



Diagnostic approach in a patient with thrombosis of the portal venous axis

Pierre-Emmanuel RAUTOU

Inserm U970, PARCC@HEGP, Paris

Hepatology, Hôpital Beaujon, Clichy, France

pierre-emmanuel.rautou@inserm.fr

Nothing to disclose

Diagnostic approach in a patient with thrombosis of the portal venous axis (PVT)

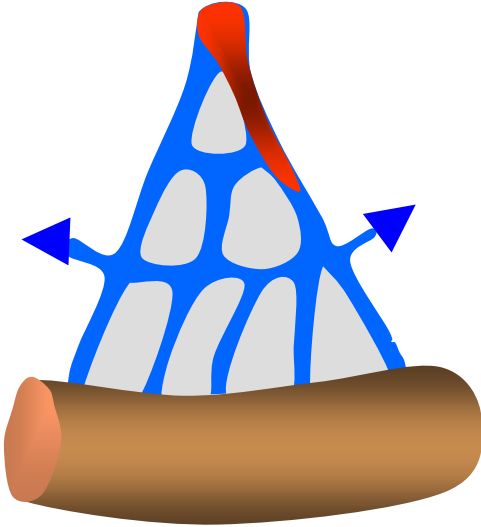
- Be sure of the diagnosis
- Is there a complication?
- Is there a risk factor for PVT?

Diagnostic approach in a patient with thrombosis of the portal venous axis (PVT)

- Be sure of the diagnosis
- Is there a complication?
- Is there a risk factor for PVT?

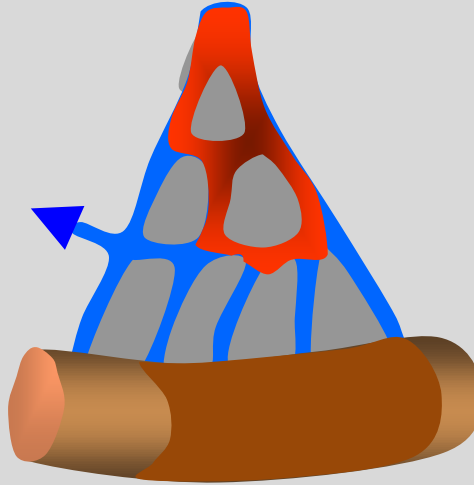
PVT: symptoms

Uncomplicated
Acute PVT



Abdominal Pain
System. Inflamm.

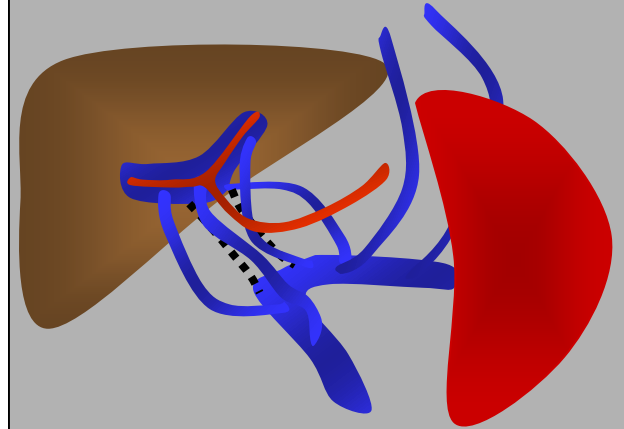
Intestinal
Ischemia



Pain, Ascites
Organ failure

PVT: symptoms

Chronic PVT



Bleeding
Encephalopathy
Cholangiopathy

PVT: diagnosis

- Doppler-ultrasonography:
 - Absence of flow within the portal vein
 - Hyperechoic thrombus in the portal lumen
- **Contrast enhanced CT-scan ++**
 - Diagnosis
 - Extension
 - Complication
 - Local factor

Acute PVT diagnosis

No enhancement



Portal phase



No collaterals

Plessier, J Hepatol 2012
Plessier, Hepatology 2009

Chronic PVT diagnosis



Diagnostic approach in a patient with thrombosis of the portal venous axis (PVT)

- Be sure of the diagnosis

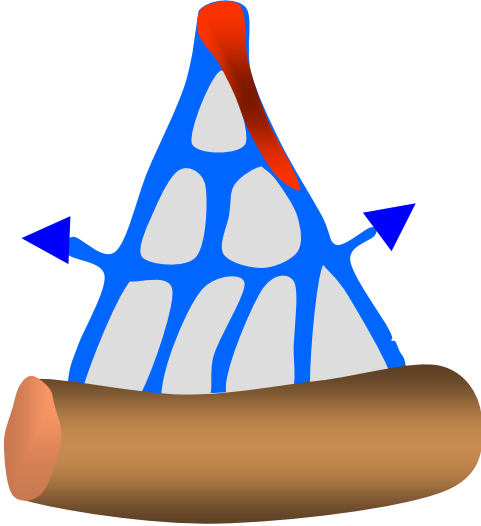
- Is there a complication?

