



UNIVERSITY OF PADOVA  
DEPARTMENT OF VASCULAR AND ENDOVASCULAR SURGERY  
Director: Prof. F. GREGO

# Visceral artery dissection: how to treat them?

**Prof. Franco Grego**

University of Padua, School of Medicine  
Dept. of Cardiac, Thoracic and Vascular Sciences  
Vascular and Endovascular Surgery Clinic



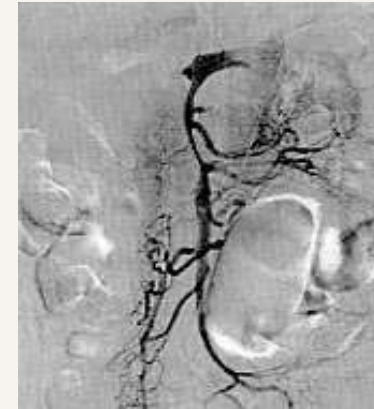
# INTRODUCTION

- Visceral arteries dissection is a rare disease
- It includes a variety of conditions ranging from static visceral obstruction associated to aortic dissections to spontaneous isolated visceral artery dissection (SIVAD). The incidence of SIVAD is approximately less than 0,1%
- Clinical presentation may vary from incidental findings to acute symptomatic presentations
- The natural history of the disease, as well as the indications to treatment, are not yet clear. For these reasons, management of these conditions may be very challenging



# CLASSIFICATION

- ISOLATED VISCERAL ARTERY DISSECTION
  1. Primary
    - a. Idiopathic
    - b. **Atherosclerosis**
    - c. Fibromuscular Dysplasia
    - d. Connective tissue disorder
    - e. Inflammatory disease
  2. Secondary
    - a. Trauma
    - b. Iatrogenic
- COMBINED WITH AORTIC DISSECTION
  1. Static obstruction
  2. Dynamic obstruction





# ISOLATED SMA DISSECTION

- The most common site of peripheral artery isolated dissection after carotid artery
- It was investigated the possible mechanism of the hemodynamic forced caused by convex curvature of the SMA that might lead to shear stress
- Compared to combined SMA+aortic dissection, SMA isolated dissection is more likely to be symptomatic
- More frequent in males and in the Asian race



