

# Guidelines for Management of Visceral Artery Aneurysms

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# Disclosures

None.



# Objectives

1. Discuss history and presentation of visceral artery aneurysm.
2. Review current practice guidelines of management of visceral artery aneurysms.





# SVS Clinical Practice Guidelines on the Management of Visceral Aneurysms

## Hepatic Artery

- Symptomatic
- Size >2cm
- Growth >0.5cm/year

## Pancreaticoduodenal and Gastrooduodenal Arteries

Repair all aneurysms regardless of size

## Superior Mesenteric Artery

Repair all aneurysms regardless of size

## Gastric and Gastroepiploic Arteries

Repair all aneurysms regardless of size

## Splenic Artery

- All pseudoaneurysms
- Size > 3cm
- All sizes in women of childbearing age

## Celiac Artery

- All pseudoaneurysms
- Size > 2cm

## Renal Artery

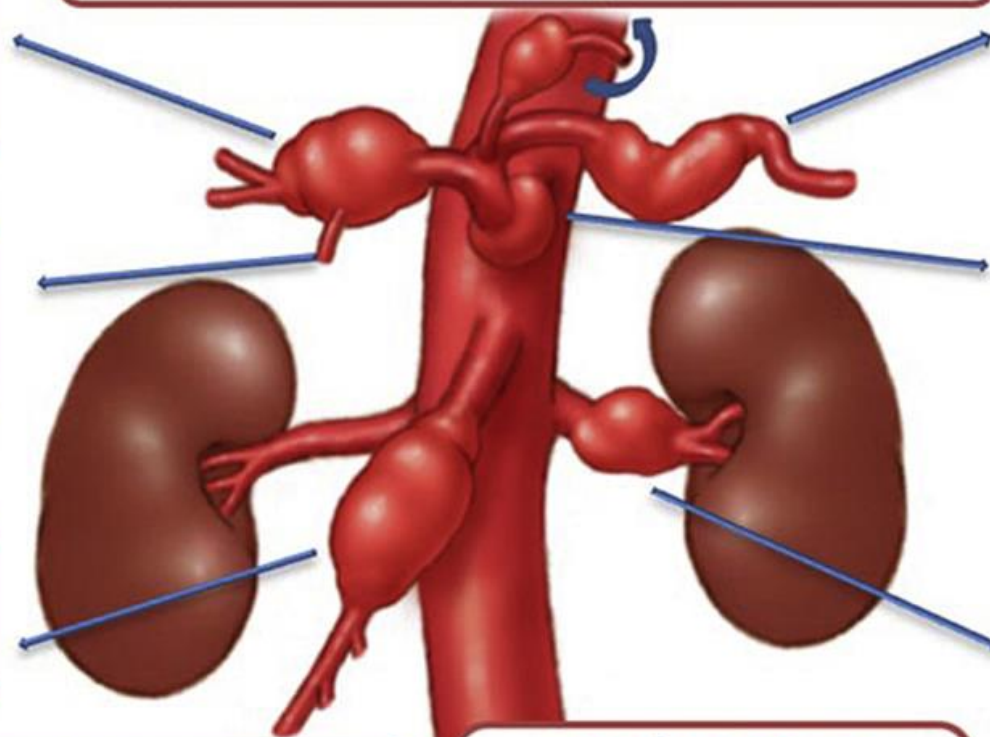
- Symptomatic
- Size > 3cm
- All sizes
  - in women of childbearing age
  - in patients with refractory hypertension and renal artery stenosis

## Jejunal and Ileal Arteries

- Symptomatic
- Size >2cm

## Colic Artery

Repair all aneurysms regardless of size



# Splenic Artery Aneurysm

- 60% of splanchnic artery aneurysms
- Diagnosis:
  - CTA (g1/qb).
    - » Ultrasound limited.
    - » MRA suboptimal with small aneurysms.
  - Angio for preop planning (g1/qC).
- Treatment:
  - Ruptured: Any size (g1/qB).
  - Non-ruptured pseudoaneurysm: Any size (g1/qB)
    - » Rate of rupture higher at presentation.
    - » 76.3% vs 3.1% (Pitton 2015).
  - Non-ruptured true aneurysm: >3 cm (g1/qC)
  - All sizes in women of childbearing age.
    - » Pregnancy may account for 20-50% of ruptures.



# Splenic Artery Aneurysm

## Ruptured

- Discovered at laparotomy:
  - Ligation +/- splenectomy.
- Preoperative imaging:
  - Open or endovascular based on the patient's anatomy.
- Vaccinate on or after postop day #14