Intestinal ischemia
Portal cholangiopathy

- Is there a risk factor for PVT?

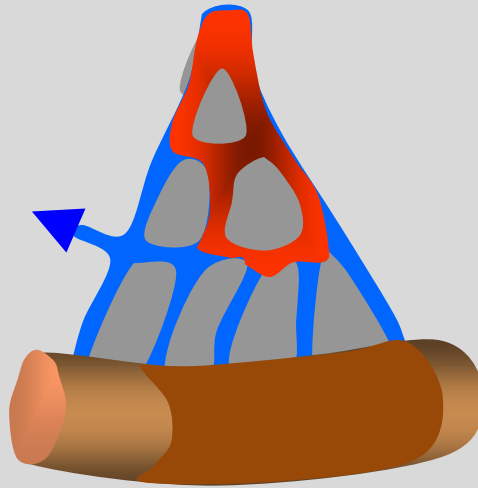
Intestinal ischemia

Uncomplicated
Acute PVT

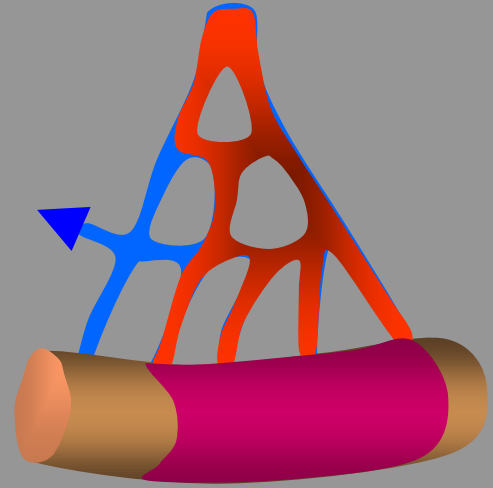


Abdominal Pain
SIRS

Intestinal
Ischemia

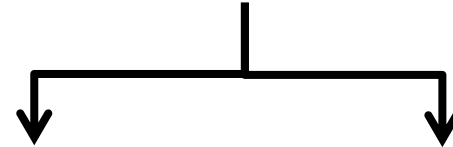


Intestinal
necrosis



Risk factors for intestinal necrosis

Superior Mes. Vein thrombosis



	No resection N=46	Resection N=11	P =
General prothrombotic factor	44%	44%	0.91
Local factor	20%	30%	0.08
Diabetes	9%	27%	0.02

Identification of intestinal necrosis

Acute intestinal ischemia (n=67)

arterial 2/3
venous 1/3

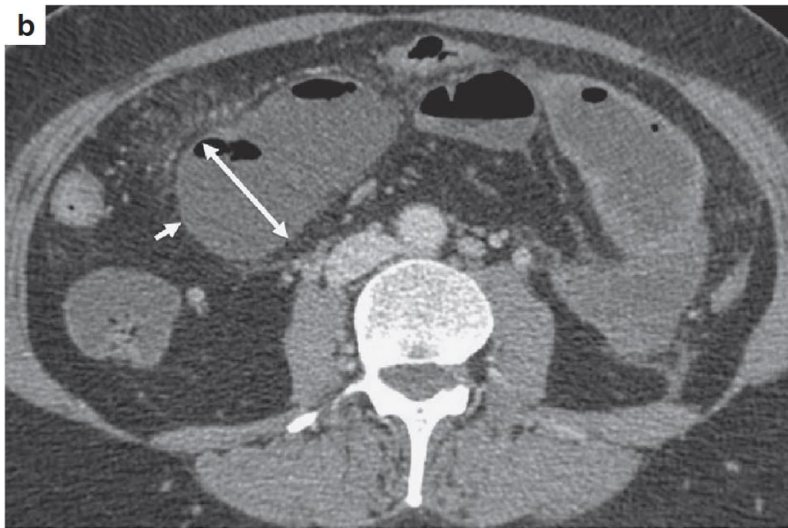
Transmural necrosis
(n=23)

No transmural necrosis
(n=44)

