LAPAROSCOPIC SPLENECTOMY

Catherine HUBERT
Jean-François GIGOT
Benoît NAVEZ

Division of Hepato-Bilio-Pancreatic Surgery
Department of Abdominal Surgery and Transplantation
Saint-Luc University Hospital
Université Catholique de Louvain (UCL)
1200 - BRUSSELS – Belgium

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INDICATIONS OF SPLENECTOMY

1. **ELECTIVE SPLENECTOMY**

* ITP :	57 %
* congenital spherocytosis :	12 %
* hemolytic anemia :	10 %
* Hodgkin's disease :	5 %
* AIDS-related thrombocytopenia :	3 %
* lymphoma :	3 %
* leukemia :	2.5 %

2. SPLENECTOMY IN EMERGENCY:
   - Traumatisms

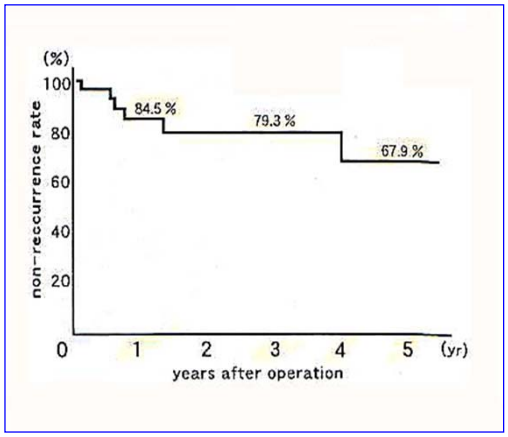
INDICATIONS

Idiopathic Thrombocytopenic Purpura (ITP)

- Immune: antibodies to platelets membrane glycoprotein
- **Increased peripheral platelets destruction (spleen, liver)**
  →Bleeding
  -->low risk if P.S. >50.000/High risk if P.S. <10.000
- **Adults:** **-chronic evolution> 90%**
  -spontaneous remission <5%
  -mortality from hemorrhage: 2% -5%
  -spontaneous hemorrhage if platelets count<20000/mm3

Children: - acute onset
-reversible in > 80 % at 2 months : late indication of splenectomy
-spontaneous remission or after medical treatment > 1 year
-rare chronic evolution < 10 %
-mortality from haemorrhage < 1 %

Clinical response (ITP) after laparoscopic splenectomy

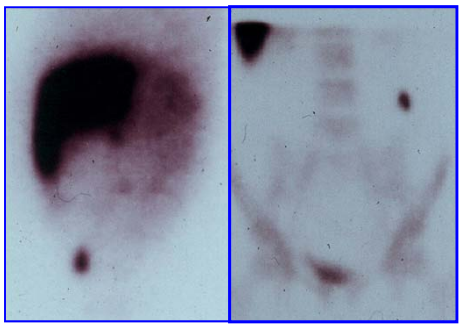


84.5 % at 1 year
79.3 % at 3 years
67.9 % at 5 years

TANOUE et al. Am J Surg 1999 ; 177 : 222-226

ITP Relapse

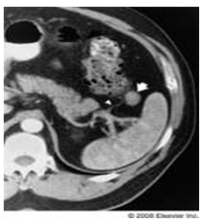
Splenosis



Residual accessory spleen

PREPARATION

- **ITP→ looking for accessory spleen(10-30%) (CT scan)**



- **Vaccination: -Pneumococcal**
  -Haemophilus Influenzae
  - Meningococcal
- **Platelets, packed cells**

DEBATABLE INDICATIONS

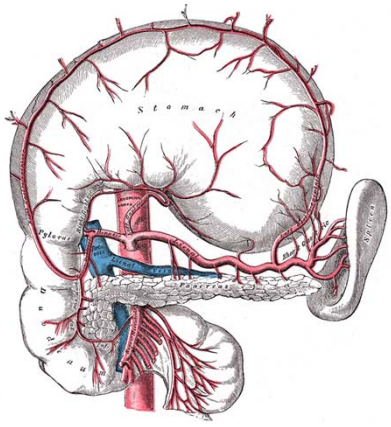
- Malignant hematologic diseases
- Huge splenomegaly (> 25 cm)
- Malignant splenic tumor
  - . pericapsular inflammation
  - . large lymp nodes at the splenic hilum