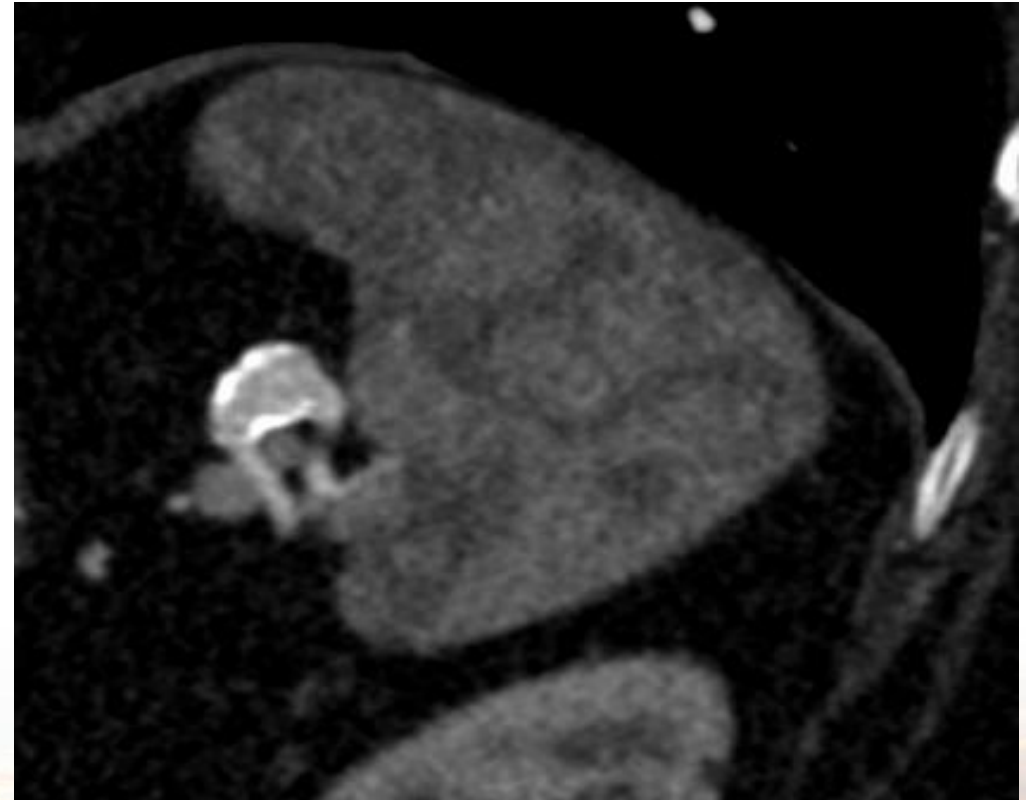
## Elective

- Endovascular if anatomically feasible.
- The splenic artery does not routinely require preservation or revascularization.
- Distal SAA:
  - Open techniques and possible splenectomy.
- Vaccinate at least 14 days before.





# Splenic Artery Aneurysm



# Celiac Artery Aneurysm

- 4% of splanchnic artery aneurysms
- Diagnosis:
  - CTA (g1/qb).
- Treatment:
  - Ruptured: Any size (g1/qB).
  - Non-ruptured pseudoaneurysm: Any size (g1/qB).
    - » Acceptable operative risk.
  - Non-ruptured true aneurysm: >2 cm (g1/qC).





# Celiac Artery Aneurysm

## Ruptured

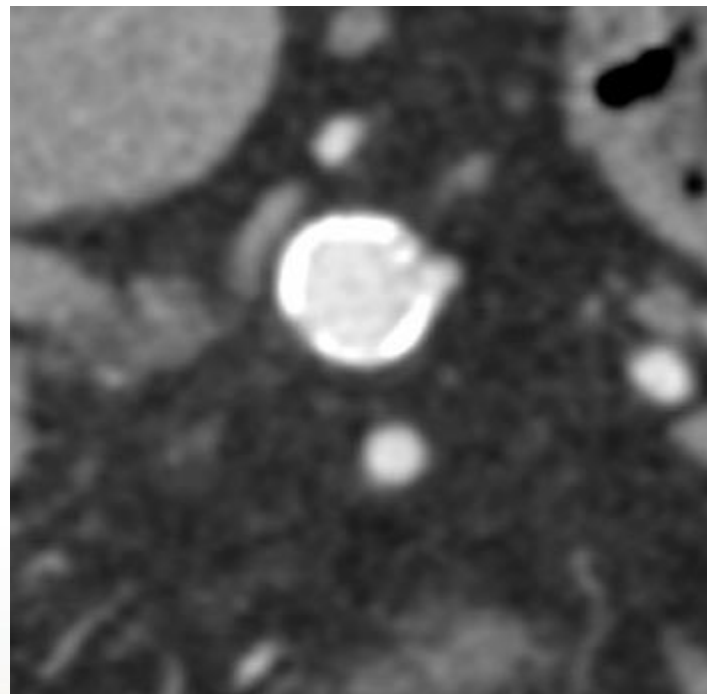
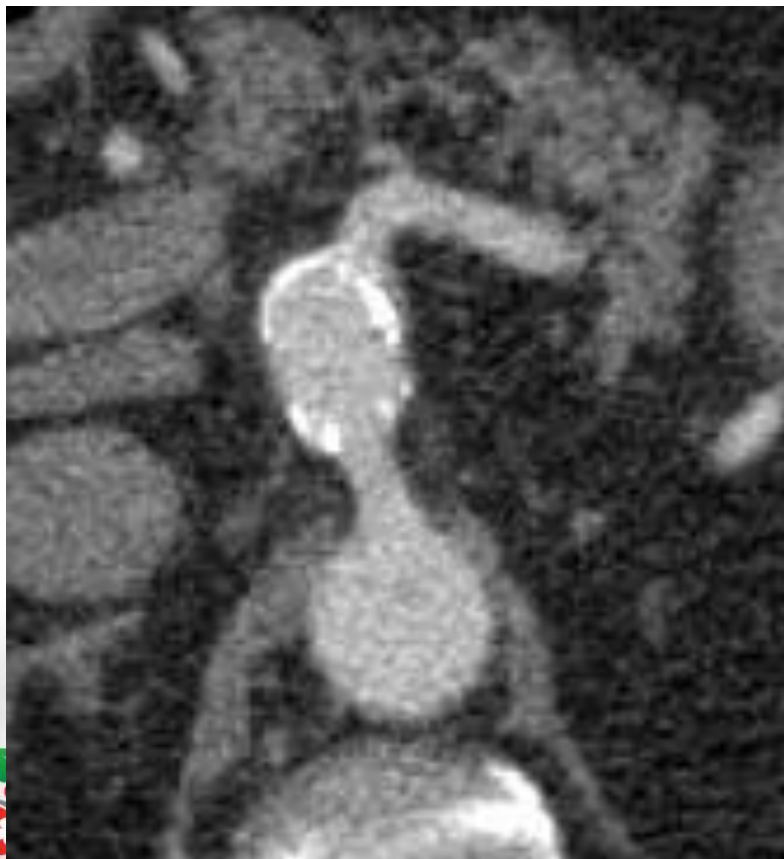
- Discovered at laparotomy:
  - Ligation if sufficient collaterals to liver.
- Preoperative imaging:
  - Open or endovascular based on the patient's anatomy.