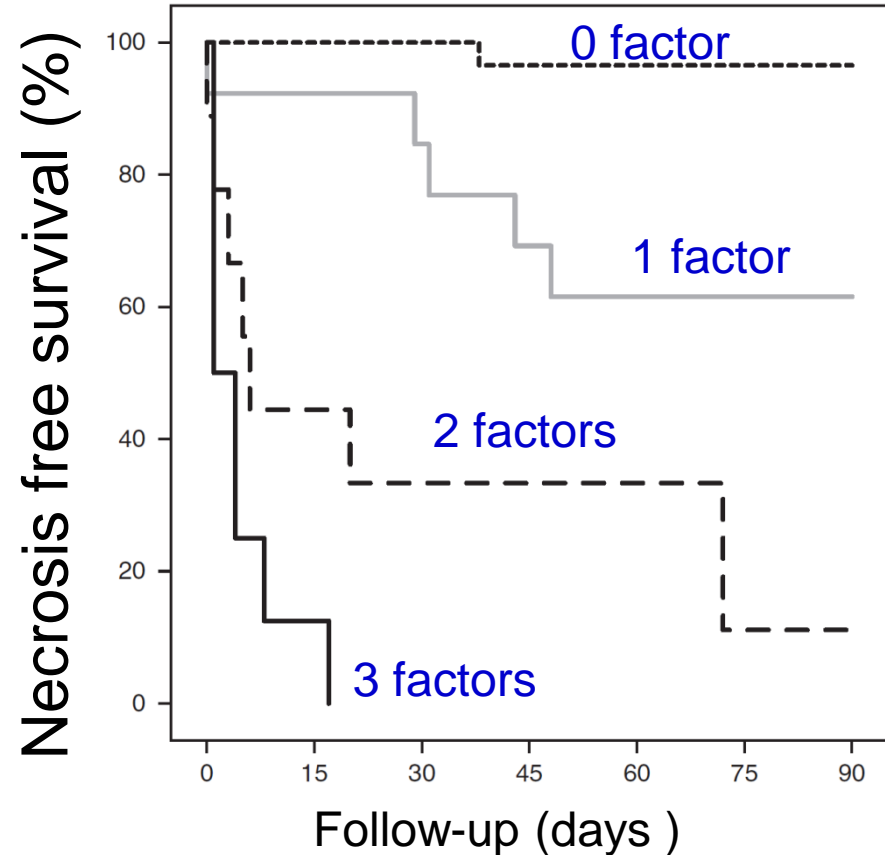


Identification of intestinal necrosis

- Organ failure
- Serum lactate > 2 mmol/L
- Bowel loop dilation

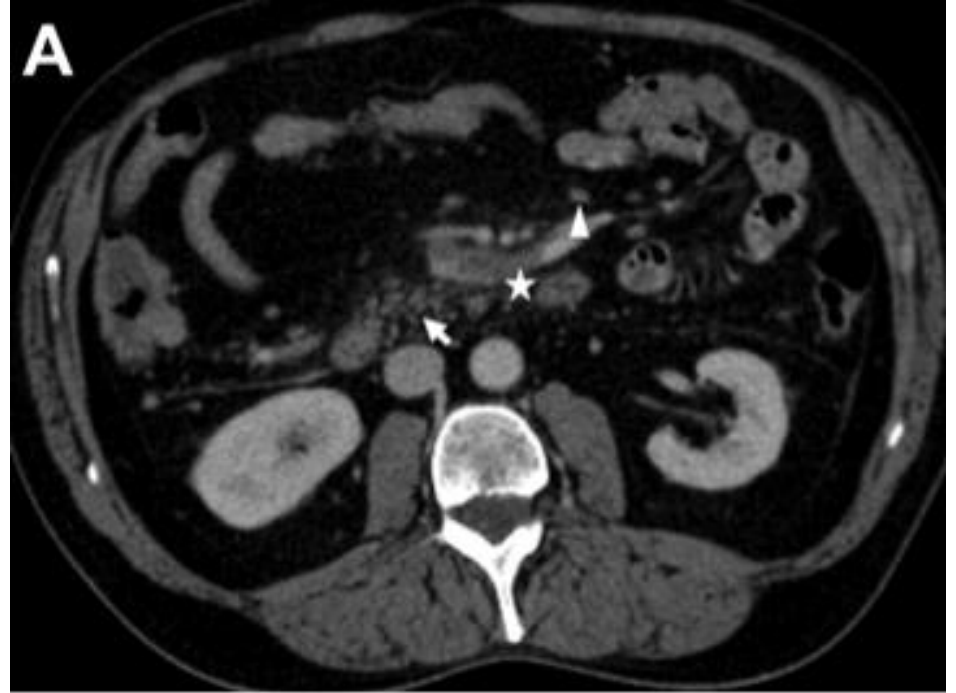
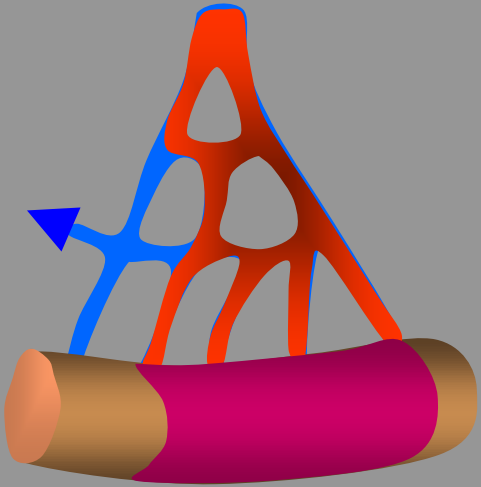


