



# SYMPTOMATIC FLOATING THROMBUS OF THE ASCENDING AORTA

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# Introduction

- Primary aortic mural thrombus = **uncommon pathology**
  - Sessile or pedunculated
  - Mostly asymptomatic
  - Potential source of embolism and death
- **Verma and al.** classified into types I to IV
  - Type I a/b
  - Type II a/b
  - Type III
  - Type IV
- We report one case of symptomatic floating thrombus of the ascending aorta
  - Acute mesenteric ischemia

**Type I:** Mural thrombus in ascending and arch of aorta ( up to origin of left SCA)

**Type Ia:** Thrombus limited to ascending aorta

**Type Ib:** Ascending aortic thrombus extending into arch or aortic arch thrombus.

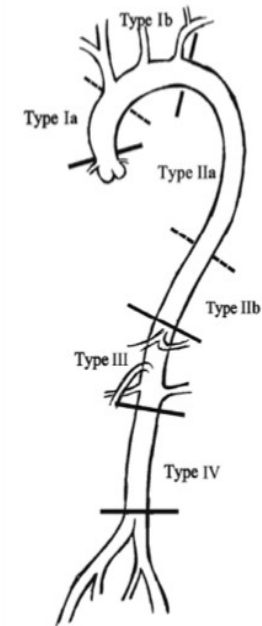
**Type II:** Mural thrombus descending thoracic aorta (distal to left subclavian artery up to coeliac artery).

**Type IIa:** DTA thrombus above T8

**Type IIb:** DTA & supraceliac aorta thrombus (T8-L1)

**Type III:** Mural thrombus in aortic segment between coeliac artery to lowest renal artery

**Type IV:** Thrombus between lowest renal artery to aortic bifurcation.



*\*Based on morphology of thrombus, each type of thrombus is further classified as 'S', 'P' or 'O'*

*S (Sessile):* Eccentric or concentric thrombus with no free floating component

*P (Pedunculated):* Pedunculated thrombus (Mural thrombus attached to aorta proximally with a distal free floating segment of variable length.)

*O (Occlusion):* Complete thrombotic occlusion of aorta.

# Case Report

- 62 years old caucasian man
  - Acute, postprandial, unsustainable abdominal pain
  - Vomiting
  - Diarrhea

- History :

- Arterial hypertension
- Myocardial infarction 16 years ago
- Active smoking
- Allergy : Contrast agent

- Treatment :

- Perindopril 5mg

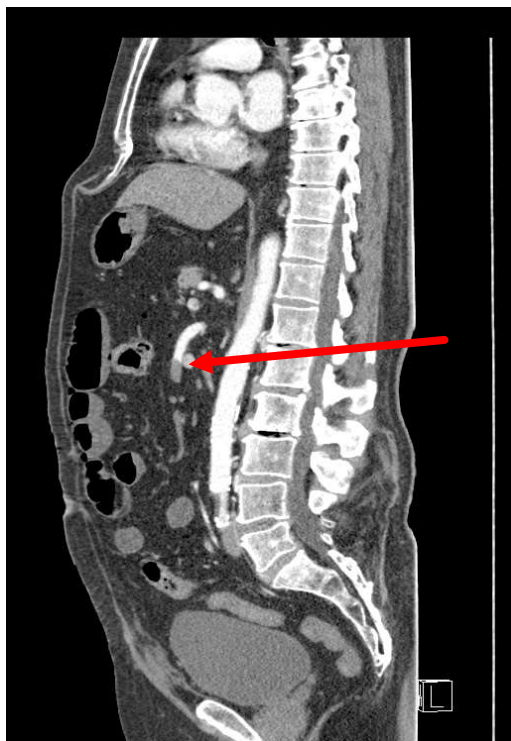
- Clinical examination :

- Abdomen soft, no rebound or guarding
- Pain in epigastric region (10/10)
- Lowered peristalsis