## Elective

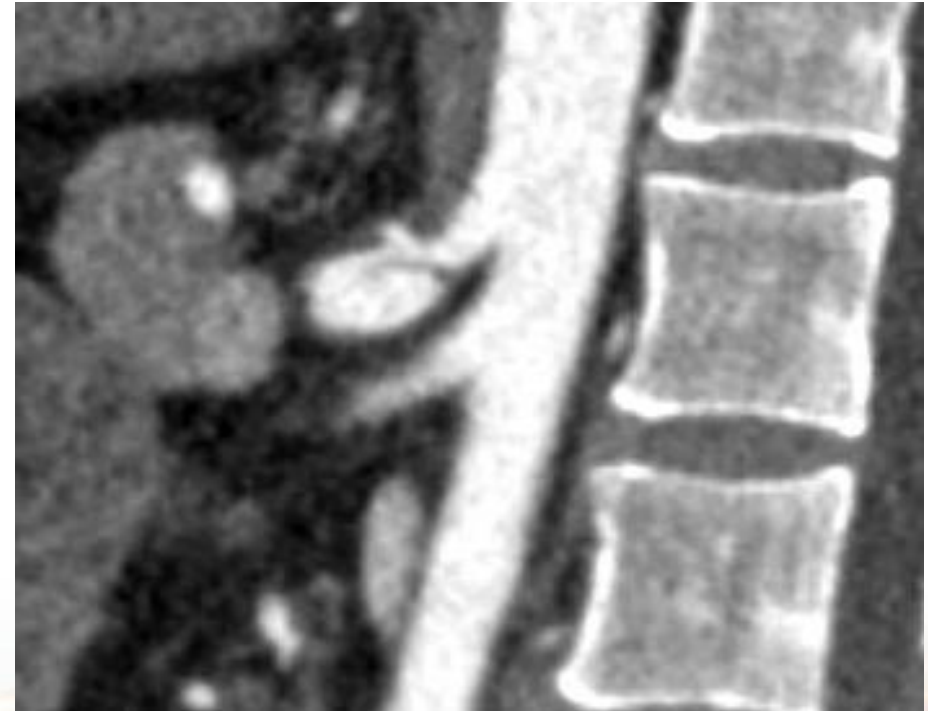
- Endovascular if anatomically feasible.
- May require open .
- Evaluate status of SMA, gastroduodenal, and relevant collateral anatomy (CTA/angio).



