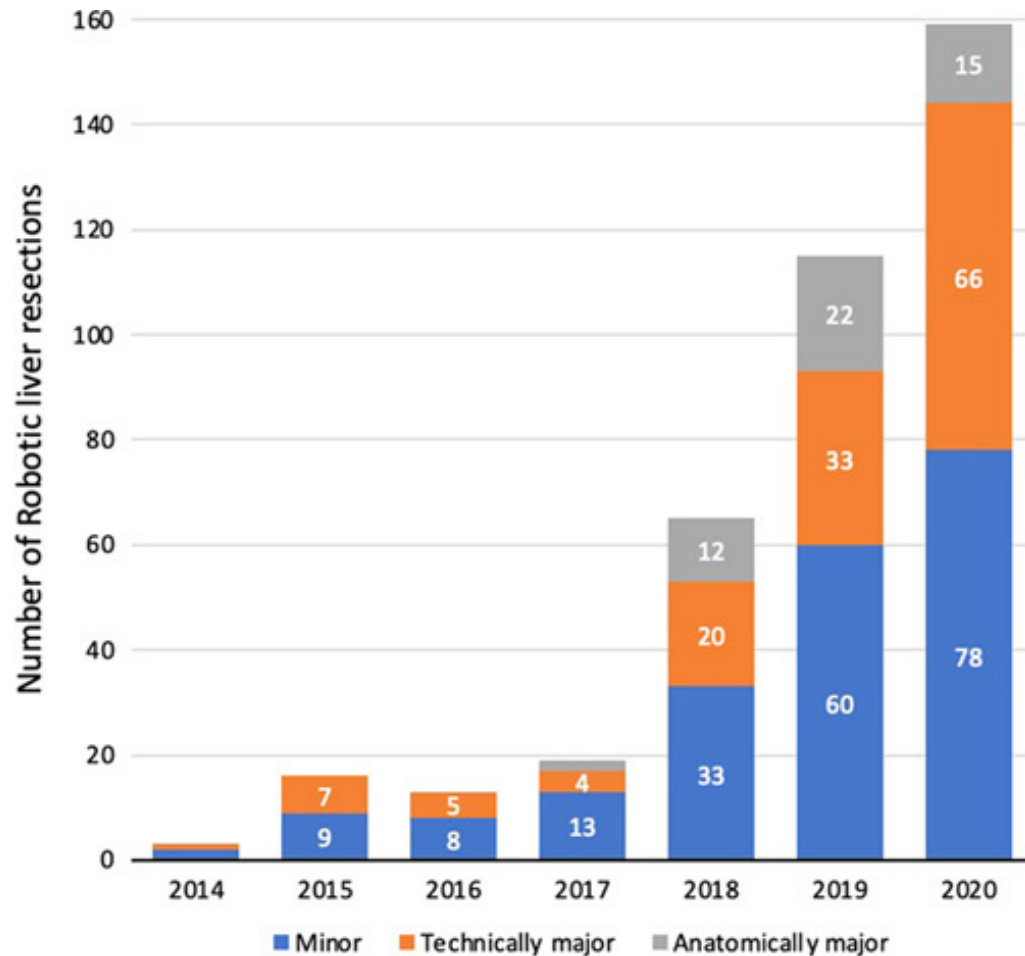
PERSPECTIVES

CONCLUSIONS