Nuzzo, Am J Gastro 2017



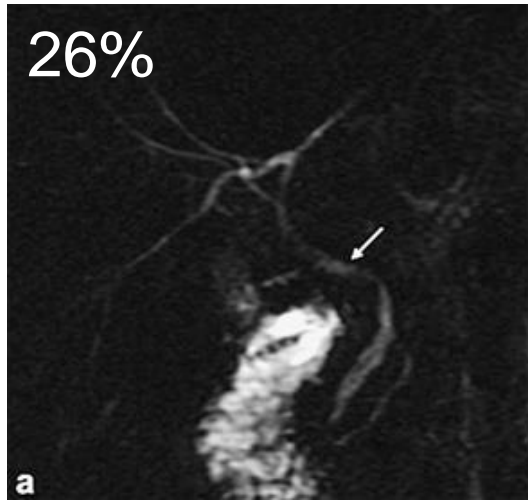
Specificities of venous intestinal necrosis

Intestinal
necrosis

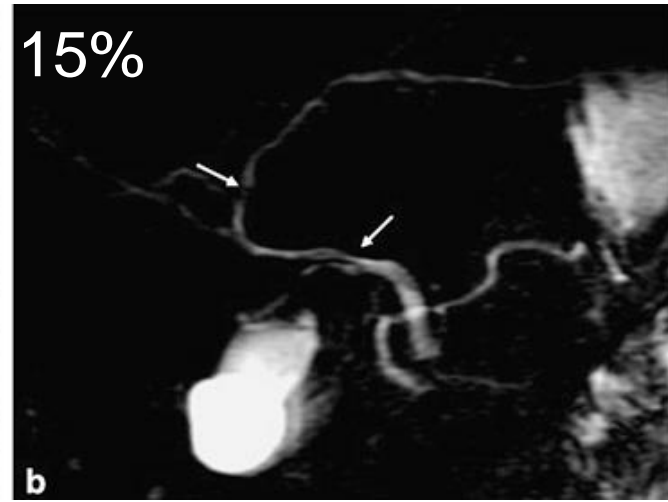


Thrombosis of second order radicles
Ascites
Thickened bowel wall

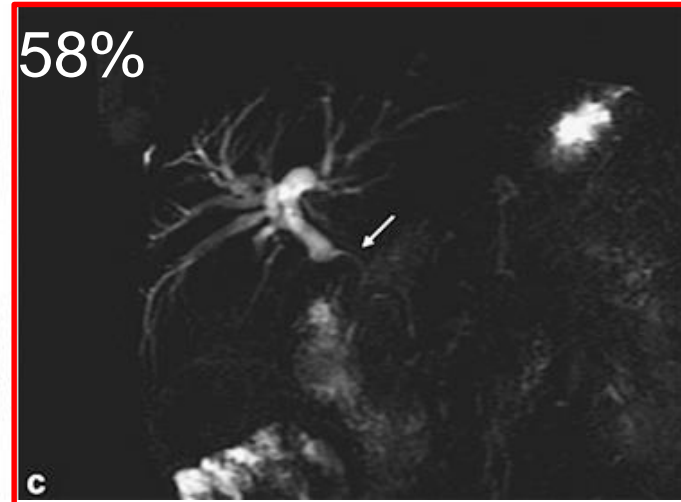
Portal cholangiopathy in chronic PVT



Normal or
parietal
irregularities



Strictures w/o
dilation



Strictures + dilation

Risk of complication
particularly if ALK or
GGT ↑

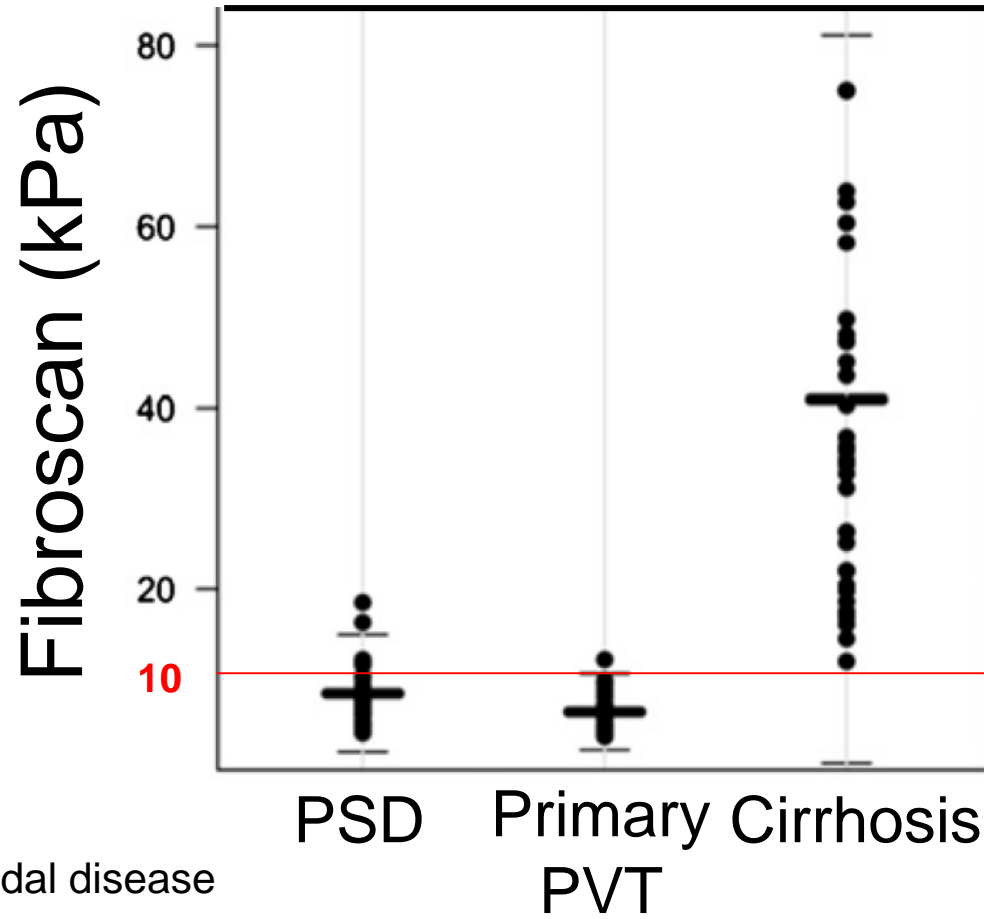
Diagnostic approach in a patient with thrombosis of the portal venous axis (PVT)