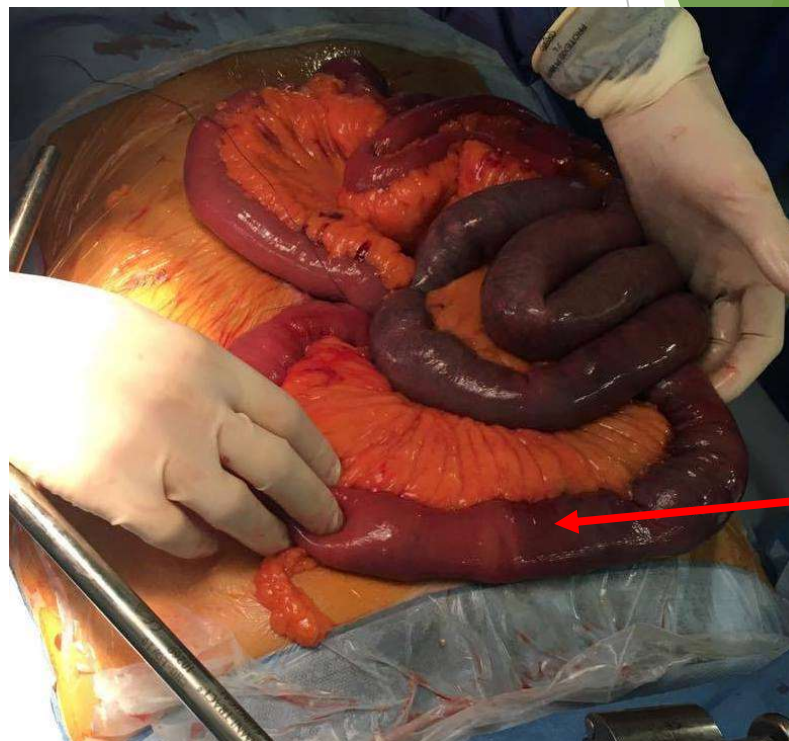


## Computed Tomography (CT) & Treatment

- Occlusion of the SMA

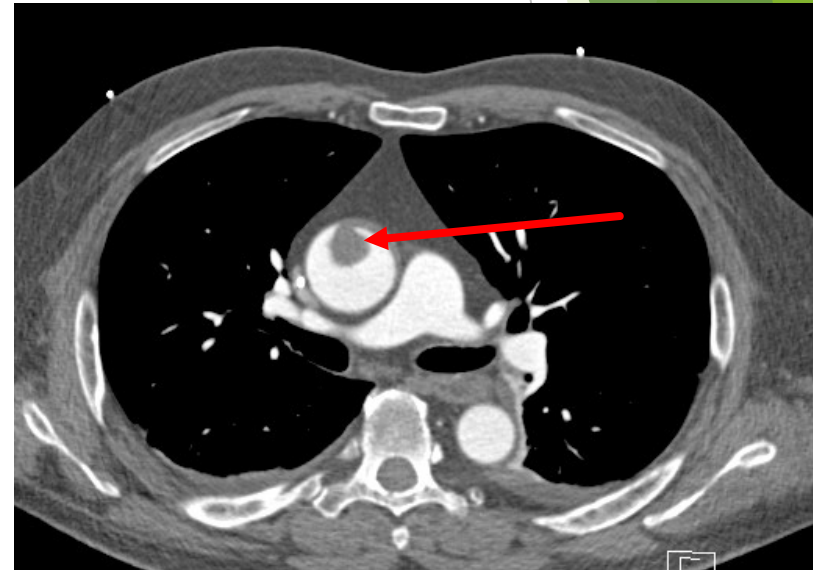
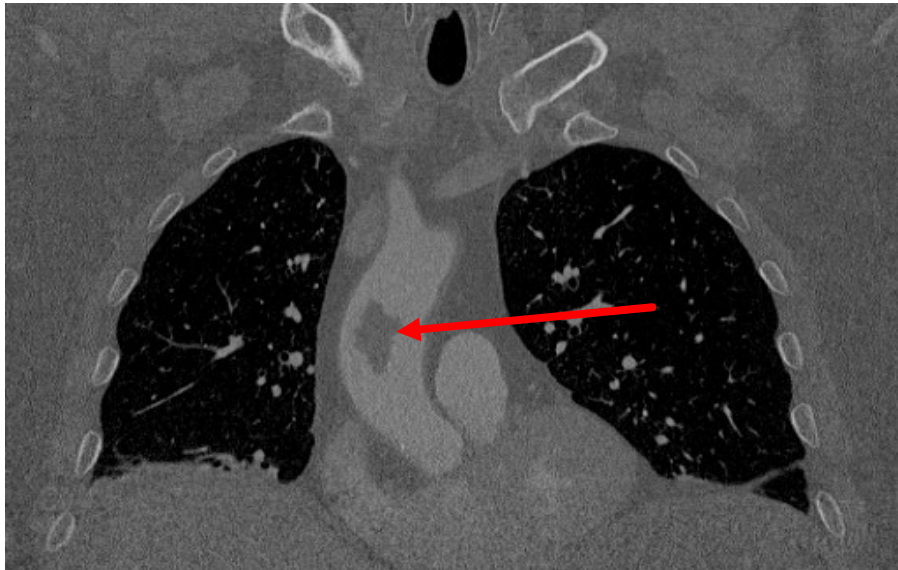