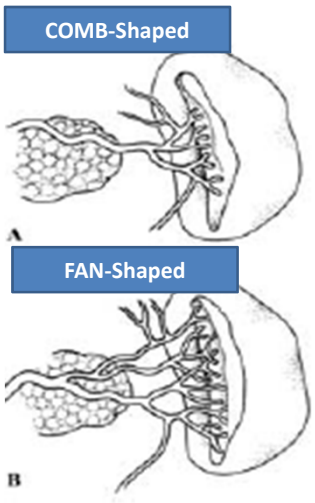
Difficulties
- Technical challenge
- Splenic mobilization
- Safe access to the splenic hilum
- Increased risk of bleeding
- Extraction

Splenic volume (gr)	Conversion	
1000 - 2000	7 %	
2000 - 3000	33 % *	P<0.05
> 3000	75 % *	

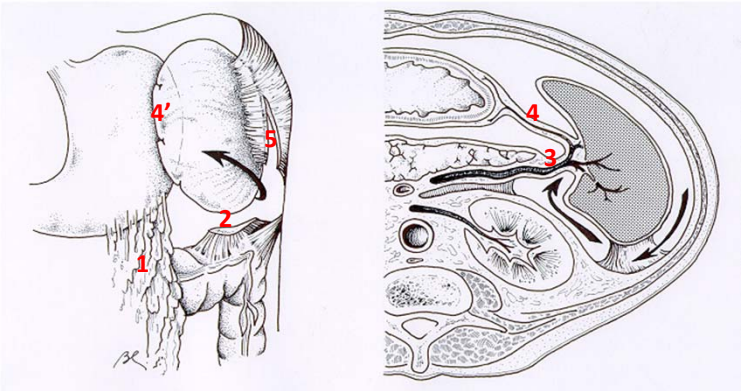
TARGARONA et al. 1998

Vessels of the spleen





Attachment of the spleen

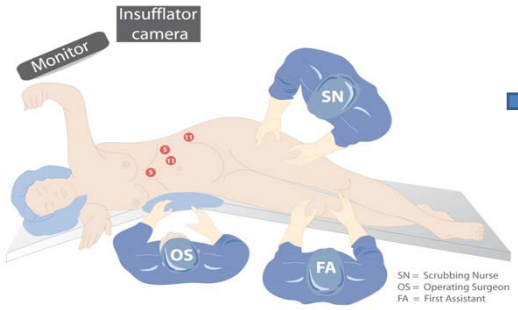


1. greater omentum
2. splenocolic ligament
3. pancreatosplenic ligament
4. gastrosplenic ligament
4'. short gastric vessels
5. phrenosplenic ligament

Conditions for a safe operation

1. Expert laparoscopic surgeon
2. Precise surgical technique
3. Careful vascular control (! bleeding)
4. "Stand-by" for conversion to laparotomy

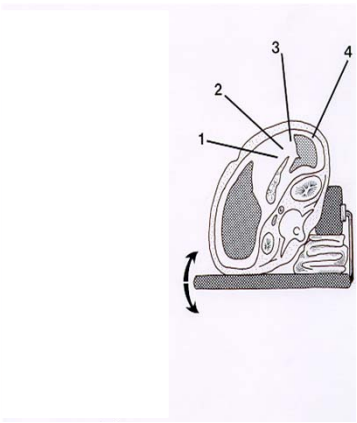
PATIENT POSITION

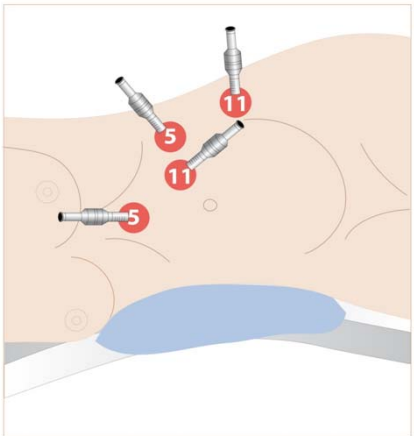


45 degree right semi-lateral

Or -Dorsal decubitus
-Complete lateral decubitus

PORTS PLACEMENT





OPERATIVE STEPS

1. lowering the splenocolic ligament
2. mobilizing and lifting up the lower pole of the spleen
3. division of the lateral peritoneal reflection of the spleen
4. dissection of the lower part of the gastrosplenic ligament
5. dissection of the splenic hilum
6. division of the upper part of the gastrosplenic ligament and the short gastric vessels

CONVERSION

Conversion should always be considered as a possible option in order to make the procedure as safe as possible.