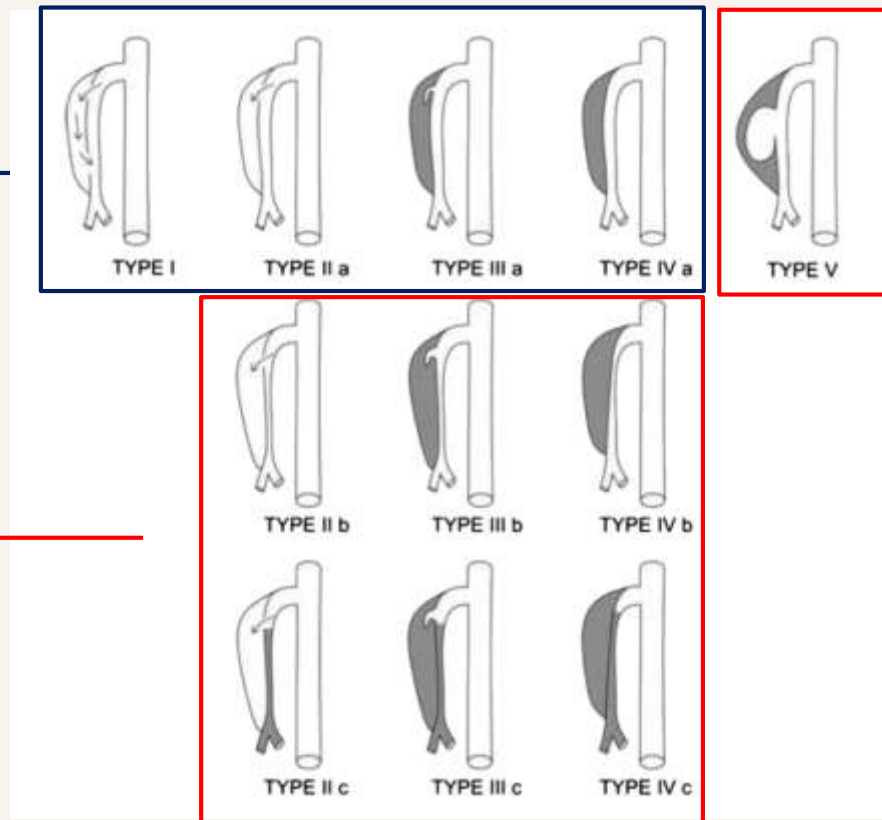


# ISOLATED SMA DISSECTION

## CLINICAL PRESENTATION

- Asymptomatic (30-40%)
- Symptomatic (50-60%)\*
  - Abdominal pain (100%)
  - Nausea/vomiting (20%)
  - Bowel ischemia (8%)

\*Correlation between dissection length and symptoms





# ISOLATED SMA DISSECTION

## NATURAL HISTORY

- Stabilization
- Spontaneous resolution



- Dilatation → Treatment if aneurysm > 2 cm
- Rupture → Hemorrhagic shock +/- mesenteric ischemia\*
- Thrombosis → Acute mesenteric ischemia\*  
→ Asymptomatic
- Stenosis → Mesenteric ischemia\*  
→ Asymptomatic

\* May need urgent/emergent treatment



# VISCERAL ARTERY DISSECTION

## TREATMENT OPTIONS

- Asymptomatic:
    - Observation alone
    - Medical therapy
      - Anticoagulant
      - Antiplatelet
  
  - Symptomatic: ( acute abdominal pain,nausea or vomiting,unrelated to other causes)
    - Fasting ,Rest, and blood pressure control
    - Medical therapy
      - Anticoagulant
      - Antiplatelet
    - Endovascular therapy
    - Surgical therapy
- } INDICATIONS:
- Failure of conservative treatment
  - Bowel ischemia
  - Aneurysm > 2cm
  - Rupture



# ISOLATED SMA DISSECTIONS

## ENDOVASCULAR TREATMENT



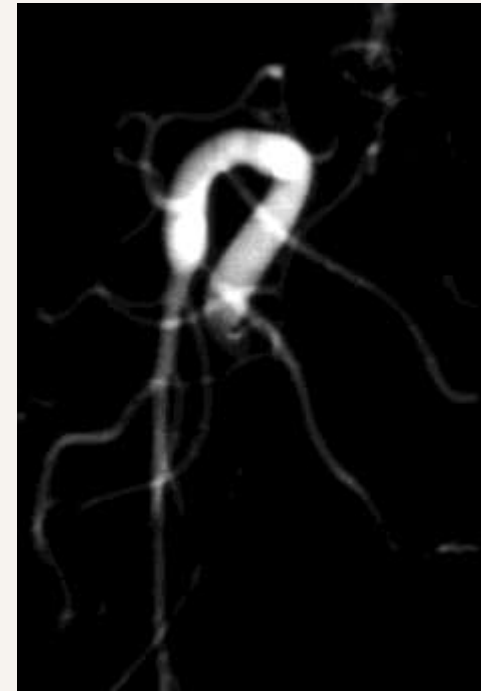
- Endovascular treatment may be a valid treatment in cases of symptomatic SMA isolated dissections





