Elective Open AAA repair

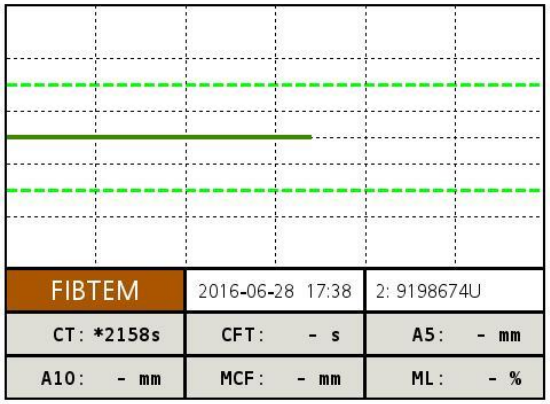
Disclaimer / Pre-amble

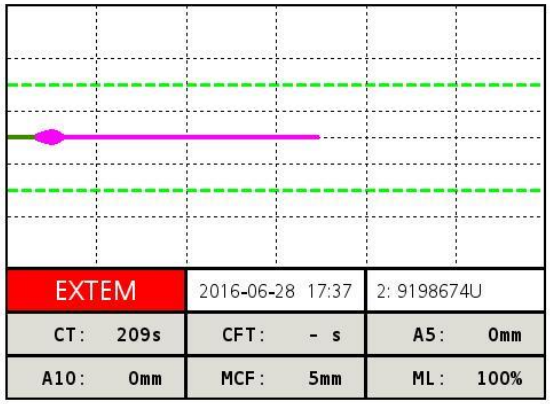
- These cases have been de-identified to protect the identity of the patient and the treating teams.
- These are all real cases and real ROTEMs. The individuals involved in these difficult cases have agreed to anonymously share these with us – thank you for your generosity.
- Successful management of the bleeding patient involves much more than just administration of blood products.
- The primary aim of these cases is to teach the use ROTEM guided blood product therapy. We have deliberately not included a lot of detail about some of the other aspects of management which might detract from this focus.

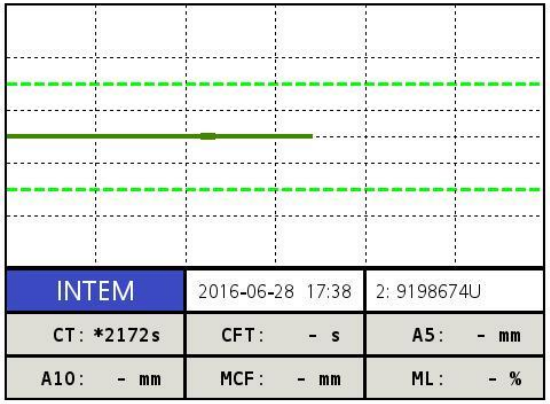
CASE 1

- Female in 70s
- Smoker and peripheral vascular disease
- Undergoing elective open AAA repair
- Difficult surgery and 4 hour transrenal cross clamp time
- Hyperkalaemia, arrhthymia and bleeding
- Receives FFP 2units, Red cells 4 units and cell saver 500ml then first ROTEM taken

CASE 1

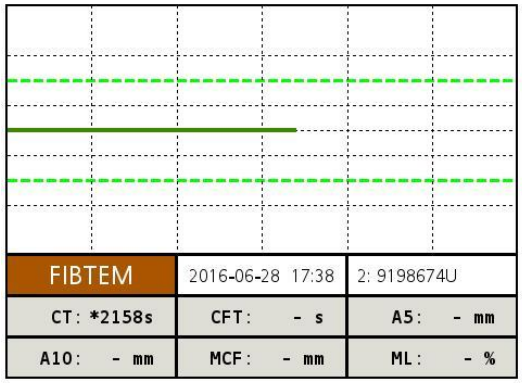


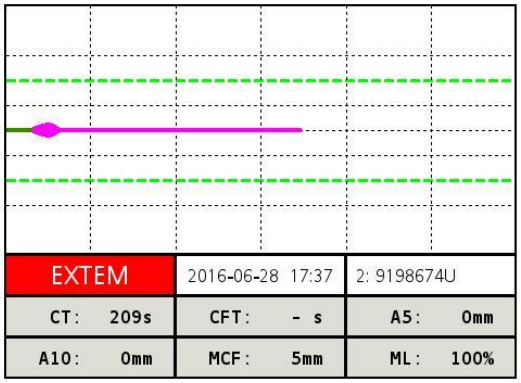


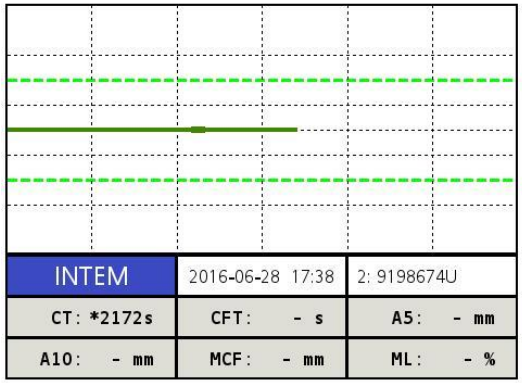


- Apply the KEMH ROTEM algorithm – even better use your hospitals if it has one.
- What blood products will you give?
- Don’t cheat & look at the next slide until you have written down what you think you should give.

