



REFERENCES




<https://qrco.de/bfWbbC>

# Echoes of the Unexpected: Sonographic Diagnosis of an Extensive DVT without Classic Signs or Clinical Suspicion

A case presentation structured around the reflective model by Driscoll<sup>(1)</sup>  
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## Patient History

♀ Female age 40 presented to her general practitioner with a history of right sided abdominal pain.

\*'Flu like' symptoms for 7 days + 2 day history of worsening right iliac fossa (RIF) pain radiating to her lower back and right leg which has disrupted sleep.

\*No associated nausea or vomiting.

\*History of a ventricular septal defect (VSD) repair as a child but no other relevant medical history.

\*Normally fit and well

\*No known allergies

\*Never smoked, social alcohol

\*No regular medications

\*BMI 19

\*Regular menstrual cycle

## Patient Journey

GP referred to surgical decision unit (SDU) with a working diagnosis appendicitis or ovarian pathology. Following clerking and examination in SDU renal colic was added to the differentials. The patient was referred for urgent ultrasound assessment, ultrasound facilities are embedded within SDU.

## 1. What?

### Ultrasound Referral: Clinical Details

"Sudden onset of right sided pain radiating into back, some blood in urine. ?ovarian, ?appendicitis, ?renal colic."

### Ultrasound Findings

Pelvic organs- Normal. Urinary tract- Normal  
No sonographic evidence of appendicitis  
**HOWEVER!**  
Incidental finding of tubular structure in RIF with echogenic static contents led to sonographer initiated assessment of deep venous system.

### Conclusion

Occlusive thrombus in the IVC, right common, internal and external iliac veins and right common femoral vein. All other deep veins patent (figure 1+2)