# ISOLATED SMA DISSECTIONS

## SURGICAL TREATMENT



Retrograde  
bypass



# ISOLATED SMA DISSECTIONS

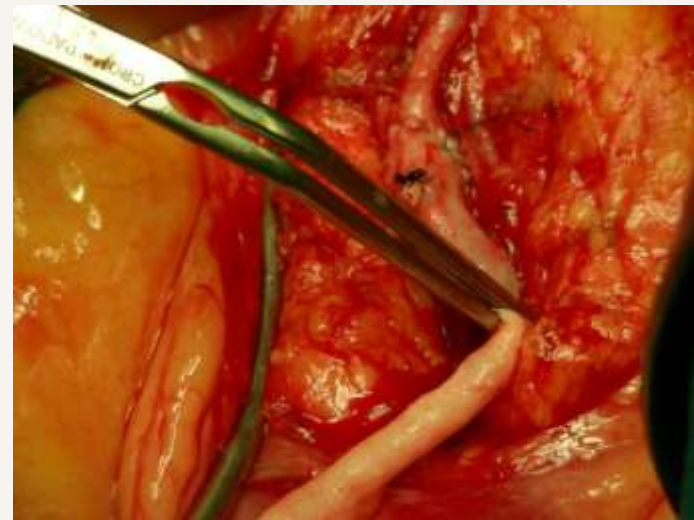
SURGICAL TREATMENT

SHORT ILIAC – MESENTERIC BY-PASS  
using direct trans-mesenteric pathway

PTFE



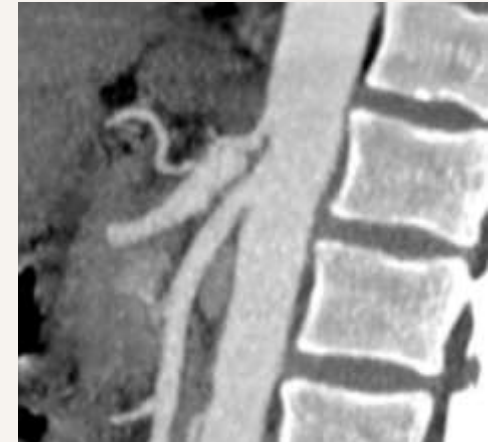
Great saphenous vein





# CELIAC ARTERY DISSECTION

- Rare disease
- Symptoms, natural history and indications similar to SMA isolated dissection
- Medical treatment alone is effective in the majority of patients
- Endovascular therapy can be applied in cases of visceral malperfusion (rare), or aneurysm formation
- Surgical therapy should be considered if endovascular treatment has failed or is not suitable



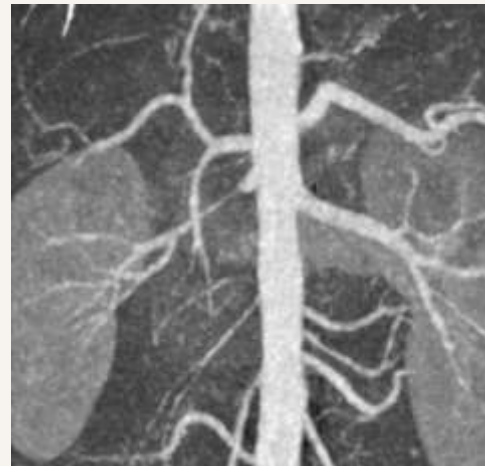
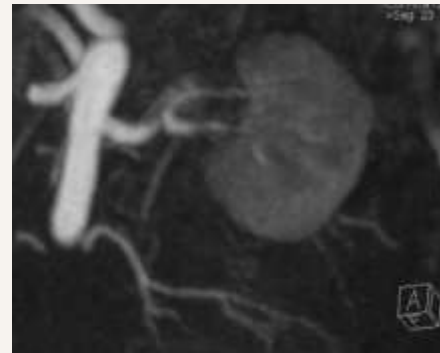
Morphologic findings and management strategy of spontaneous isolated dissection of the celiac artery

Jie Sun, MD, Dong-lin Li, MD, PhD, Zi-heng Wu, MD, Yang-yan He, MD, Qian-qian Zhu, MD, and Hong-kun Zhang, MD, PhD, Hangzhou, China