# Celiac artery aneurysm



# Celiac artery aneurysm



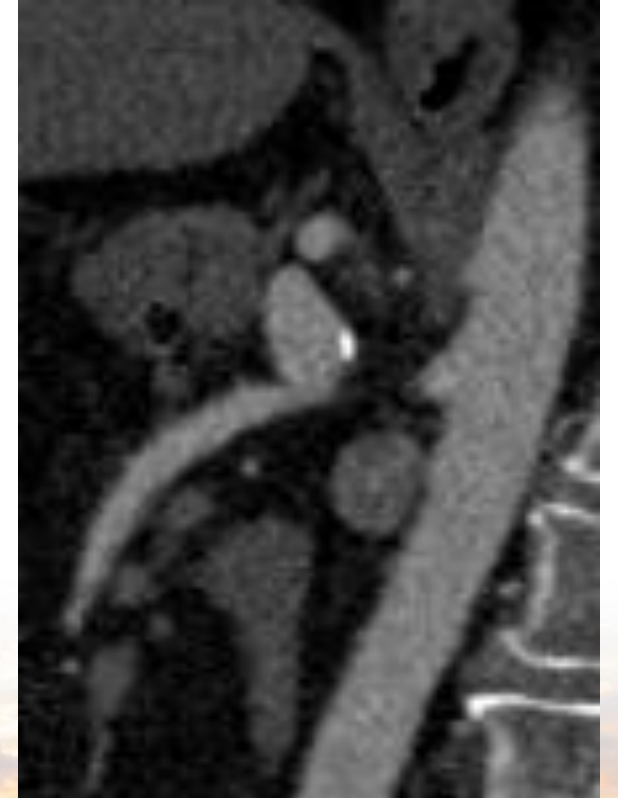
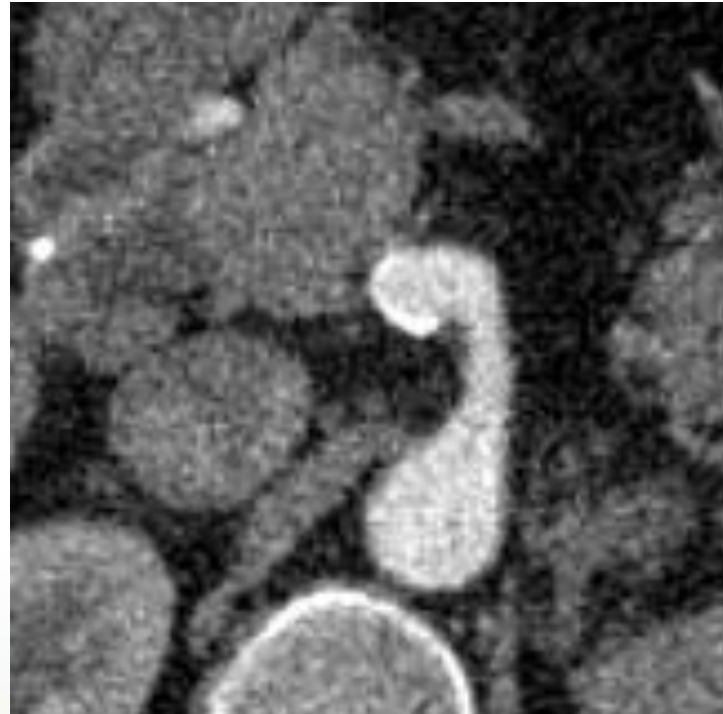
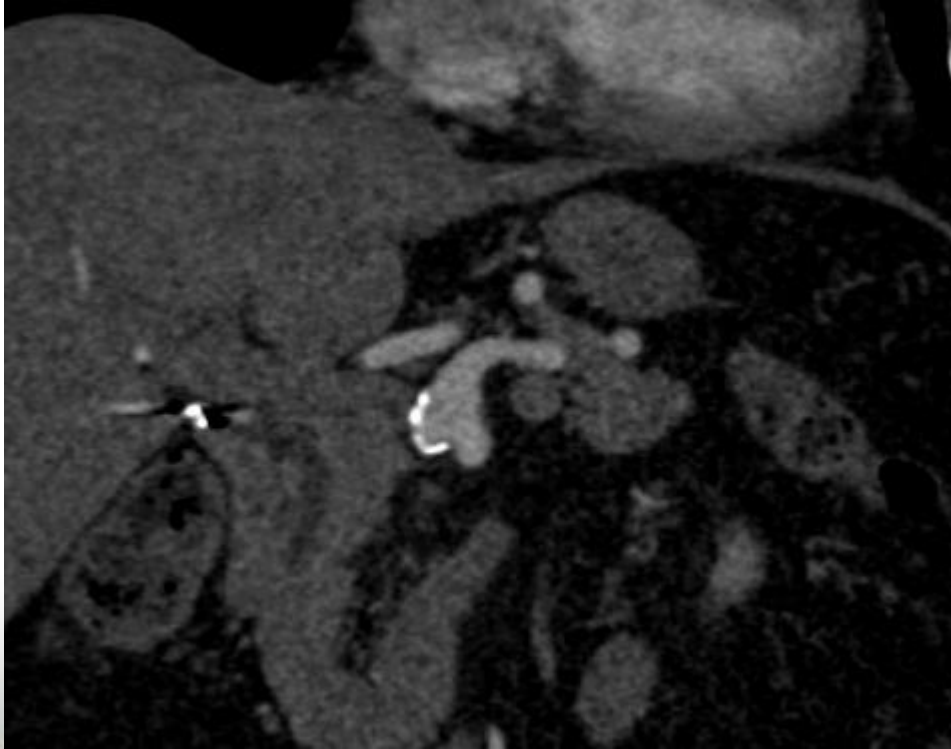
# Superior Mesenteric Artery Aneurysm

- 6% of splanchnic artery aneurysms
- Diagnosis:
  - CTA (g1/qb).
  - Angio for preop planning (g1/qB).
- Treatment:
  - True and pseudoaneurysm: Any size (g1/qA).
  - Endovascular first if anatomically feasible (g1/qB).
  - Dissection: Observation (g2/qB)





# Superior Mesenteric Artery Aneurysm



# Renal Artery Aneurysm

- Diagnosis:
  - CTA (g1/qb).
  - Angio for preop planning (g1/qC).
- Treatment:
  - Asymptomatic: Greater than 3 cm (g2/qC).
    - » Low rupture rate (3-5%) and low annualized growth rate.
  - Symptomatic: Any size (g1/qB)
  - Elective open surgical repair of most RAA in patients with acceptable operative risk (g2/qB).
  - Endovascular Techniques in anatomically appropriate RAA (g2/qB):
    - » Stent graft exclusion in patients with poor operative risk.
    - » Embolization of distal and parenchymal RAA.