* lack of surgeon's experience
* **intraoperative bleeding** :hilar bleeding, diffuse blood oozing …
* dense adhesions
* large splenomegaly
* severe obesity
* technical difficulties :
  - difficult mobilization of spleen
  - difficult manipulation of spleen
  - no work space

COMPLICATIONS

Local complications:
- Bleeding (2-6%)
- Venous thromboembolism :Splenic/ Portal thrombosis (5-20%)
- Pancreatic complications (pancreatitis, fistulas): 3%

General complications:
- pulmonary atelectasis:4%

Long term complications:
- Severe sepsis (encapsulated bacterias):0,2-0,5%

Mortality: 0,6%

IRLSS, Surg Endosc 2006

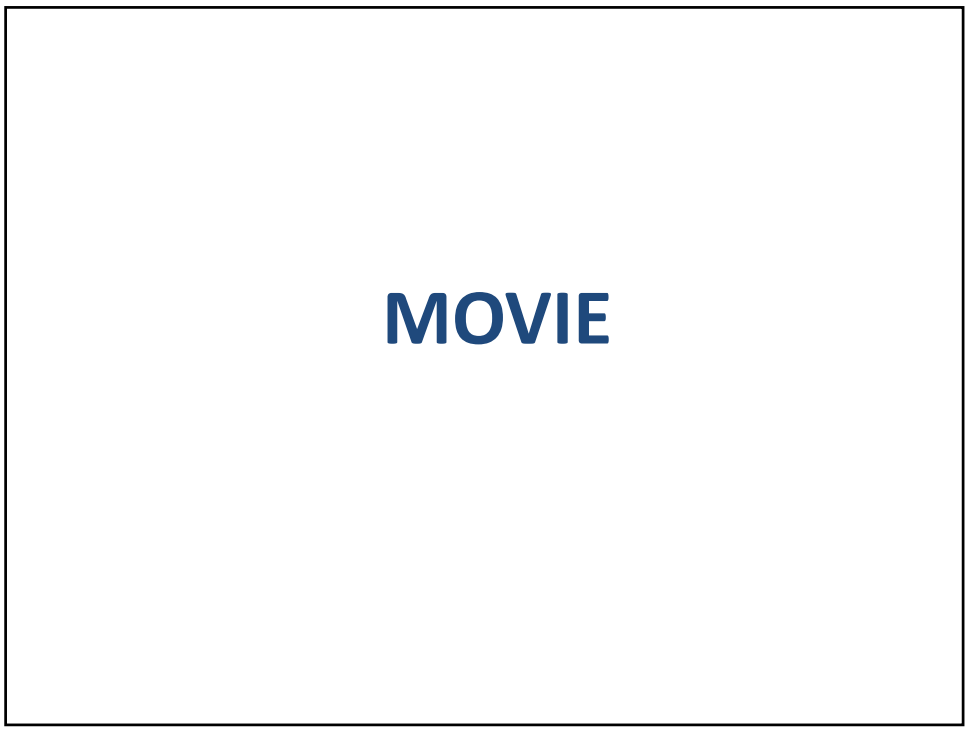
Peri-operative Results

Meta analyse (n=2940) comparing OS (821) and LS(2119)

	Laparoscopic splenectomy	Open splenectomy	p
Operating time (min)	180	114	<0,001
POHS (D)	3,6	7.2	<0,001
Accesory spleen identified (%)	11	11	NS
Complication rate (%)	15.5	26.6	<0,001
Mortality rate (%)	0.6	1.1	NS

Lower morbidity: less wound infection, pulmonary complications, sepsis in LS
More hemorrhagic complications in LS

Winslow et al., Surgery 2003


MOVIE