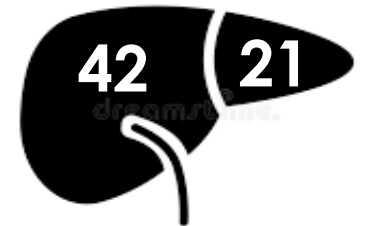
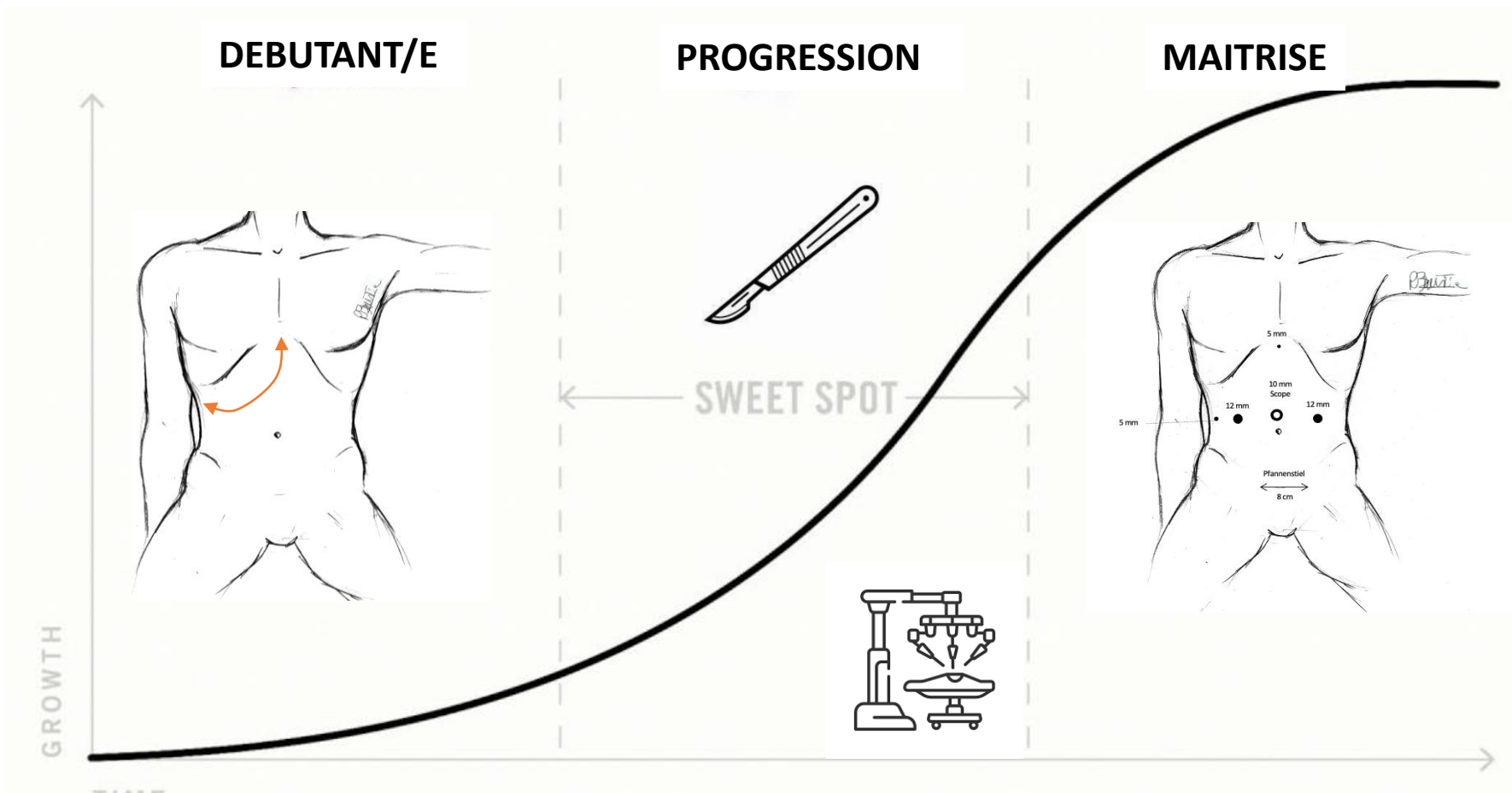
Utilisation