# RENAL ARTERY DISSECTION

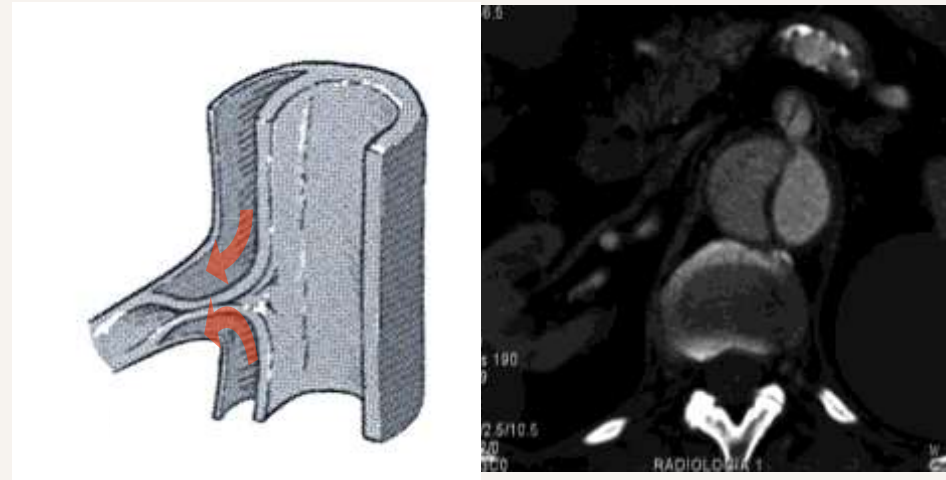
- Primarily related to fibromuscular dysplasia
- Symptoms: flank pain, nausea/vomiting, hematuria, nephro-vascular hypertension, renal insufficiency
- Treatment
  - Medical (antihypertensive, anticoagulant)
  - Endovascular (stenting)
  - Surgical (bypass, graft interposition)





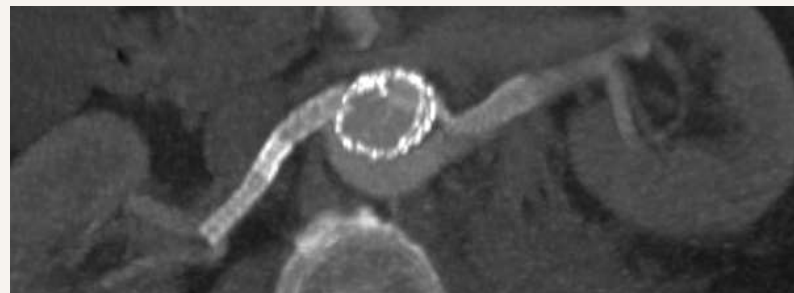
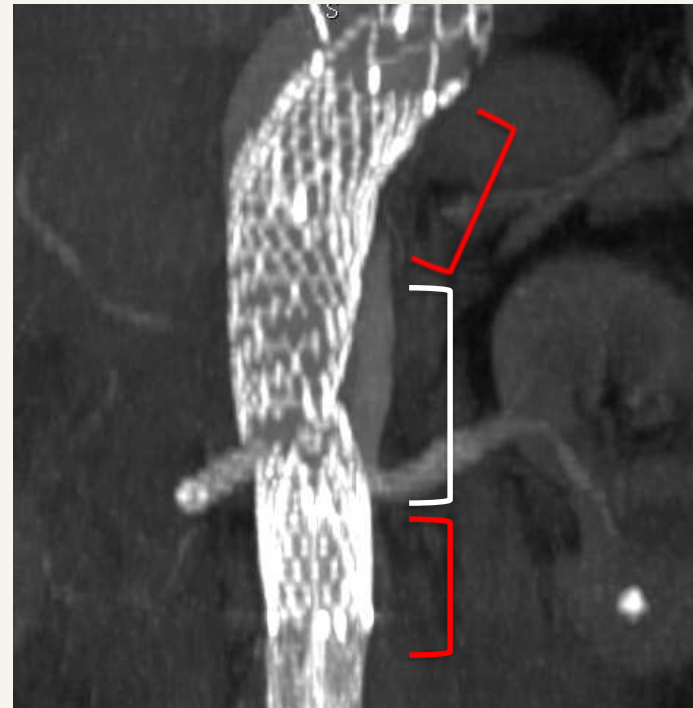
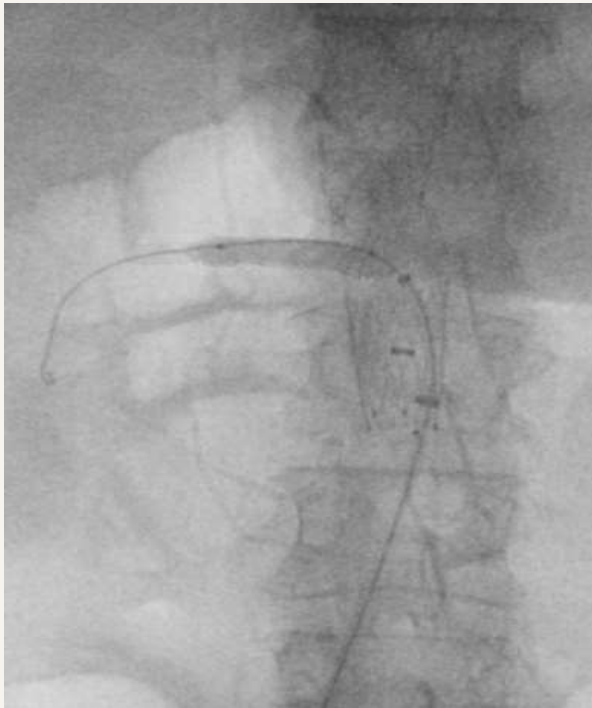
# COMBINED AORTIC AND VISCERAL DISSECTIONS

