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A detailed approach to robotic liver tumor resection

Kazunari Sasaki

Why do we need robots in liver resection??

	Robotic Liver Resection	Laparoscopic Liver Resection
Operative time		○
Blood loss	○	
Conversion rate	○	
LOS	○	
Cost		○

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Why do we need robots in liver resection??

A chronological review of 500 minimally invasive liver resections in a North American institution: overcoming stagnation and toward consolidation

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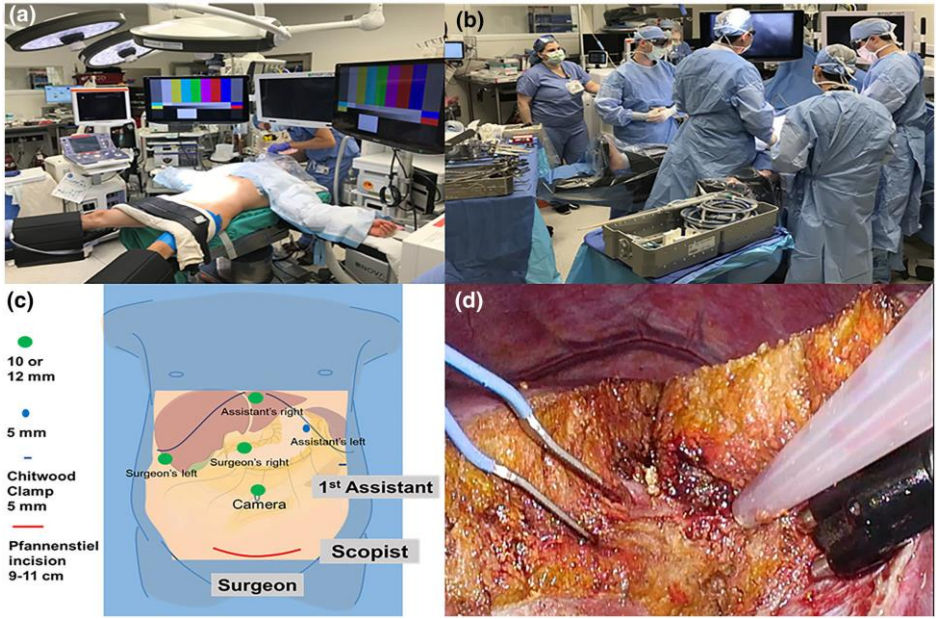

Scope: must be 3D

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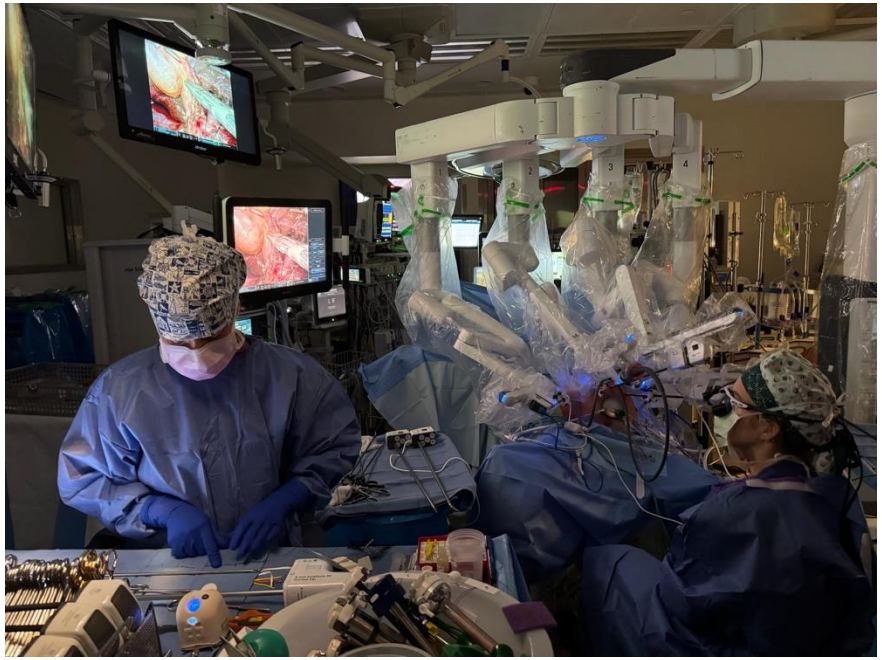
Patient position



