



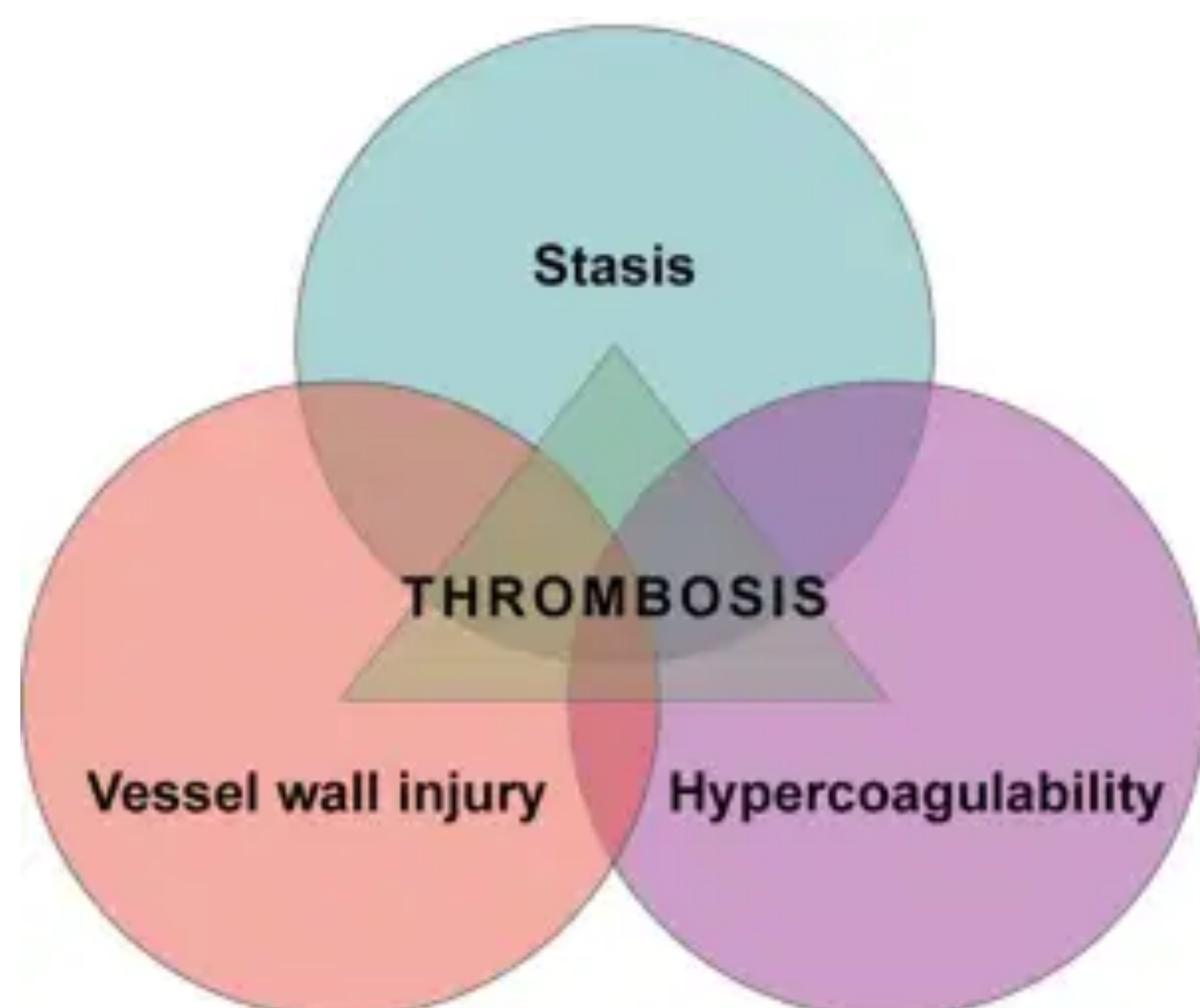
# Sub-Massive Pulmonary Embolism from Worsening of Gouty Arthritis due to the COVID-19 Pandemic.

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## INTRODUCTION

- Gout is the most common inflammatory arthritis in men and is associated with increased mortality and is an independent risk for cardiovascular disease.
- Several other types of inflammatory arthritis have been linked to increase risk of venous thromboembolism (VTE), leading to one-month fatality rate of 9.7% for PE and 4.1% for DVT<sup>1</sup>.
- A recent Canadian study concluded that independent of traditional VTE risk factors, patients with gout had a 20% increased risk of VTE and PE than the non-gout cohort group explained by the Virchow triad<sup>2</sup> (Figure 1).
- However, each gout patient may have different risk, and high-risk patients must be identified for aggressive treatment and prophylaxis.
- Several studies have demonstrated the dramatic increase in alcohol usage, drug use, mental health illness, and more sedentary lifestyles<sup>3,4</sup>.
- One study revealed a 54% increase in national sales of alcohol and 262% increase in online sale during a week in March 2020 compared to same period in 2019<sup>5</sup>.



## Case Description

- HPI: A 64-year-old African-American retired male presented to the ED with a 4-day history of shortness of breath and chest pain.
  - ROS: Positive for SOB, sub-sternal chest pain, dizziness, diaphoresis, and pleurisy. Negative for F/N/V/C, cough, hemoptysis, JVD, and edema.
- PMH: Gout, Essential HTN, Prostate Cancer s/p treatment, and proximal vein DVT.
  - Gout diagnosed several years ago. DVT diagnosed in early 2020 (Apixaban 5mg BID)
- SH: Lives alone, single, questionable hx of EtOH, immobile from gout flares and played basketball.
- Physical Exam: Flat affect, avoids eye contact. Notable for chest wall tenderness, warm-erythematous swollen tender 1<sup>st</sup> left MT joint, right wrist, and right knee. Phalangeal tophi b/l, and massive tophi of right elbow.
- Labs: Elevated troponins (176 ng/L,153,150), elevated D-dimer (5374 ng/ml), BNP (402 pg/ml) Uric Acid (8.2 mg/dl) PT (14.1 sec), INR (1.2), APTT (31.5 sec)
- Imaging: extensive emboli in left and right pulmonary, lobar, segmental, and subsegmental arteries.
- Diagnosis: hx, physical, labs, and imaging lead to diagnosis of Acute Provoked Pulmonary Embolism.
- Plan: Patient started on heparin drip, discharged on Apixaban 10mg BID for 7 days, 5 mg BID afterwards.

## Imaging



## Conclusions

- The onset of a VTE and PE in this patient represents the augmentation of Virchow's triad:
  - Inflammation and hypercoagulability- Worsening gout (EtOH); prior hx of prostate cancer; d/c apixaban
  - Stasis- sedentary COVID lifestyle (no basketball)
- Previous studies have shown the link between the COVID-19 pandemic and an increase in alcohol sales, depression, and a decrease in physical activity amongst an alarming number of people.
- Li et al. suggested to start higher risk gout patients on prophylactic anticoagulation and screen for DVT.
- It is imperative that clinicians remain cognizant of these factors when managing high risk patients and put in place a more rigorous follow up system during these trying times as it could potentially avoid life threatening situations.

## References

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