- Type B aortic dissections frequently (30-50%) involve visceral arteries (CT, SMA, Renals)
- Involvement of the visceral artery (static malperfusion) may be symptomatic (bowel ischemia, renal ischemia) or asymptomatic
- Treatment may be endovascular or surgical





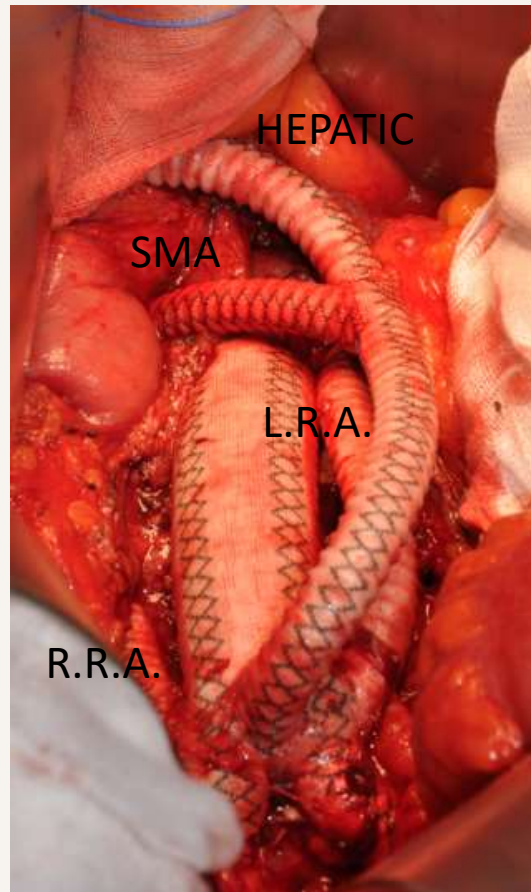
# COMBINED AORTIC AND VISCERAL DISSECTIONS





# COMBINED AORTIC AND VISCERAL DISSECTIONS

## SURGICAL TREATMENT





# CONCLUSIONS

- Isolated visceral artery dissection is a rare disease
- Reliable statistical considerations are not possible due to the small number of cases and the differences regarding indications to treatment
- Conservative treatment seems to be effective in the majority of patients
- Invasive treatment (endovascular or open surgery) is indicated in patients experiencing uncontrollable abdominal pain or exhibiting any sign of intestinal necrosis or arterial rupture .
- The type of treatment depends entirely on the physician's experience and preference .





# THANKS FOR YOUR ATTENTION

I SINCERELY HOPE TO SEE ALL OF YOU IN  
GRONINGEN AT THE ESCVS CONGRESS  
2019