- Embolectomy with extensive bowel resection



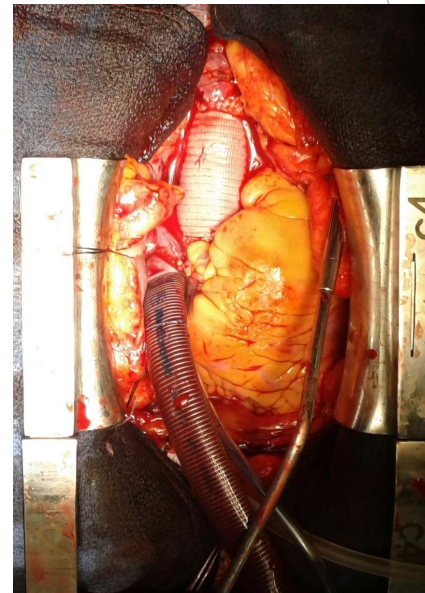
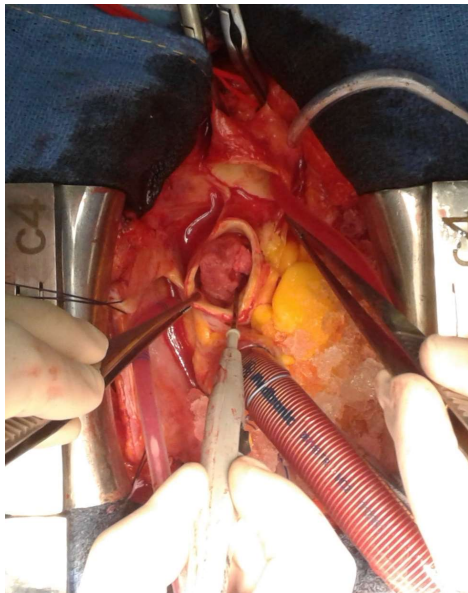
# Development

- Thoracic CT angiography



# Ascending Aortic Replacement

- Cardiopulmonary bypass
  - Right axillary arterial cannulation
  - Right atrium venous cannulation
- Deep hypothermic (28° C)
- 26 millimeters diameter dacron graft interposition

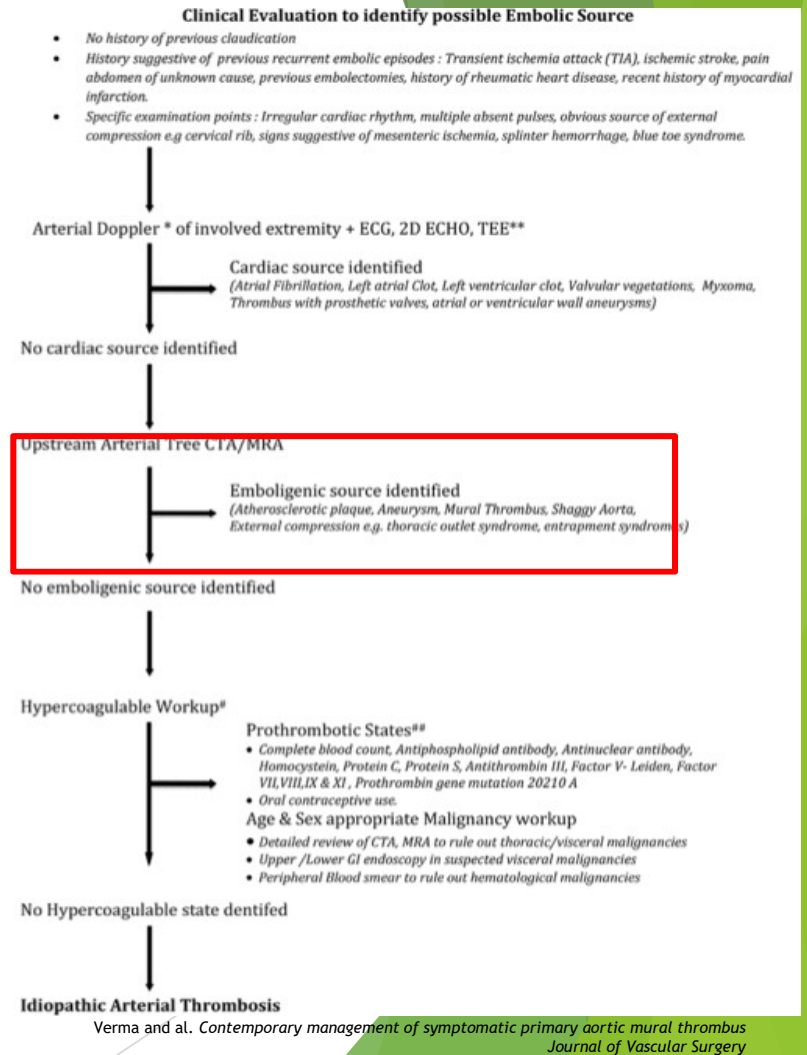


# Discussion

- Formation of primary aortic mural thrombus
  - Rare
  - Asymptomatic or embolic events
    - Advanced organ ischemia = **poor prognostic sign**
  - True incidence unknown