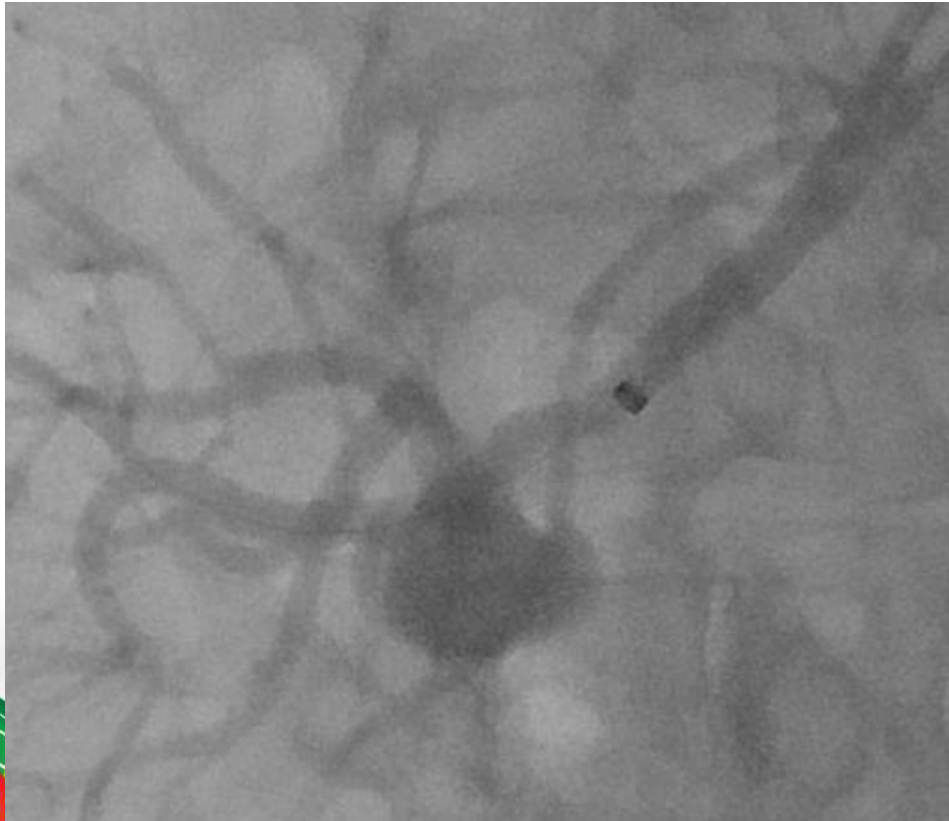


# Renal Artery Aneurysm





# Renal Artery Aneurysm



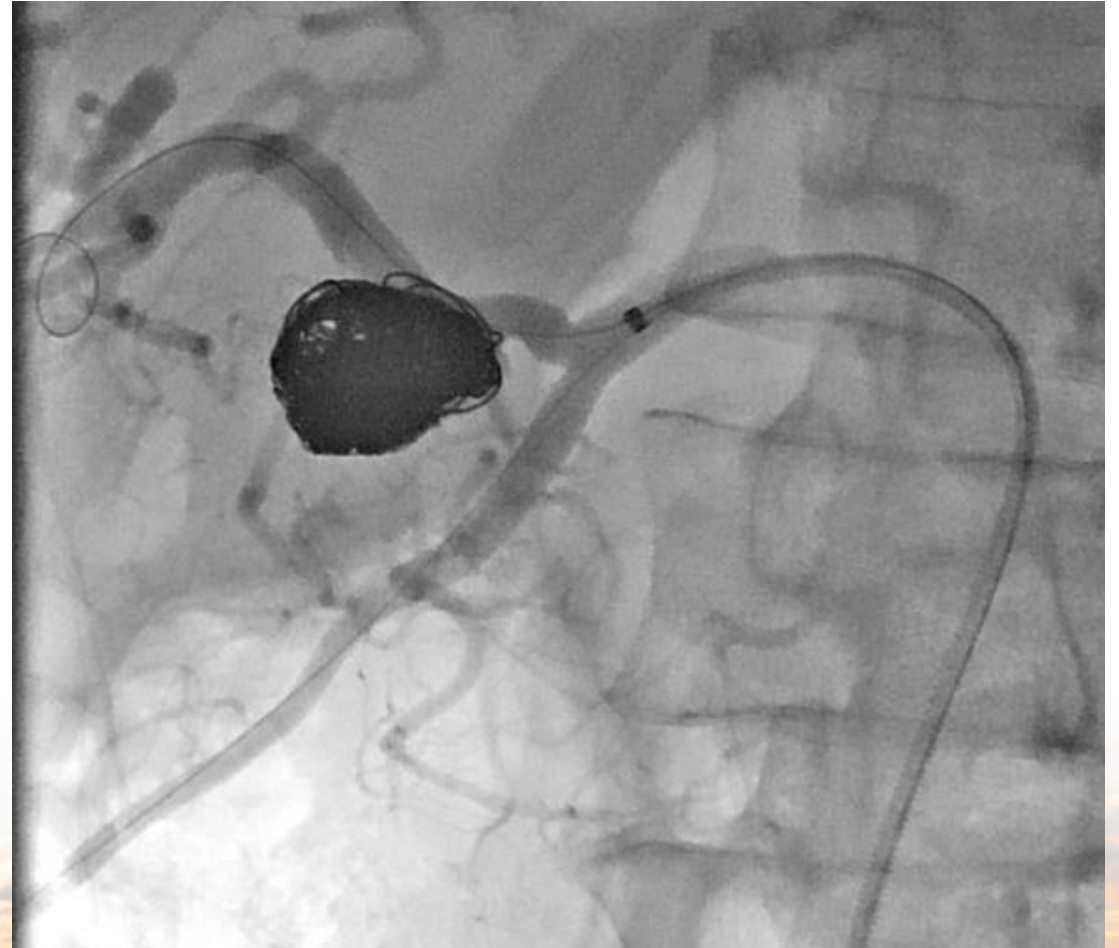


# Hepatic Artery Aneurysm

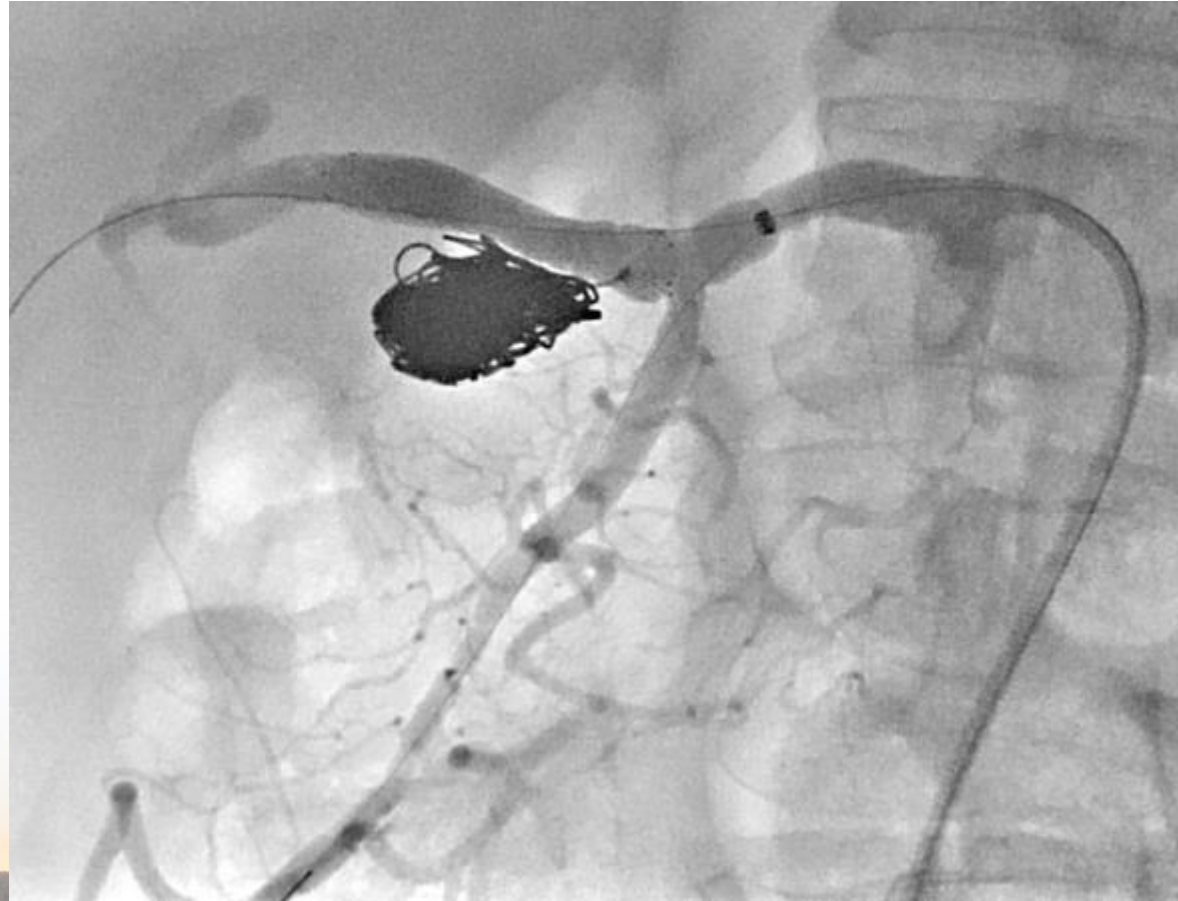
- 20% of splanchnic artery aneurysms
- Diagnosis:
  - CTA (g1/qb).
  - Angio for preop planning (g1/qB).
- Treatment:
  - Pseudoaneurysm: Any size (g1/qA).
  - Symptomatic: Any size (g1/qA)
  - Asymptomatic true: >2 cm (g1/qA)
  - Asymptomatic true with comorbidity: >5 cm (g1/qB)



