SPLENIC INCIDENTALOMAS

Richard M. Gore, MD

North Shore University Health System
University of Chicago
Evanston, IL

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CTs 200 CONSECUTIVE ER PATIENTS OLDER THAN 40

- KIDNEYOMAS  63%
- LIVEROMAS     42%
- SPLENICOMAS   18%
- ADRENALOMAS   8%
- PANCREASOMAS  3%
WHY DOES THE SPLEEN LOOK SO FUNKY ON HAP, PVP?
Spleen receives 40% of blood volume of portal circulation

Spleen receives 4% of cardiac output, 0.3% of body mass; CO/M = 13.3

Brain gets 20% of cardiac output, 2% of body mass; CO/M = 10.0
SPLENIC BLOOD FLOW

- Arterial to white pulp is fast
- Arterial to red pulp is slow
WHY DOES THE SPLENIC ARTERY BECOME SO TORTUOUS?
WHY DOES THE SPLENIC ARTERY BECOME SO TORTUOUS?

- Movement of the spleen
- Differing volumes of blood
- Pulsatile nature of blood flow causes excess stretching of the artery
- Multiple branches of the splenic artery that supply the pancreas serve as an anchor causing multiple, small excursions from a direct path and prevent the formation of one large loop
SPLENIC ARTERY ANEURYSMS
Incidental splenic artery aneurysms found in 0.7% of population but in some autopsy series as high as 10%

Second most common intra-abdominal aneurysm with aorto-iliac disease first

F:M; 4:1 - likely hormonal and hemodynamic changes of pregnancy

Most patients are asymptomatic
The peak age of detection is the sixth decade.

Related to increased blood flow through the splenic artery.

Portal hypertension with large portosystemic shunts causes a rise in portal blood inflow volume which is thought to increase the aneurysmal propensity of the splenic artery.
Atherosclerosis is the commonest pathological finding and is probably a post-aneurysmal phenomenon rather than a primary cause of the aneurysm.

Half the ruptures occur in pregnant women and the mortality after rupture is 70-90%.
MANAGEMENT OF INCIDENTAL SPLENIC ARTERY ANEURYSMS

- Asymptomatic patients > 60 years with SAA < 2 cm, F/U CT in 1 year
- Embolize: SAA > 3 cm, symptomatic, or in women of childbearing age, since pregnancy is a major risk factor for rupture
- ? management of SAA 2-3 cm in size
INCIDENTAL OF LOW DENSITY SPLENIC DITZELS

- 7.6 per 10,000 at autopsy
- 1% on ultrasound *
- 18% splenic ditzels in my MDCT practice

# Martins Classification of Splenic Cysts

## Primary: True
- Congenital
- Parasitic
- Neoplastic

## Secondary: False
- Remnant of trauma
- Remnant of infarction
- Remnant of infection
- Pancreatic pseudocyst
PRIMARY CYSTS: CELL LINED INTERNAL WALL

- Epithelial cysts
  - mesothelial
dermoid
epidermoid
- Hydatid disease
CONGENITAL SPLENIC CYSTS

- Epithelial/mesothelial lining
- From embryonic inclusions
- 20% of splenic cysts in US
- Most are large and solitary
- Calcification rare
PRIMARY CYSTS: CELL LINED INTERNAL WALL

- Epithelial cysts
  - mesothelial
  - dermoid
  - epidermoid
- Hydatid disease
SPLENIC ECHINOCOCCOSIS

- Most common splenic cyst in endemic areas
- 2% of patients with echinococcosis
- Pain, splenomegaly, cyst rupture - anaphylactctic shock
- Nonenhancing cysts ± daughter cysts
- Rim calcification in 45%
SECONDARY CYSTS: NO CELL LINED INTERNAL WALL

- Remnant of trauma
- Remnant of infarct
- Remnant of infect
- Pancreatitis
POST-TRAUMATIC SPLENIC CYSTS

- No cell lining- “false” cysts
- 80% of splenic cysts in US
- From an organized hematoma
- Large, typically unilocular
- Mural calcifiction: 9-25%
SECONDARY CYSTS: NO CELL LINED INTERNAL WALL

- Remnant of trauma
- Remnant of infarct
- Remnant of infection
- Pancreatitis
SPLENIC INFARCT

- Emboli, atherosclerosis, vasculitis
- If small: asymptomatic
- If large: LUQ pain, fever
- Wedge shaped decreased density, sharp margins, capsular enhancement
- Heal with a scar
SECONDARY CYSTS: NO CELL LINED INTERNAL WALL

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SECONDARY CYSTS: NO CELL LINED INTERNAL WALL

- Remnant of trauma
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- Pancreatitis
DIVOTS

- Remnant of trauma
- Remnant of infarct
- Remnant of infect
- Congenital clefts
CYST WALL CALCIFICATIONS

- Can occur in any primary or secondary splenic cyst
SPLENIC METASTASES

- SEEN IN ONLY 7.1% OF ONCOL PTS
- SPLENIC A, RETROGRADE IN SPLENIC V IN PORTAL HTN, LYMPHATICS
- 21% BREAST, 18% LUNG, 8% OVARY, 6% MELANOMA, 6% PROSTATE
- % WITH SPLENIC METS: MELANOMA 34%, BREAST 12%, OVARY 12%, LUNG 9%
SPLENIC METASTASES

- Seen in only 7.1% of oncol pts
- Splenic A, retrograde in splenic V in portal HTN, lymphatics
- 21% breast, 18% lung, 8% ovary, 6% melanoma, 6% prostate
- % with splenic mets: melanoma 34%, breast 12%, ovary 12%, lung 9%
SPLENIC METASTASES
SPLENIC HEMANGIOMAS

- MOST COMMON BENIGN TUMOR
- CAN RUPTURE IF LARGE
- MAY BE MULTIPLE AND ASSOCIATED WITH HEMANGIOMAS ELSEWHERE
- DDx: ANGIOSARC (ANEMIA, CONSUM COAGULOPATHY, RUPTURE)
MULTIPLE SPLENIC LESIONS: DDx

- INFECTION: MTb, MAC, fungal, PCP
- INFLAMMATION: Sarcoid, Wegeners
- BENIGN TUMOR: hemangioma, littoral cell
- MALIGNANT TUMOR: lymphoma, mets
- OTHER: peliosis, Gamma-Gandy bodies, dilantin reaction, Gaucher’s disease
GAMNA-GANDY BODIES

- Iron deposition from repair of focal hemorrhage
- Contains iron, collagen, elastic fibers, calcification
- Results from congestive splenomegaly
- Seen in 9-12% patients with portal HTN
- Seen in SSA, hemochromatosis
MULTIPLE SPLENIC LESIONS: SARCOID
FORGET ABOUT IT

FOR MOST SPLENIC INCIDENTALOMAS