- Be sure of the diagnosis
- Is there a complication?
- **Is there a risk factor for PVT?**

Is there a liver disease?

Transient elastography

Is there a risk factor for PVT?



PSD

Primary Cirrhosis

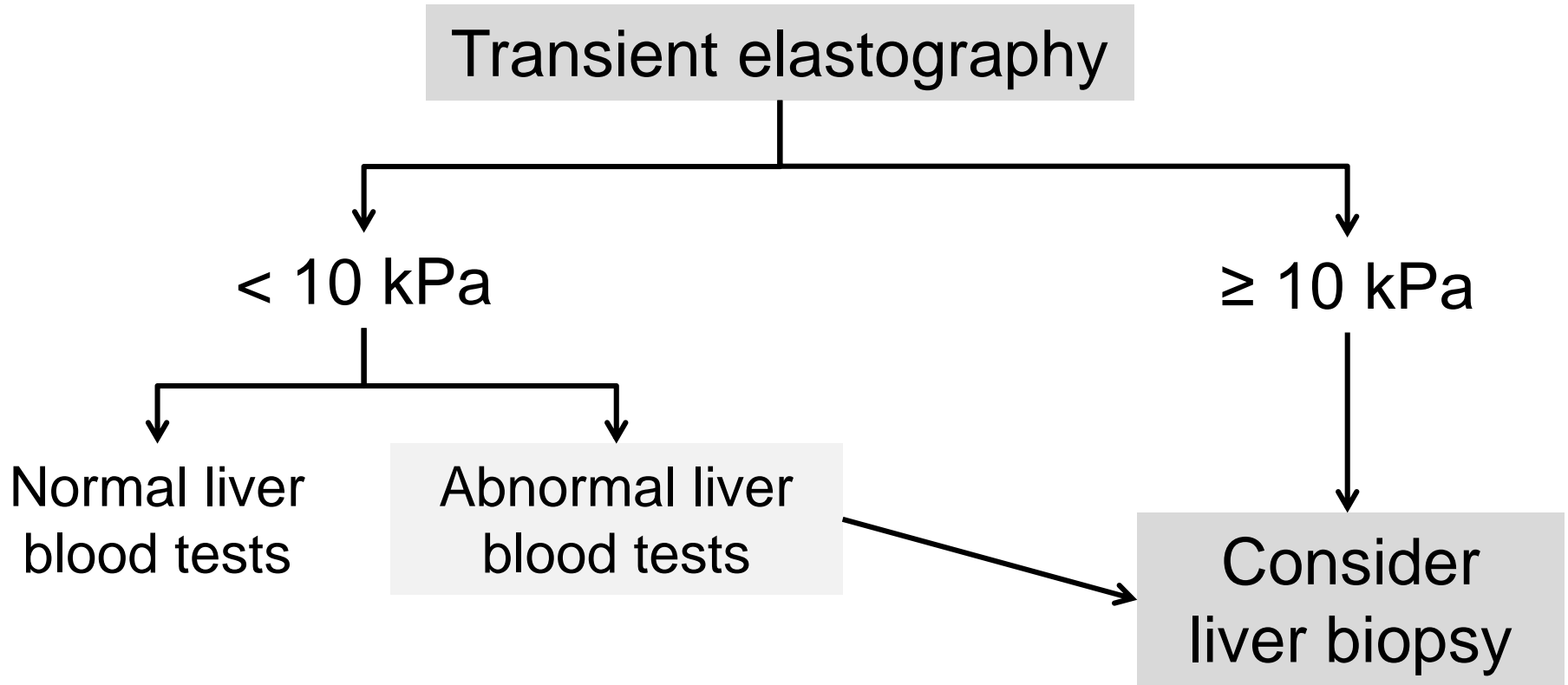
PVT

Baveno VI

Seijo, Dig Liv Dis 2012

PSD, portosinusoidal disease

Is there a liver disease?