# Hepatic Artery Aneurysm



# Hepatic Artery Aneurysm





# Surveillance

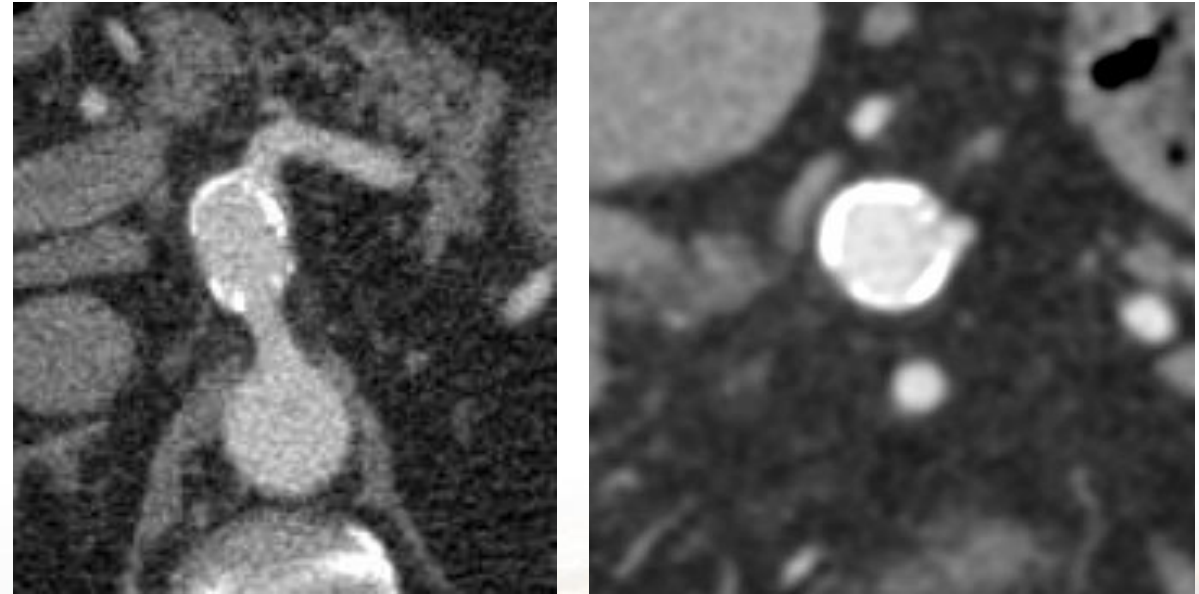
- SAA: Annual with CTA/Ultrasound.
- CCA: Annual with CTA.
- HAA: Annual with CTA.
- SMAA: Annual CTA to observe post-surgical patients.
- RAA:
  - Annual imaging until two studies stable.
  - Every two to three years thereafter.





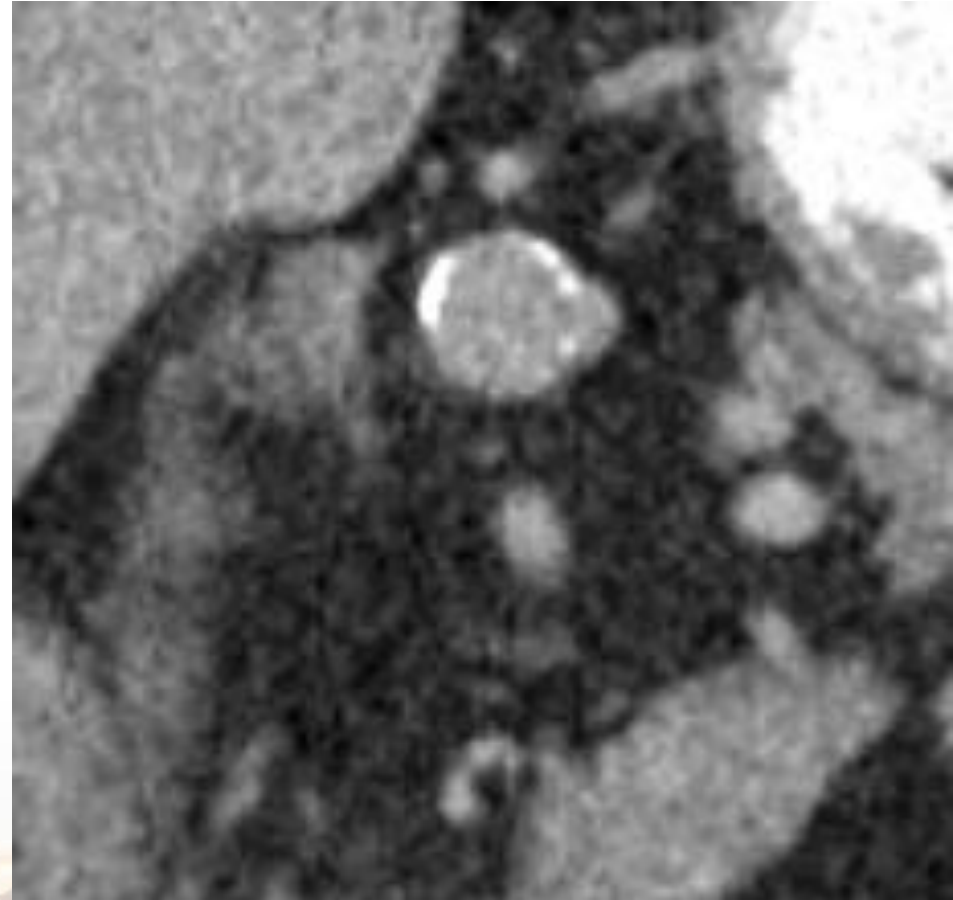
# Surveillance: Stability and Comorbidity

- Must take patient factors into account when developing a management strategy.
  - Procedure risk.
  - Type of aneurysm:
    - True.
    - Pseudoaneurysm.
  - Growth trajectory.