Lithotomy position
Make knees as low as possible

Open one arm

Head up before docking Robot
Rotate before docking Robot

Assistant sits between legs

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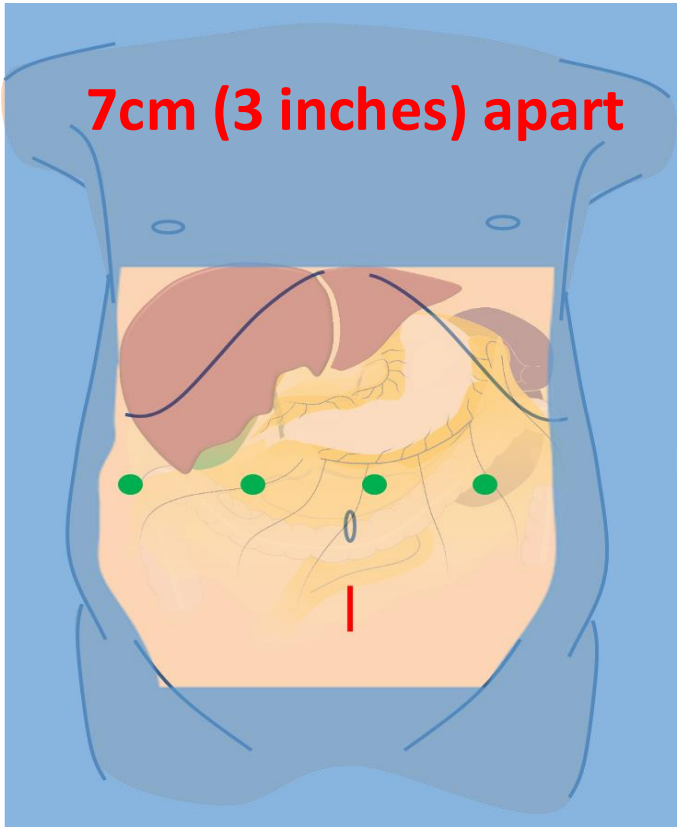
Robot ports and assistant port setting



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Contribution for good parenchymal transection

- Parenchymal transection method
- Set up (Lift/compress)
- Bleeding control
- Anatomy understanding

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Tool for parenchymal transection

Ultrasonic energy instruments

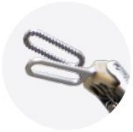
Suction irrigation

Vessel sealer extend

Small head vessel sealer

bipolar cautery instruments

Maryland bipolar forceps



Fenestrated bipolar forceps

Curved bipolar dissector

Micro bipolar forceps

Long bipolar grasper

Force bipolar

Monopolar curved scissors
(Hot shears)