Extrahepatic risk factors for PVT

	Turon 2014 (n=140)	Bureau 2016 (n=79)	Poisson 2017 (n=213)
Local factor	35%	16%	8%

General factor

Idiopathic

- Abdominal surgery
- Abdominal infection
- Abdominal trauma
- Pancreatitis / IBD

Extrahepatic risk factors for PVT

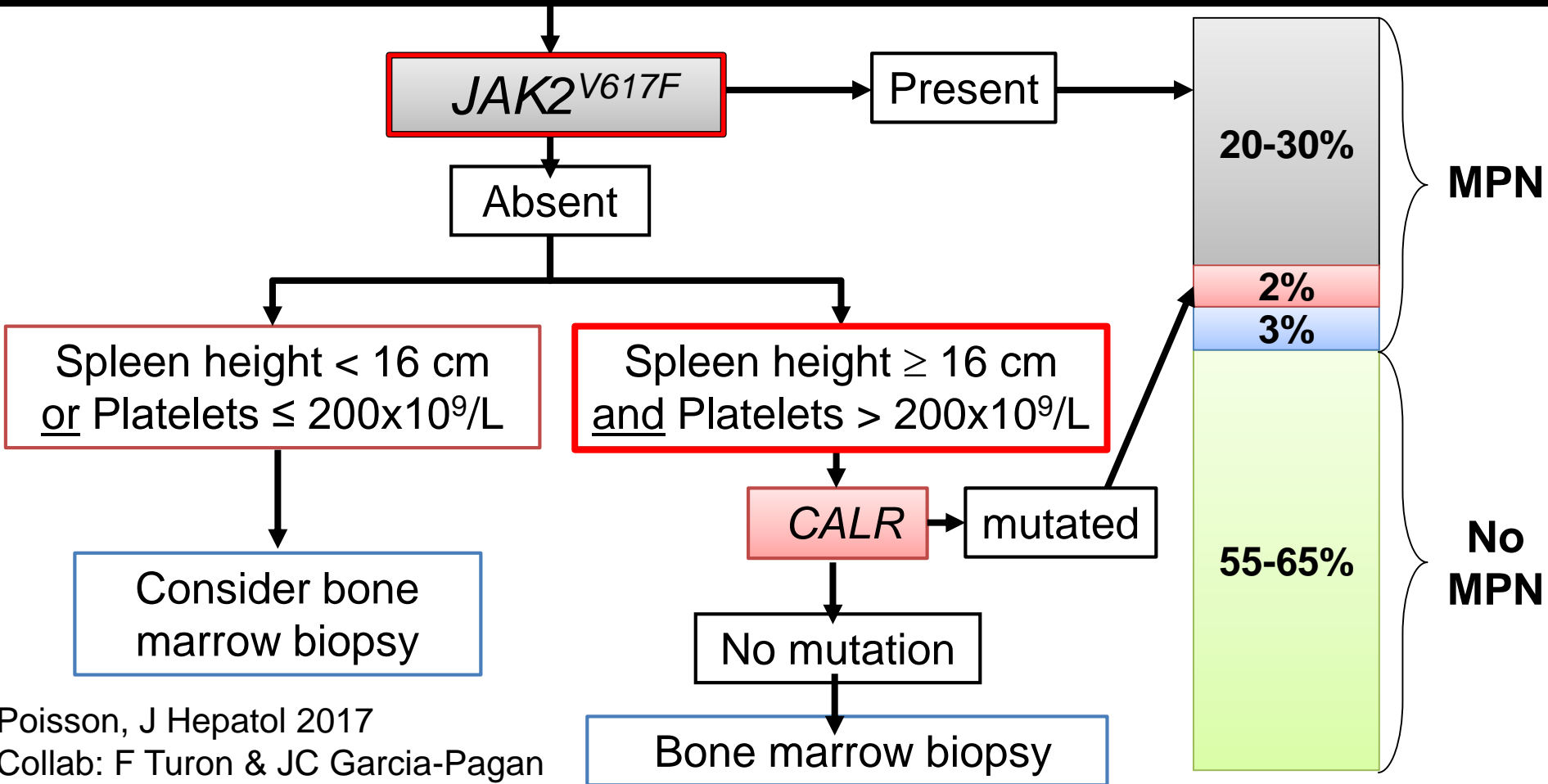
	Turon 2014 (n=140)	Bureau 2016 (n=79)	Poisson 2017 (n=213)
Local factor	35%	16%	8%
General factor	37%	34%	63%
Idiopathic	37%	49%	34%

Extrahepatic risk factors for PVT

**Barcelona + Toulouse +
Clichy (n=432)**

Myeloproliferative neoplasms %	21%
Factor II Leiden	6%
Factor V Leiden	3%
Low prot. C level	5%
Low prot. S level	6%
Antiphospholipid syndrome %	6%
Others (PNH, Behcet, IBD, ...) %	5%