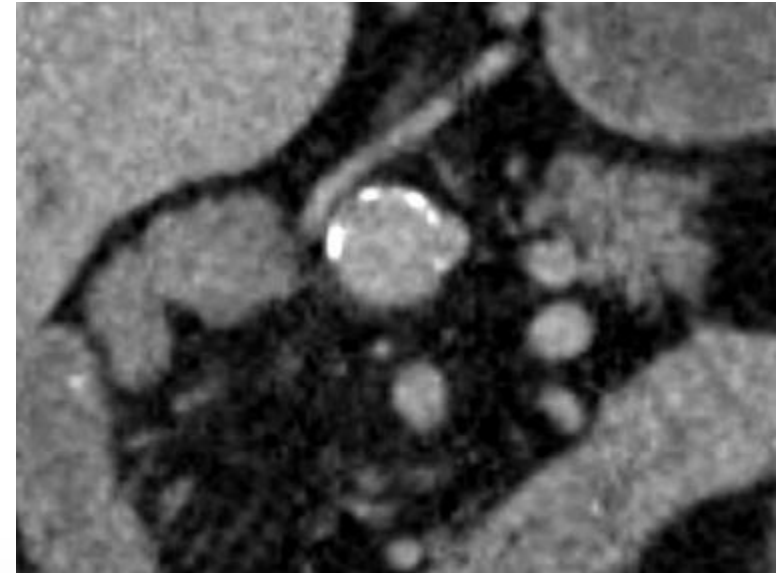


2020

2009



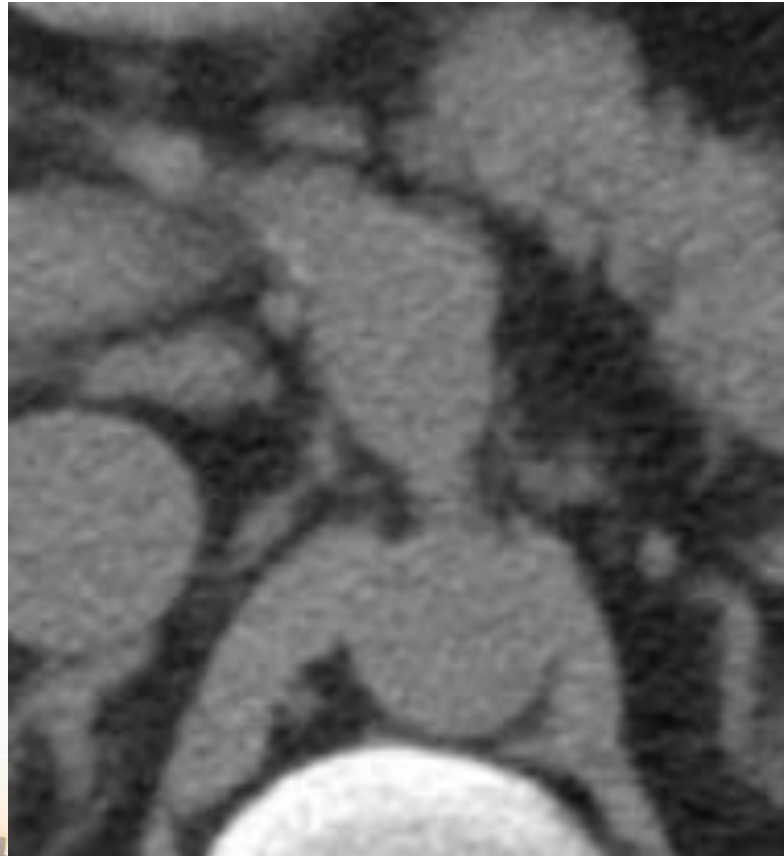
2008



[STRANDNESS.ORG](http://STRANDNESS.ORG)



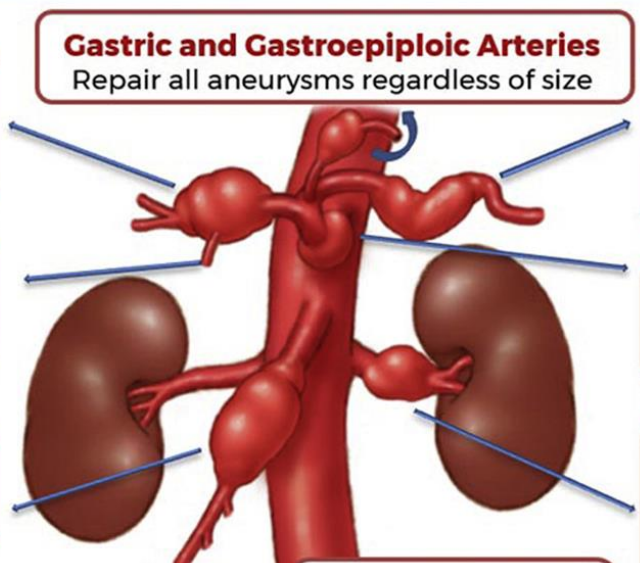
2003





# Summary

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