A 27 year old male presented to the Emergency Room with 3 days of worsening left shoulder and abdominal pain.

His pain was diffuse, constant, and not worsened by eating. No nausea, vomiting, diarrhea, hematemesis, or hematochezia. No abdominal trauma leading up to the abdominal pain.

He did admit to self-induced vomiting from bulimia. The pain started several hours after a particularly forceful bout of retching.
PMH
Bulimia
Depression
Morbid obesity s/p abdominoplasty in 2009 after intentional weight loss
Strep throat 3 weeks ago

MEDICATIONS
Zoloft 100mg po daily

ALLERGIES
None

SOCIAL HISTORY
Born in Iowa and previously worked on his family farm with animals. Currently lives in California. Works as a pediatric nurse. He smokes 1 pack of cigarettes per week. He drinks alcohol occasionally. No illicit drug use. No recent travel. Sexually active with men. He had a negative HIV test 3 weeks ago.

FAMILY HISTORY
No history of hematologic malignancy or hematologic disorders

PHYSICAL EXAM
T: 36.7°C  BP: 105/70 HR 84 RR 18, 100% on RA General: relatively well appearing
Abdominal exam: diffuse tenderness to palpation of the abdomen.
Skin: no rashes

INITIAL LABS
WBC 7.6 (50% L)
HCT 28.5
PLTS 175
Na 137
K 3.8
BUN 15
creatinine 1.0
Total bilirubin 0.6
AST 26
ALT 30
Alkaline phosphatase 56
Protame 14.7
INR 1.2
Partial thromboplastin time 25.8
UA: neg heme, <5 RBC, <5 WBCs
Blood around spleen
Blood in Morrison's pouch

Blood in both gutters
Abdominal Apoplexy

= spontaneous hemoperitoneum
a “stroke” of the abdomen

Abdominal Apoplexy

CHARLES CARMELI, MD, NABIL MUNFAXH, MD, and JAMES W. BROOKS, MD, Richmond, Va

ABSTRACT: We describe the case of a patient with abdominal apoplexy, the spontaneous rupture of a visceral vessel. Laparotomy revealed a hematoma arising from a ruptured gastroepiploic artery. We report the usefulness of preoperative abdominal computed tomography and transgastric ultrasonography and discuss the condition of abdominal apoplexy. An increased awareness of the condition is perhaps the most valuable aspect of the early preoperative diagnosis of this potentially fatal condition.
Differential Diagnosis of Abdominal Apoplexy

**BLEEDING FROM A BLOOD VESSEL**

- Visceral artery rupture from atherosclerosis
  - middle colic artery
  - pancreaticoduodenal artery
  - gastroduodenal artery
  - splenic artery
- Ruptured visceral artery aneurysm
  - splenic artery, GDA, gastroepiploic, etc.
- Necrotizing arteritis
  - polyarteritis nodosa, rheumatoid arthritis
- Vomiting with avulsion of short gastrics

**BLEEDING FROM A SOLID ORGAN OR HOLLOW VISCUS**

- Liver
  - tumor (adenoma, HCC, met)
  - trauma
  - varix from portal hypertension
- Adrenal
  - Waterhouse-Friderichsen tumor (Pheochromocytoma)
- Ovaries
  - ectopic pregnancy
  - ovarian cyst
  - ovarian tumor
  - endometriosis (chocolate cyst)
  - retrograde menses
- Bladder
  - traumatic rupture tumor
- Small bowel / colon tumor

**Spleen**

- Trauma
- Neoplasm
- hodgkin's lymphoma
- NHL
- plasma cell leukemia
- AML
- CML
- MM
- Waldenstroms
- metastatic disease
- P. vera
- Congenital
- hemangiomas
- mesothelial cysts
- dermoid cysts
- autoimmune
- sarcoidosis, PAN, RA, Crohn's
- Hematologic
  - hemophilia, hemolytic anemia,
  - cooley's anemia, fealny's syndrome
- Infectious
  - Infectious mononucleosis
  - CMV
  - Viral hepatitis
  - Influenza
  - Dengue
  - HIV
  - Infective endocarditis
  - Typhoid fever
  - Tuberculosis
  - Brucellosis
  - Q-fever
  - Syphilis
  - Tularemia
  - Aspergillosis
  - Malaria
  - Relapsing fever
  - Kala-azar
  - Schistosomiasis
  - Echinococcal cysts
Case Report: CT findings

The blood around the spleen was heterogenous. Some was old, some was new. It looked lamellae along the posterior aspect of the spleen.