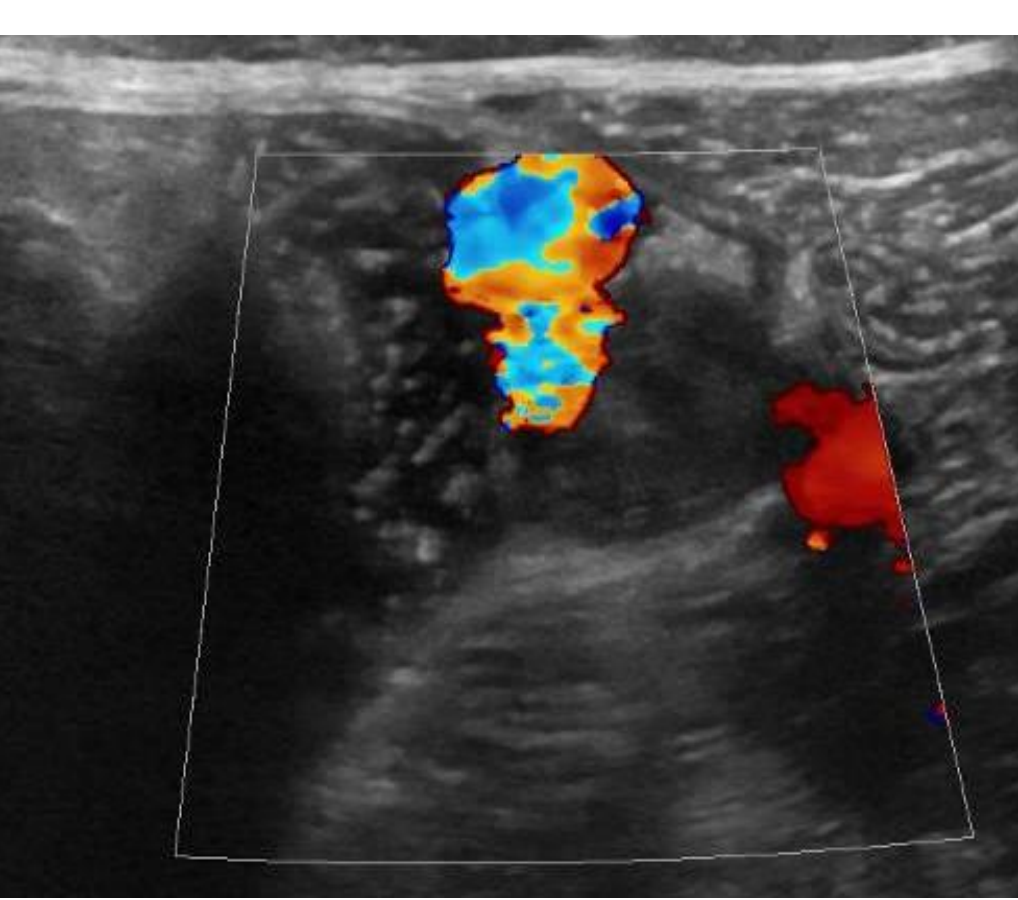
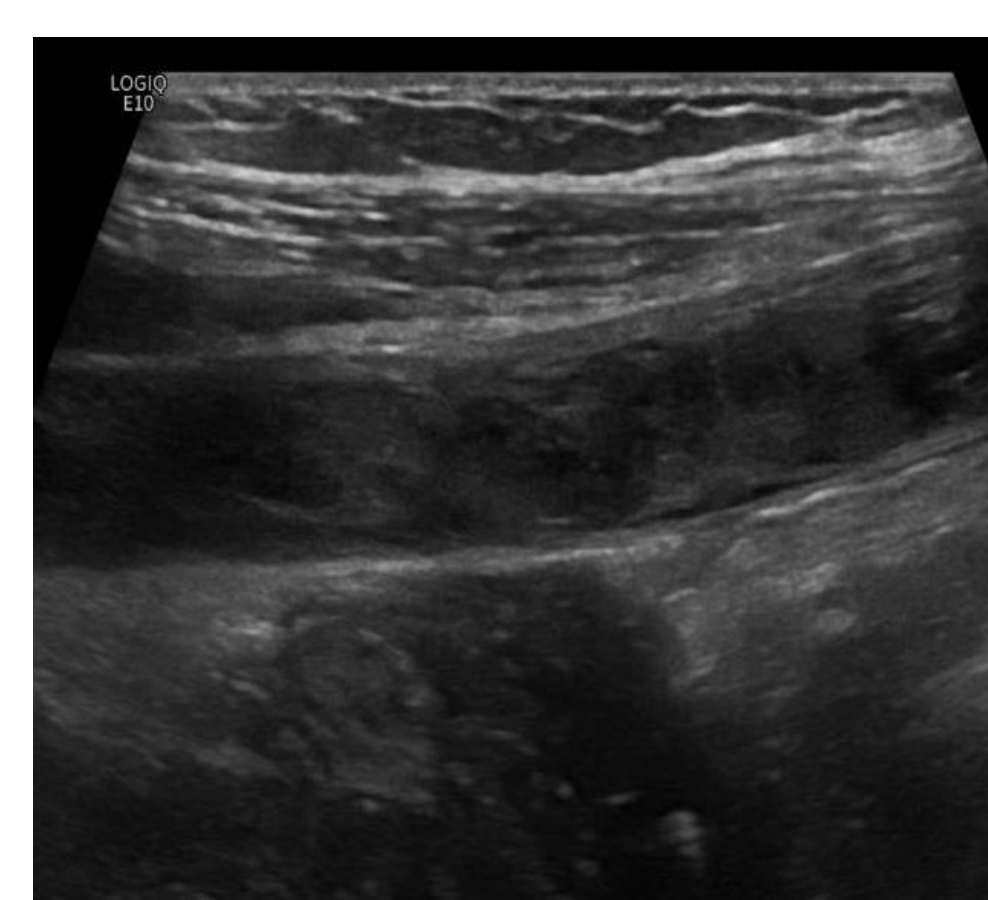


Figure 1. US images showing venous thrombus

## 2. So What?

This unexpected finding led to urgent intervention and a critical review of the patient's underlying health status.

