

ACQUIRED FACTOR V DEFICIENCY IN A HIGH-THROMBOTIC-RISK PATIENT: DIAGNOSTIC DILEMMA AND SUCCESSFUL MANAGEMENT

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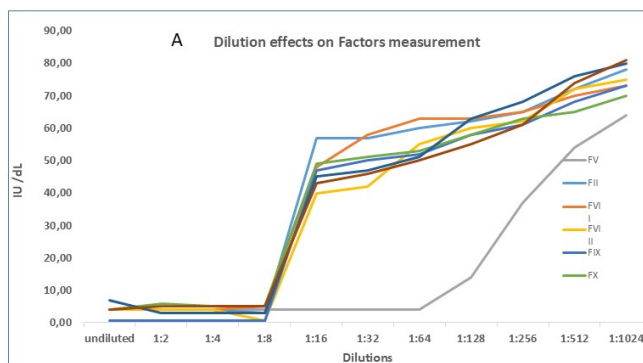
Background. Acquired Factor V (FV) inhibitors are rare and typically present with unexplained prolongation of Prothrombin Time (PT) and activated Partial Thromboplastin Time (aPTT) with normal Thrombin Time (TT). Presentation varies from asymptomatic laboratory findings to life-threatening haemorrhage or, paradoxically, thrombosis.

Case Report. An 80-year-old male recently discharged following severe pneumonia presented to the emergency department with pain and a large ecchymosis on his upper arm. His medical history included hypertension, aortic stenosis, a previous myocardial infarction, and peripheral obstructive arterial disease (external iliac artery) treated with clopidogrel. Initial tests showed extreme PT/aPTT prolongation with normal platelets, TT, fibrinogen, and Factor XIII. dRVVT assays revealed a strong lupus anticoagulant (LA) effect (ratio 2.8). To distinguish a "pseudo-deficiency" from a true inhibitor, serial plasma dilutions were performed: all factors normalised at 1:16 except for Factor V, which normalised only at 1:512, confirming a specific high-titre FV inhibitor (initially 445 BU). Point-of-care viscoelastic testing (ROTEM) showed markedly pathological EXTEM. Basing on the patient's high thrombotic risk and a stable clinical phenotype, initial therapy consisted only of prednisone (1 mg/kg/day). However, after 7 days, despite a decrease in the inhibitor titre to 177 BU, the patient developed acute abdominal pain. A CT scan revealed an 8 x 6 x 10 cm rectus abdominis haematoma associated with a haemoglobin drop of 2 g/dL. Haemostatic treatment with recombinant activat-

ed factor VII (rFVIIa) at 90 µg/kg was initiated but yielded no clinical benefit or improvement in EXTEM parameters. Tragically, following rFVIIa administration, the patient suffered a cerebellar stroke. Since FV inhibitors interfere with the prothrombinase complex, often making bypassing agents ineffective, and FV stored in platelet alpha-granules is partially activated and relatively resistant to circulating inhibitors, one unit of platelet concentrate was transfused to allow for urgent embolisation of the inferior epigastric artery. This led to the normalisation of EXTEM, and the procedure was completed without further bleeding. Besides, a pulsed immunosuppressive protocol with a low cumulative dose of cyclophosphamide, rituximab and steroids (CyDRi) was started. Unfortunately, two weeks later severe sepsis led to holding the immunosuppression for fourteen days; moreover, the last scheduled dose of cyclophosphamide was not administered. The following period was uneventful, and after 45 days from the start of Cydri, the patient is well with a normal coagulation profile.

Conclusions. In cases of unexplained PT/aPTT prolongation with normal TT, FV inhibitors must be considered. When initial assays suggest a multiple factor deficiency, serial plasma dilutions are essential to unmask the specific inhibitor. Clinicians must balance haemorrhagic and thrombosis risk using bypassing agents in vasculopathic patients. Platelet transfusion represents a critical haemostatic bridge. ROTEM can demonstrate and monitor the immediate haemostatic effect of platelet transfusion, providing real-time guidance for high-risk invasive procedures.

3.04 Acquired coagulation disorders



- **(A) Serial plasma dilution assay:** The line graph demonstrates the "dilution effect" used to differentiate non-specific suppression (Lupus Anticoagulant-like) from a high-titer specific inhibitor. While the activity of Factors II, VII, IX, and X normalized at a 1:16 dilution, FV activity remained undetectable, reaching normalization only at a 1:512 dilution. This pattern confirms a specific high-titer FV inhibitor (445 BU).
- **(B) Thromboelastometry (ROTEM) profiles:** The traces illustrate the profound impairment of the extrinsic pathway (**EXTEM**) caused by the acquired FV deficiency, while the **INTEM** profile remains relatively less affected or shows a different interference pattern.
- **(C) Response to transfusion therapy:** The comparison between traces highlights the rapid and complete normalization of the EXTEM profile following the transfusion of a single unit of platelet concentrate. This correction provides clinical evidence of the effectiveness of platelet-derived FV (stored in alpha-granules) in bypassing the circulating plasma inhibitor and restoring sufficient thrombin generation for surgical hemostasis.