## ➤ Properties of the thrombus

- Morphological (sessile vs pedunculated)
- Dynamic (mobile/floating vs fixed)
- Size
- Length of the aortic involvement
- Site



# Discussion

## Rapid diagnosis is fundamental

- Computed tomography with injection of contrast media = **best investigation**
  - Renal insufficiency or contrast media allergy
- Junction of the distal aortic arch and descending thoracic aorta (74%) = **predilection location**
  - Abdominal (14%)
  - Ascending aorta (12%)
- No consensus for therapeutic management
  - Oral anticoagulants to endovascular or open surgery





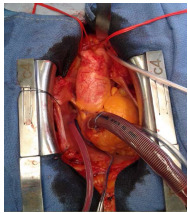
# Discussion

## ➤ Therapeutic strategies



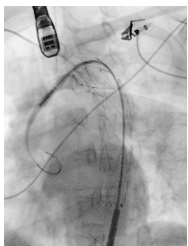
### ➤ **Anticoagulation = primary modality**

- Recurrence embolism from 25% to 50%
- Thrombus persistence 35%
- Duration ??



### ➤ **Open surgery**

- Mortality of 2,6%
- Perioperative complication from 29% to 71%



### ➤ **Endovascular approach**

- Only in anatomically suitable patients

# Discussion

## ➤ Management

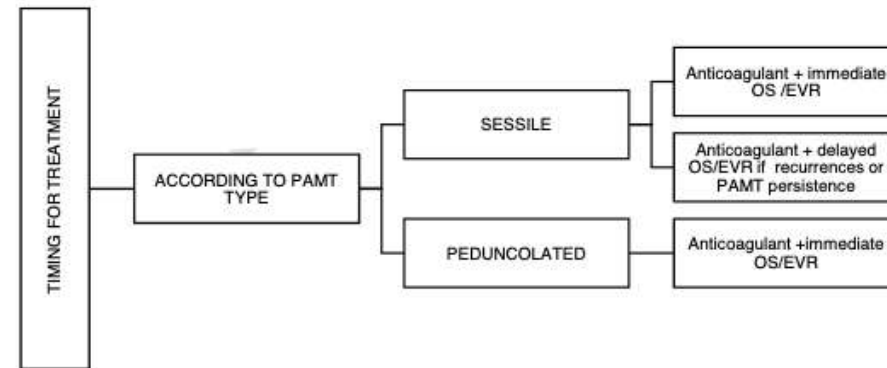
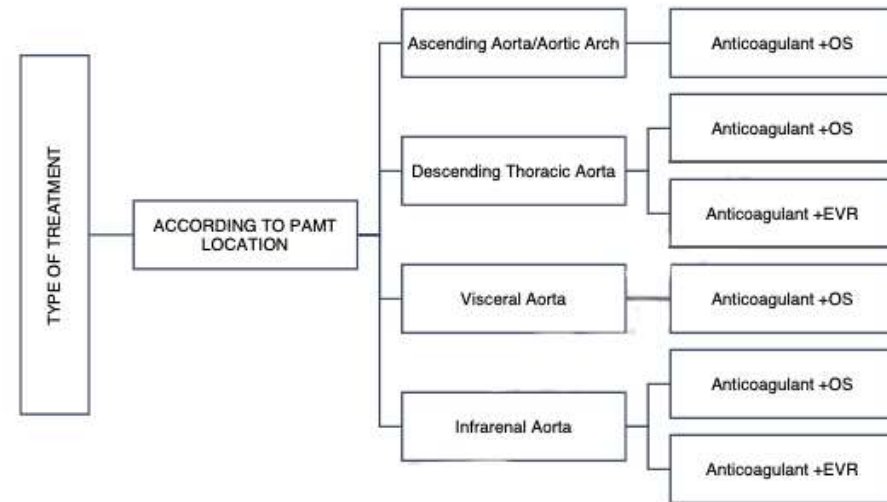
- Clinical presentation
- Co-morbidities of patient
- Preoperative hemodynamic status
- Physician's preferences
- Anatomic findings

## ➤ Verma and al.

- Surgical thrombectomy for type I and III
- Endovascular repair for type II and IV.

## ➤ Borghese and al. :

- Delayed or immediate for sessile
- Immediate for pedunculated



Borghese and al. *Symptomatic aortic mural thrombus treatment and outcomes*  
*Annals of Vascular Surgery*

# Conclusion

- Source of significant morbidity and mortality
- Rapid management
- No expert consensus no guidelines



## References

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