Patients with splanchnic vein thrombosis



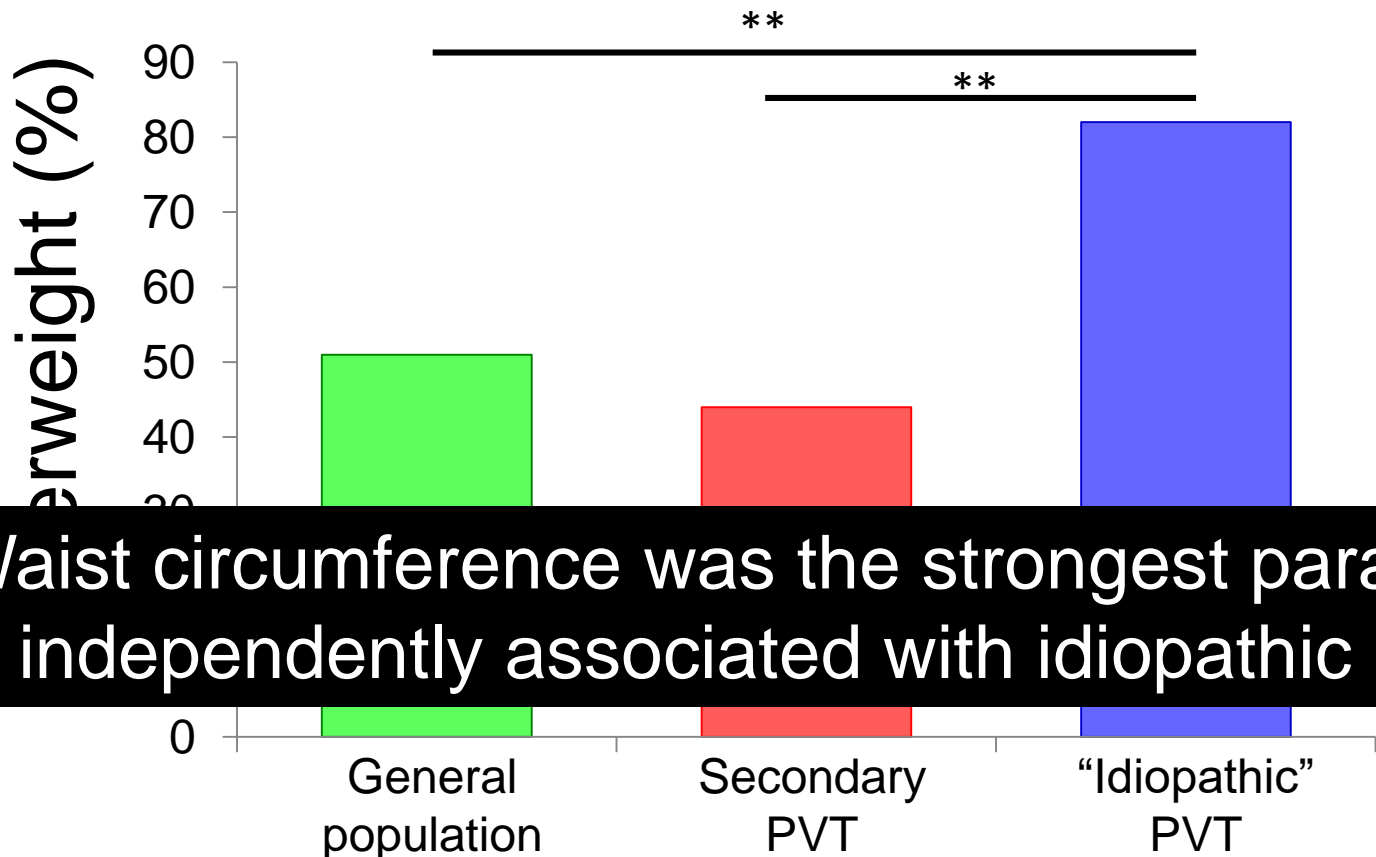
Poisson, J Hepatol 2017

Collab: F Turon & JC Garcia-Pagan

Risk factors for thrombosis in PVT

	Turon 2014 (n=140)	Bureau 2016 (n=79)	Poisson 2017 (n=213)
Local factor	35%	16%	8%
General factor	37%	34%	63%
Idiopathic	37%	49%	34%

