



# The COVID Six-Pack

Christopher Parker, DO<sup>1</sup> and Arielle Port, MD<sup>2</sup>

<sup>1</sup>Department of Emergency Medicine,  
University of Illinois Hospital and Health Science System, Chicago, IL

<sup>2</sup>Department of Emergency Medicine,  
Advocate Aurora Illinois Masonic Medical Center, Chicago, IL



## Chief Complaint

Abdominal pain

## History of Present Illness

54-year-old male with atrial fibrillation, mitral valve replacement on warfarin, hypertension, and congestive heart failure presents to the ED with abdominal pain. Patient states he has had constant left-sided abdominal pain with radiation to the left flank that has progressively worsened over the past two days. He tested positive for COVID-19 two weeks ago and still has a persistent, dry cough. The pain is exacerbated by coughing and moving. He describes associated nausea, but no vomiting. Denies chest pain, shortness of breath, fevers, diarrhea, melena, or bright red blood per rectum. His last bowel movement was yesterday and described as normal.

## Physical Exam

T 36.4°C, BP 141/72, HR 62, RR 18, SpO2 98%

GEN: Alert, no apparent distress

CV: Regular rate and rhythm, no murmur

RESP: Clear to auscultation bilaterally

GI: Left flank and abdominal ecchymosis (Fig. 1), diffuse abdominal tenderness, worse in left upper quadrant with associated firmness, no rebound tenderness, guarding, or rigidity

BACK: No CVA tenderness, mild left flank ecchymosis

## Labs

Sodium-137 mmol/L

Glucose-156 mg/dL

Potassium-4.3 mmol/L

WBC-12.0 K/mcL

Chloride-100 mmol/L

Hemoglobin-10.4 g/dL

Carbon Dioxide-30 mmol/L

Platelets-239 K/mcL

Creatinine-0.71 mg/dL

INR-8.3

BUN-15 mg/dL

PTT-55 sec

## Questions

1. Based off the case presentation and images, what is the most likely diagnosis?
2. What are risk factors for this diagnosis?

## Answers

1. Spontaneous rectus sheath hematoma
2. Anticoagulation, coughing, older age, and hypertension



Fig. 1 Physical exam



Fig. 2 Point-of-care ultrasound of left upper quadrant



Fig. 3 CT abdomen and pelvis

## Discussion

The patient was evaluated by POCUS, which showed a well-defined hypoechoic fluid collection with multiple fibrous septa and an internal hyperechoic layer (Fig. 2), indicating clot formation. CT revealed a 12 cm x 15 cm hematoma within the left anterolateral abdominal wall musculature causing mass effect on the abdominal cavity, with no intraperitoneal fluid (Fig. 3). General surgery was consulted, warfarin was held, and the patient was admitted for observation.

Spontaneous rectus sheath hematoma is becoming more common as anticoagulant therapy is increasingly prescribed. Rectus sheath hematoma is caused by injury to the epigastric vessels or tears in the abdominal wall musculature. Risk factors include anticoagulation, coughing, repeated Valsalva maneuvers, pregnancy, older age, hypertension, trauma, and invasive procedures.

Presentation includes abdominal pain, distention, and abdominal wall mass. Evaluation with POCUS will often reveal a hypoechoic fluid collection in the abdominal wall with a negative FAST exam. Color Doppler can screen for a pulsatile arterial bleed. CT provides the definitive diagnosis and evaluates for active bleeding. Labs are used to assess for acute blood loss anemia and coagulopathy.

Surgical consult is often indicated. Small hematomas are usually treated conservatively with bedrest, analgesia, ice, compression, and serial hemoglobin monitoring. Larger hematomas may require blood transfusion, anticoagulant reversal, arterial embolization, or laparotomy.

## Pearls

- Rectus sheath hematoma is a potentially life-threatening diagnosis that must be considered by ED providers. Prevalence is expected to increase due to prescribing of anticoagulation and COVID-19 respiratory infection.
- Rapid diagnosis can be made with the use of POCUS
- Small hematomas are managed conservatively, while large hematomas may require aggressive intervention.

## References

- Carr C, Rhyne R. Diagnosis of Rectus Sheath Hematoma by Point-of-Care Ultrasound. J Emerg Med. 2019;56(6):680-3.
- Karapolat B, Tasdelen HA, Korkmaz HAA. Conservative Treatment of Spontaneous Rectus Sheath Hematomas: Single Center Experience and Literature Review. Emerg Med Int. 2019;2019:2406873.