There was no radiographic sign of trauma anywhere.

Repeat CT angiogram showed no visceral artery aneurysms, no “blush” anywhere.

There were no tumors of the liver, spleen, or adrenals.

Operate or observe?!?

Case Report: Hospital Course

The patient was admitted to the surgical service for observation.

Serial hematocrits were obtained:

- Day 1: Transfused 2 units PRBCs
- Day 2: Hematocrit

After 72 hours he had continued abdominal pain, fevers to 39.1, WBC 12.
Case Report: Hospital Course

The patient was taken to the OR for diagnostic laparoscopy and washout

A large amount of blood was suctioned out of the abdomen

The spleen looked big

There was a subcapsular hematoma of the spleen posteriorly. In the middle of it, there was a capsular tear. No active bleeding.

Remove spleen or leave it in?

Case Report: Hospital Course

A laparoscopic splenectomy was performed.

The spleen’s mass was 3x normal

There was a lymphocytic infiltrate in the red pulp
increased CD8 cells in the red pulp
CD4:8 ratio was 1:20

A diagnostic test was obtained
EBNA Antibody: positive
EBV IgM: negative
Staining for EBV was negative
CMV Antibody: positive
Hepatitis panel: negative

HIV Antibody: positive
Confirmatory HIV western blot: positive
HIV p31 band: negative (confirms acute infxn)
HIV viral load: 7000 copies/ml
CD4 T-cells: 1243 (21%)

(recall that HIV antibody was negative 3 weeks prior)

Diagnosis: Acute HIV infection
Case 2

ID: 23 year-old woman with syncope and abdominal pain

HPI:
Gradual onset of lower abdominal pain over past 48 hours
Pain started in bilateral lower quadrants. Pain was constant, dull.

No nausea, vomiting, diarrhea, constipation, hematochezia.
No history of similar type pain.

Was orthostatic on day of admission, almost fainted. Came to E.R.

PMH
Menorrhagia, dx ovarian cyst, Rx OCPs
LMP 3 weeks ago

PSH
none

MEDICATIONS
OCPs

ALLERGIES
None

LABS
CBC  10 > 34 < 164
BUN 6  creat 0.8
INR 1.2  PTT 24.7
Upreg negative

SOCIAL HISTORY
works as a chef in San Francisco
smokes 1-5 cigarettes per week
ETOH 1-2 drinks / week
No IVDA or recreational drugs
monogamous, uses condoms

FAMILY HISTORY
No history of hematologic malignancy or hematologic disorders

Mother had ruptured ovarian cyst

PHYSICAL EXAM
37.4 128/78 78 12 100% RA
distended abdomen
do peritoneal signs

tender to deep palpation LLQ, RLQ
Diagnosis: Hemorrhagic ovarian cyst

Case 2

The patient was admitted for observation and serial hematocrits

The orthostasis resolved with IV fluids

The pain resolved on its own

The patient was discharged on the third hospital day
Conclusions

Abdominal apoplexy is defined as acute hemoperitoneum.

The differential diagnosis is broad.

Often the clinical history and past medical history will provide clues to the source of bleeding.

The best initial diagnostic study is a CT with IV contrast, including both arterial and venous phase with fine (2.5mm) cuts.

Indications for operative exploration of the abdomen are:
- hemodynamic instability
- ongoing transfusion requirement
- arterial blush on CT (IR embolization is alternative therapy)
- intransigence of symptoms
- inability to definitively diagnose the source of bleeding.

Otherwise treatment is determined by diagnosis.