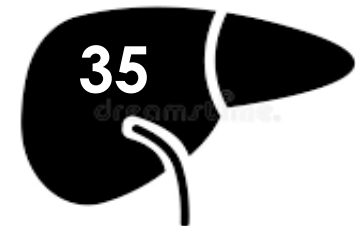
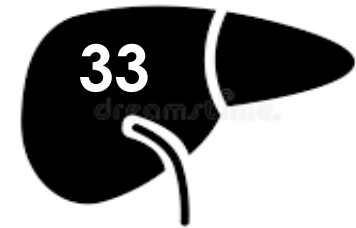
Complexité (Pays Bas)



Courbe d'apprentissage (conversion)



Expérience coelio préalable ? (Saignement, mL)



INTRODUCTION

PASSÉ

PRESENT

PERSPECTIVES

CONCLUSIONS

robot = coelio améliorée

Coelio: pas de limites, mais d'élite

Le robot c'est cher

Moindre conversion

Apprentissage rapide

(même sans coelio)

INTRODUCTION

PASSÉ

PRESENT

PERSPECTIVES

CONCLUSIONS



En cours

- LDLT totalement robot (donneur ET receveur)
- Nouvelle version Xi (Xii?)
 - Puissance calcul + IA?
 - Réalité augmentée
- Chirurgie à longue distance
 - Stabilité connexion 5G (6G?)



1ST INTERNATIONAL CONSENSUS
CONFERENCE ON ROBOTIC
HEPATO-PANCREATO-BILIARY
SURGERY



7 - 9
DECEMBER
2023

NOVOTEL
PARIS CENTRE
TOUR EIFFEL

A venir, la baisse des prix (et du gaspillage) et...



INTRODUCTION

PASSÉ

PRESENT

PERSPECTIVES

CONCLUSIONS

Puissance digitale +++

Téléchirurgie

Baisse des prix

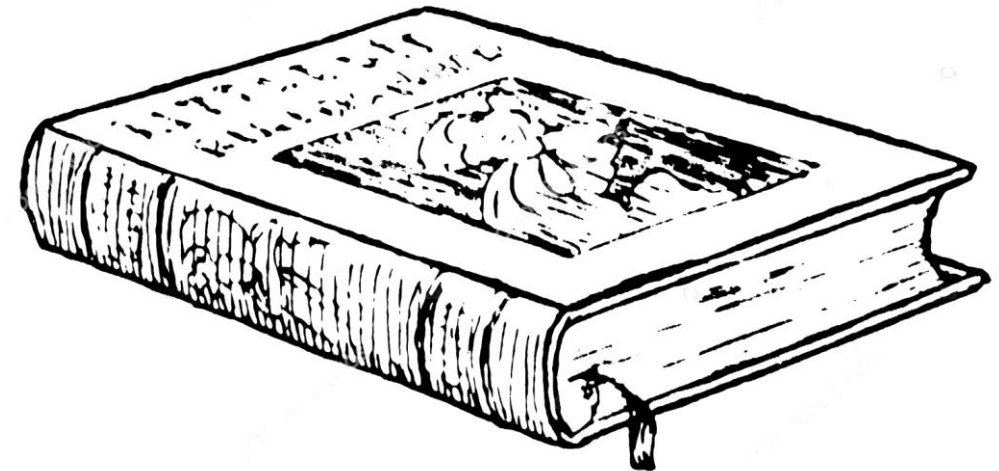
INTRODUCTION

DIAGNOSTIC

STRATEGIE

PERSPECTIVES

CONCLUSIONS



- Rien remplace les connaissances de base!
- Coelio, tout est possible
 - mais pas pour tous le monde (c'est difficile)
- Robot:
 - Démocratise la MILS même sans coelio!
 - Mais c'est plus cher
- Popularisation de la machine?

Série « Vie et mort du chirurgien »

La robotisation du chirurgien

Jeudi 8 juin 2023

▶ ÉCOUTER (57 MIN)



Service de Chirurgie Digestive et Hépatobilio-Pancréatique
GHU Henri-Mondor, Créteil

Unité Inserm U955, Equipe 18 « Pathophysiology and Therapy of Chronic Viral Hepatitis and Related Cancers » IMRB

72