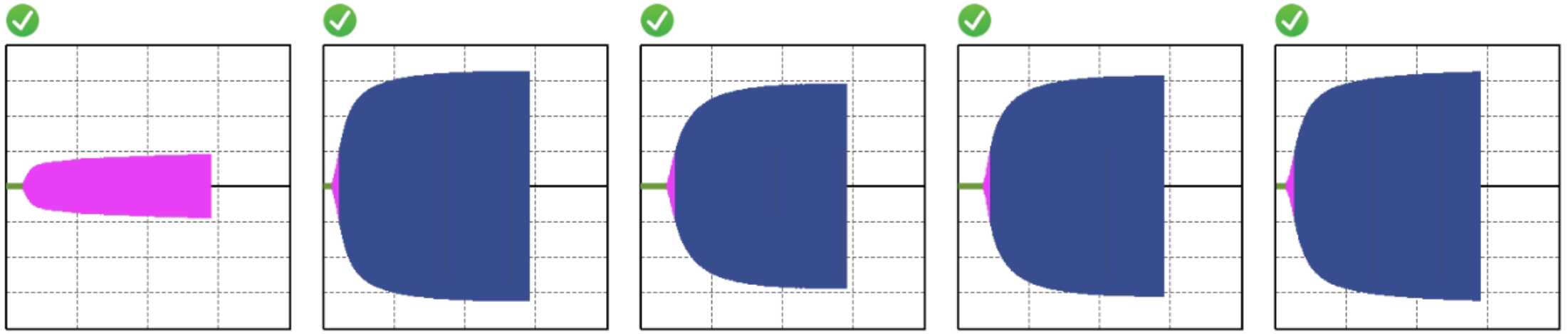
Clotpro case 1

- 75 year old male arrives in A&E after 1 metre fall downstairs.
- Presents confused with a mild HI and suspected fractured NOF.
- History of AF but anticoagulation therapy unknown.
- Blood sample drawn for coagulation panel testing by Clotpro

FIB-test			EX-test			IN-test			RVV-test			ECA-test		
CT	136s	▲ 55-87	CT	80s	▲ 38-65	CT	221s	▲ 139-187	CT	213s	▲ 48-77	CT	87s	▶ 68-100
A5	14mm	▶ 6-21	A5	55mm	▶ 39-58	A5	46mm	▶ 32-53	A5	51mm	▶ 38-55	A5	52mm	▶ 45-58
A10	16mm	▶ 7-23	A10	61mm	▶ 47-64	A10	54mm	▶ 41-61	A10	58mm	▶ 47-63	A10	59mm	▶ 54-66
MCF	18mm	▶ 9-27	MCF	65mm	▶ 53-68	MCF	58mm	▶ 49-65	MCF	62mm	▶ 54-68	MCF	65mm	▶ 61-72



Interpretation

Step 1: FIBtest A5 is 14mm no issues here with fibrinogen

Step 2: Given the patient's known medical history anti-coagulants are a potential issue in this case. The Clotpro is the only viscoelastic whole blood device with specific tests to assess this, using the CT.

- There are 2 test options the ECA-test or the RVV-test. The ECA-test is for the detection of thrombin antagonists , and the RVV-test is for the detection of FXa antagonists .

  a. Looking at the CT for the ECA-test: it is normal 87 secs therefore excludes thrombin inhibitor
  b. Looking at the CT for the RVV-test : the RVV CT is 213 secs which is greater than the EX-test CT of 80 secs . This is an indication of DOAC therapy & can exclude vitamin K antagonist therapy.

- Looking at the algorithm for the RVV-test the CT is > 100 sec (>50ng/ml) at 213 secs indicating a FXa antagonist effect is present
  One thing to note is that the CT in the RVV, EX and IN tests are all prolonged by Fxa antagonists because FX is in the coagulation cascade common pathway.
  It is improtant to note, especially for inpatients the RVV-test will be influenced by other anticoagulants targeting factor Xa- for example Unfractionated heparin, Low molecular weigh heparin (enoxaparin), Fondaparinux and Danaparoid

Step 3: Platelets, the EX-test A5 is 55 mm, this represents the platelet contribution to the clot.

This is normal result but due to the thrombin generated in the tissue factor extrinsic pathway test, it will not indicate the presence of anti- platelet medication

- **Follow up** – Family member provides medication details.

  Apixaban 2.5 mg BD for AF

ClotPro

Only treat abnormal value if SIGNIFICANT BLEEDING is present.

FIB-test A5 < 10mm
→ **FIBRINOGEN**

Note:
1g Fibrinogen
3-4 WB cryo / 1 Apheresis
1g = ~ 2mm

FIBRINOGEN
1

Impaired Fibrinolysis
TPA-test LT >400 secs

CLOT STABILITY
4

HYPERfibrinolysis
EX-test ML > 15%
→ TXA 1 gm

TARGETS
FIB-test A5>12mm
Ex-test A5 >35mm
Ex-Test CT<80sec

THROMBIN Generation OR ANTI-COAGULANTS
2

Factor Deficiency
Fib A5 >10mm
Ex-Test >80s
→ FFP

PLATELETS
3

EX-test A5 < 35 mm AND
FIB-test A5 > 10 mm
→ Platelets x 1 Dose
Consider Multiplate Testing & DDAVP

Anti-Coagulants

RVV Test	**Fxa Inhibitors/ LMWH** CT >100s ~50ng/ml CT 100-150s- DOAC EFFECT CT >150s RELEVANT effect- reversal indicated
ECA Test	**Direct Thrombin Inhibitors** CT >180s Dabigatan > 50ng/ml
IN-Test	**Heparin Effect** IN-test CT> 190s and $\frac{\textit{IN-test CT}}{\textit{HI-test CT}}$ ratio ≥ 1.25
Hi-Test	**Protamine** IN-test AND HI-test CT > 240 s

Physiological Targets
- T°>36
- pH>7.2
- iCa>1mmol/L