As a sonographer, identifying complex conditions in seemingly straightforward cases requires a combination of clinical expertise, intuition and decision-making skills. The following challenges emerged during this case:

### 1 – UNEXPECTED FINDINGS

Initial clinical details suggested common surgical causes however, the sonographic evidence pointed to a non-surgical but serious condition with no prior clinical concern or common indicators such as lower limb swelling.

### 2 – CLINICAL DECISION MAKING

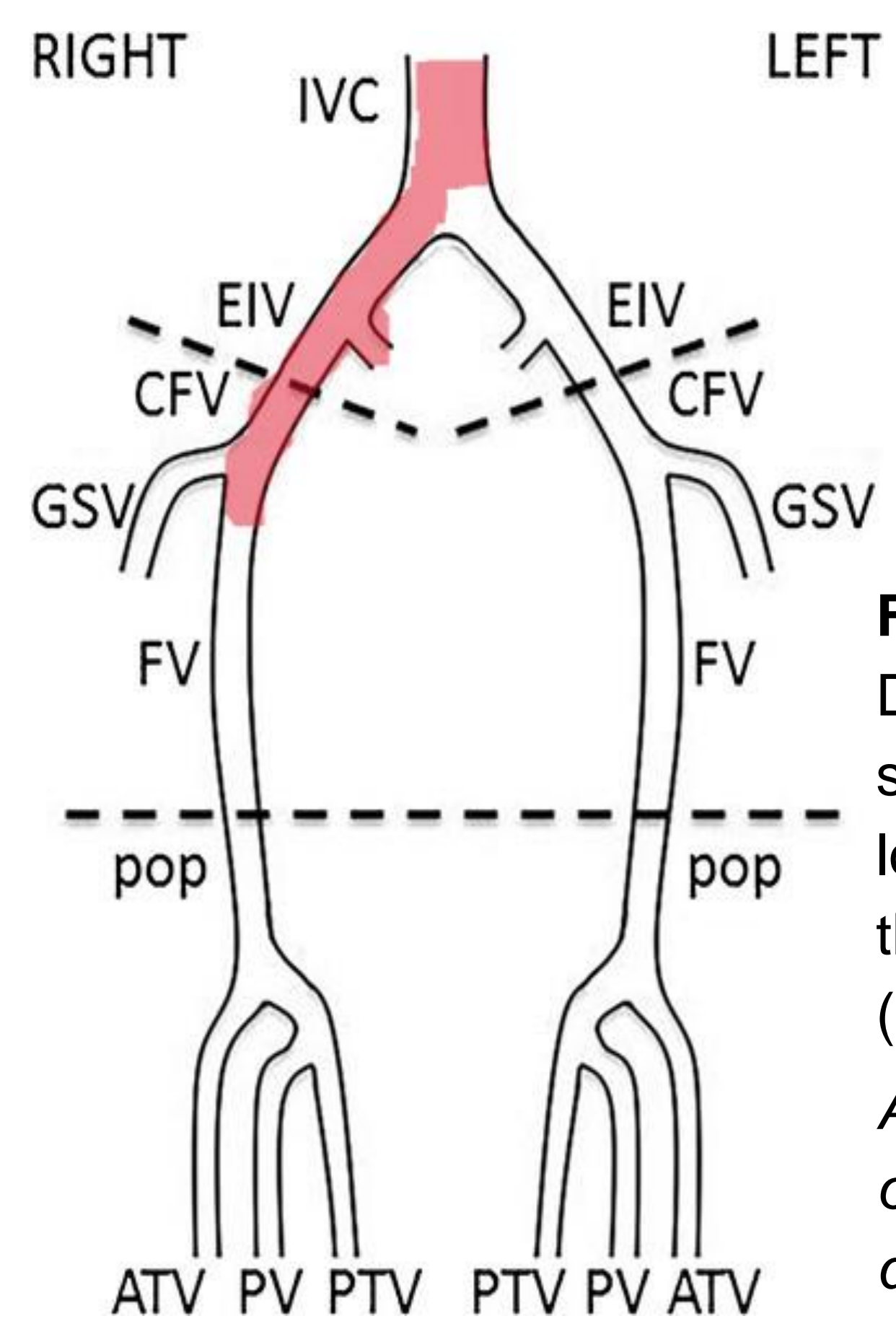
This case demonstrates the requirement to maintain an open mind, avoiding clinical bias such as availability or confirmation bias, which could have led to delayed or missed diagnosis. To overcome cognitive bias healthcare professionals must use critical thinking skills, possess broad knowledge and have an awareness of their own limitations<sup>(4)</sup>.  
This case demonstrates application of dual process theory, requiring a transition from system 1 to system 2 thinking<sup>(5)</sup>.