Overweight: a risk factor for PVT



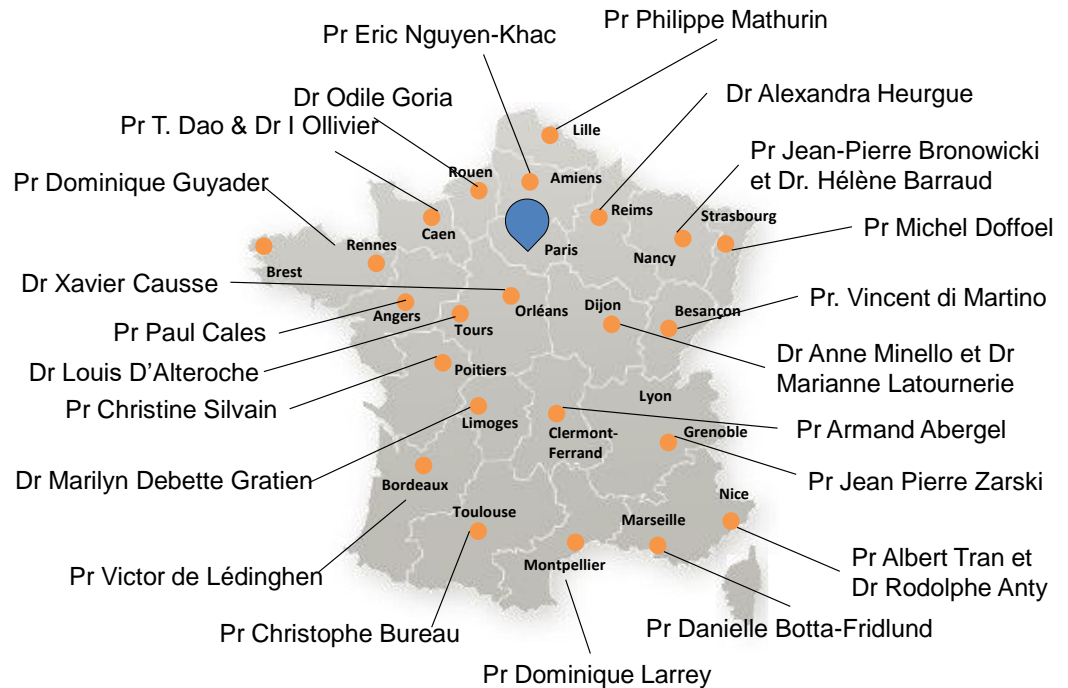
Waist circumference was the strongest parameter independently associated with idiopathic PVT

Conclusion

- Contrast enhanced CT-scan:
 - ✓ Diagnosis
 - ✓ Extension
 - ✓ Complication
 - ✓ Local factor
- Rule out cirrhosis: Fibroscan (\pm biopsy)
- Work-up for causes:
 - ✓ Local factor
 - ✓ General factors (MPN)
 - ✓ Obesity

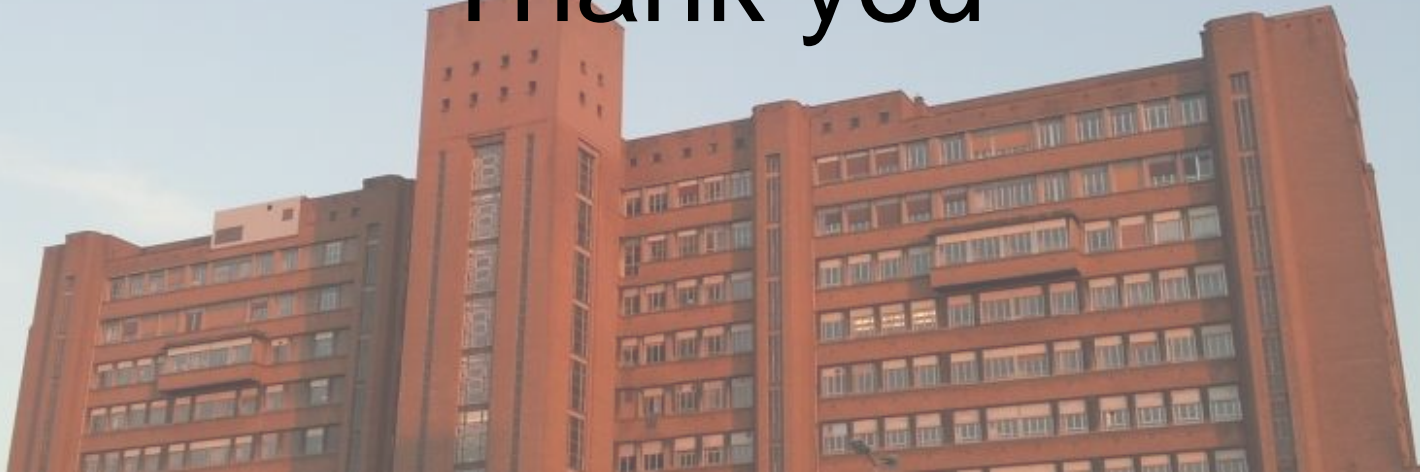
French network for vascular liver diseases

Dominique Valla
Aurélie Plessier
Audrey Payancé
Odile Gorla





Thank you



MPN treatment and BCS/PVT outcome

Budd-Chiari syndrome

(n=46)



Major events

(N=33)

Portal vein thrombosis

(n=63)



Major events

(N=26)

**Independent prognostic factor: absence of
cytoreductive therapy after BCS/PVT diagnosis**

Major events: vascular events (new thrombosis, hemorrhage)
or liver-related events (refractory ascites, hepato renal
syndrome, encephalopathy and transplantation)