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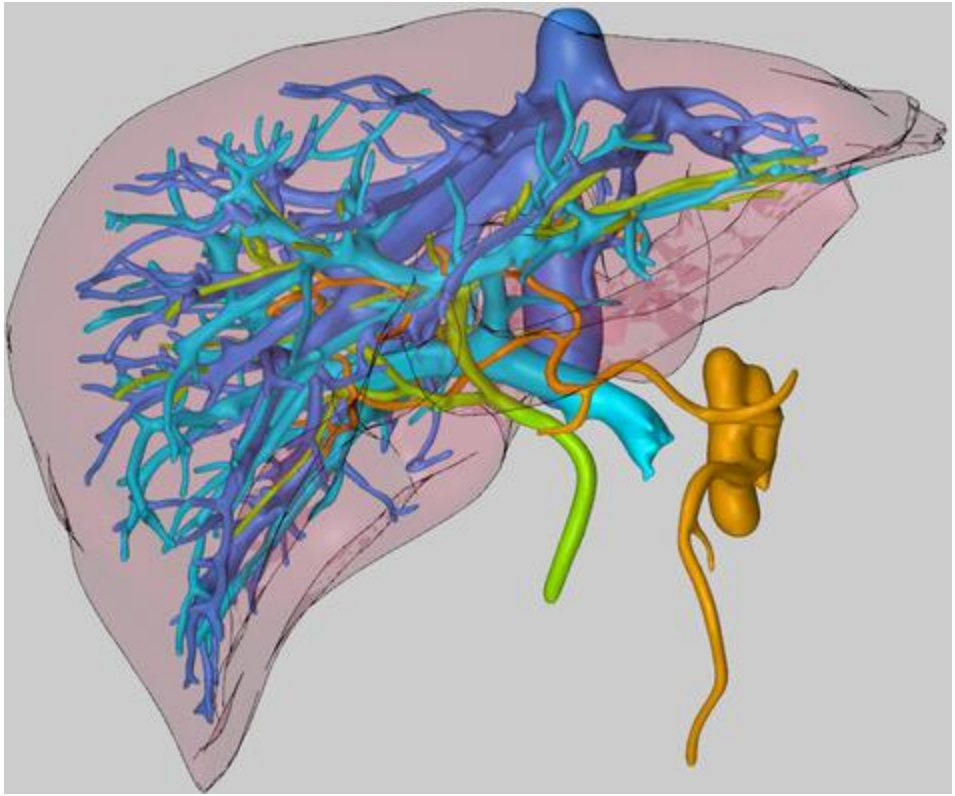
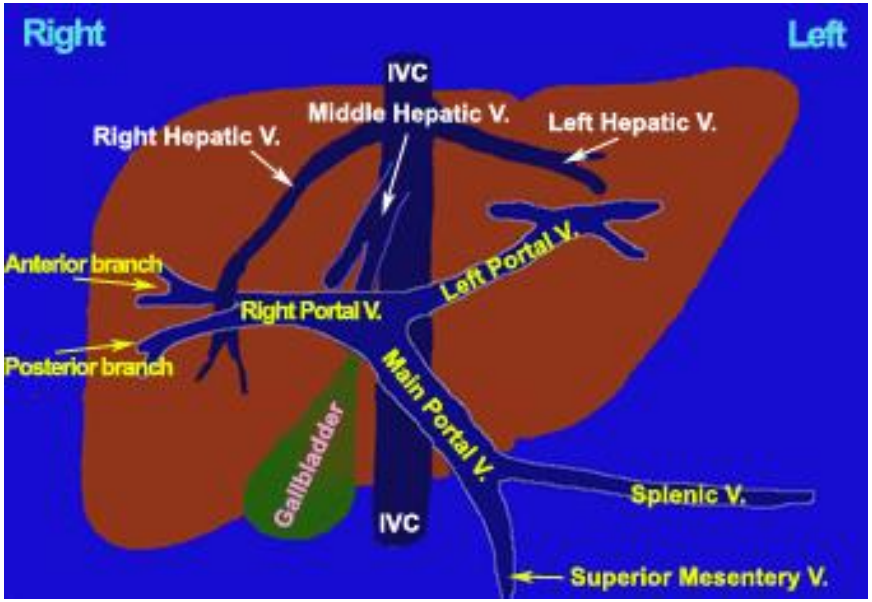
Think simple





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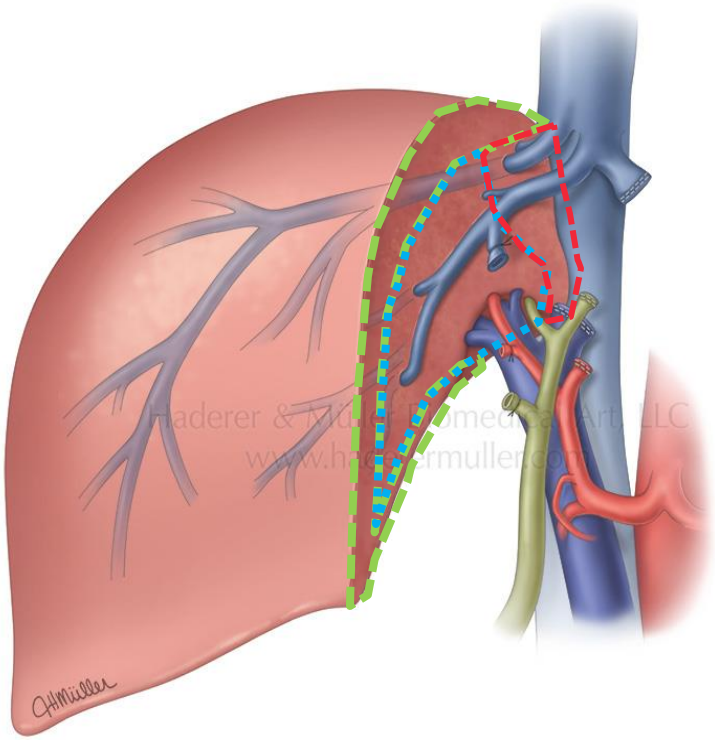
Parenchymal Transection in Formal Lobectomy



First :1/3: Everybody can do well

Middle: 1/3: Smooth bloodless transection is the key

=> Today's focus

Last: 1/3 : Even experts make bleeding

⇒ Depend on middle 1/3

lifting up liver

anatomy understanding

speed

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Advantage of Robot in parenchymal transection

Difficult to book case/get bed side assistant

Longer instrument/gauze exchange time

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Ultrasonic energy instruments

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