### 3 – VERBAL COMMUNICATION

Due to the urgency, findings were verbally communicated to the SDU clinicians without delay ensuring understanding of the risk of pulmonary embolism due to the thrombus in the IVC. This was crucial for the patient's immediate care as it prompted rapid medical intervention and hospital admission. As a sonographer, clear and prompt communication of critical or unexpected findings is a key aspect of patient care<sup>(6)</sup>.

### 4 – FOLLOW UP AND DIAGNOSIS

The diagnosis was confirmed by computed tomography (CT) imaging, ruling out any mass, malignancy, or physical cause. The patient was admitted and commenced on intravenous heparin initially and converted to Rivaroxaban on discharge.  
Haematology investigations led to a diagnosis of **antiphospholipid syndrome (APS) with lupus anticoagulant positivity**, a rare and complex autoimmune condition strongly associated with vascular thrombosis and pregnancy complications, requiring lifelong anticoagulation<sup>(7)</sup>. Whilst anticoagulation is effective at reducing thrombotic events it poses challenges such as the requirement for regular monitoring. The choice of DOAC vs Warfarin remains controversial with evidence of varying efficacy, safety and quality of life impacts on patients with APS<sup>(8,9)</sup>.



RIGHT IVC LEFT  
EIV CFV EIV CFV  
GSV FV GSV FV  
pop pop  
ATV PV PTV PTV PV ATV

Figure 2. Diagram showing location of thrombus (shaded red).  
Adapted from original diagram<sup>(2)</sup>

### Initial thoughts and actions of the sonographer:

Unexpected finding of an extensive deep vein thrombosis. Very unusual presentation with no lower limb swelling. Presence of thrombus into the IVC is concerning and high risk for pulmonary embolism<sup>(3)</sup>. I ensured no chest pain or shortness of breath at time of scan. I explained the findings to the patient, conveying urgency without undue alarm. I issued an urgent written and verbal report.

## 3. Now What?

The complexity of this case highlights the role of a sonographer in making critical clinical decisions and coordinating with the multidisciplinary team (MDT) to reduce diagnostic error. The unexpected clinical findings emphasised the need for careful attention to detail, flexibility in exploring beyond the initial clinical presentation and effective communication with the broader healthcare team.

Looking ahead, this case illustrates the importance of a comprehensive approach to diagnostic ultrasound, where the sonographer's role extends beyond simple scanning to include clinical reasoning, this being highlighted as a core capability of advanced clinical practice in the Multiprofessional Framework<sup>(10)</sup>.

In conclusion, by combining critical thinking, advanced sonographic skills, clinical examination and clinical reasoning, a sonographer who is integrated into the MDT is pivotal in identifying atypical presentations. Opportunity exists for an advanced practice sonographer to have a material impact on reduction in diagnostic error and therefore improve patient outcomes, this is directly translatable to the author's future role as an advanced clinical practitioner<sup>(11)</sup>.