CASE 1







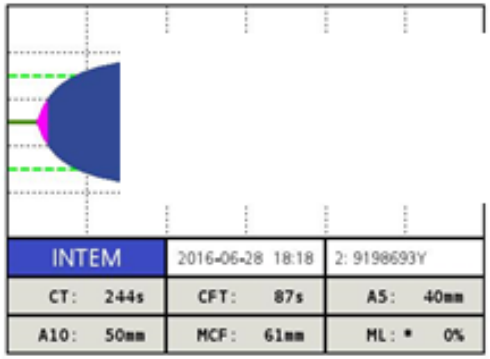
- Typical ROTEM for severe hyperfibrinolysis and multiple deficiencies
- Fibrinolysis: Fibtem CT > 600s and faint typical hyperfibrinolytic pattern in EXTEM – severe hyperfibrinolysis – give TXA
- Fibrinogen: Fibtem A5 < 2mm. Not measurable in presence of hyperfibrinolysis but likely to be very low as hyperfibrinolysis rapidly consumes fibrinogen – give some fibrinogen.
- Platelets: Extem A5 < 2mm – Not assessable in presence of hyperfibrinolysis ideally check the Aptem – in this case not done. Give TXA and repeat ROTEM.
- Factors: Extem CT = 209s also difficult to interprete check Aptem or give TXA and quickly recheck

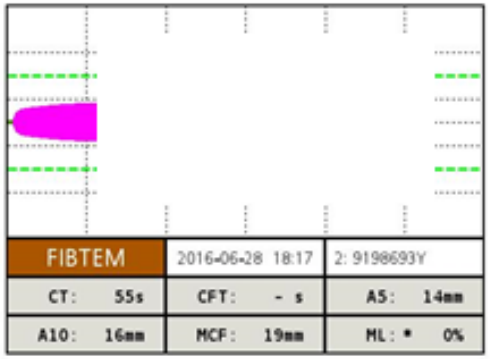
CASE 1

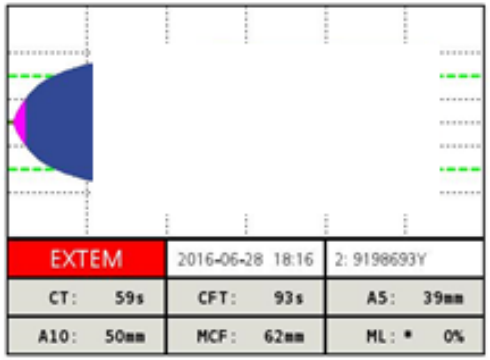
- She was given:
- 2u FFP
- 16u cryo
- 1 bag platelets
- TXA

And another ROTEM was performed:

CASE 1







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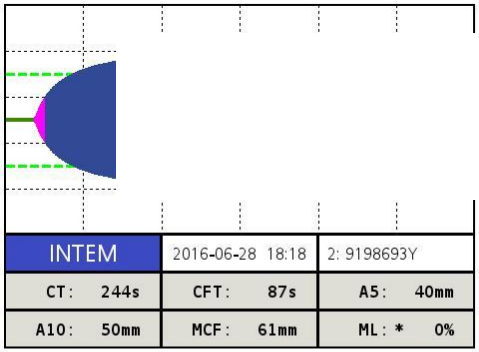
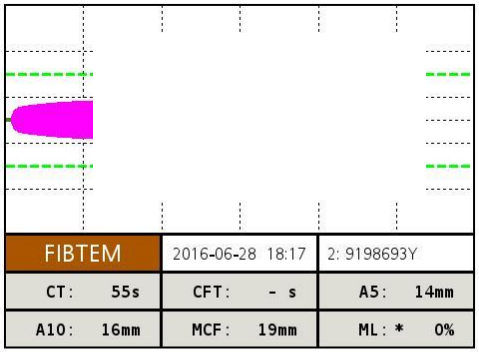
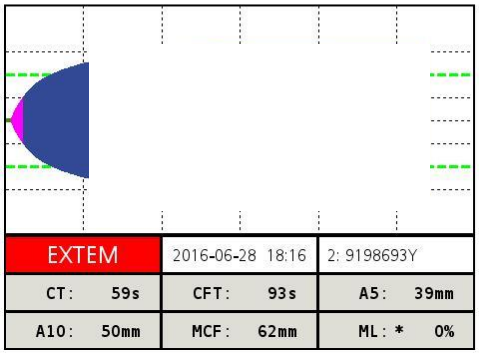
CASE 1



INTEM	2016-06-28 18:18	2: 9198693Y
CT: 244s	CFT: 87s	A5: 40mm
A10: 50mm	MCF: 61mm	ML: * 0%



FIBTEM	2016-06-28 18:17	2: 9198693Y
CT: 55s	CFT: - s	A5: 14mm
A10: 16mm	MCF: 19mm	ML: * 0%



EXTEM	2016-06-28 18:16	2: 9198693Y
CT: 59s	CFT: 93s	A5: 39mm
A10: 50mm	MCF: 62mm	ML: * 0%

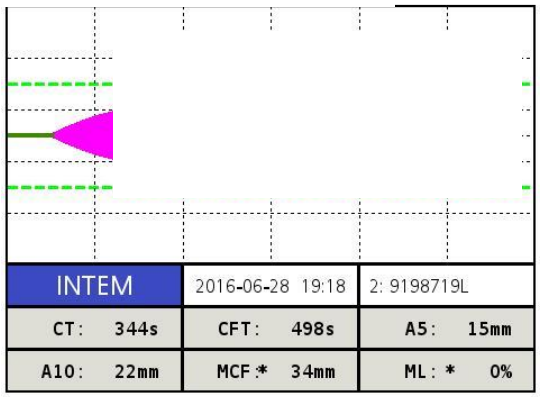
- Completely normalised ROTEM
- Fibrinolysis: Fibtem CT = 600s and EXTEM A5 >35mm, no evidence of hyperfibrinolysis now
- Fibrinogen: Fibtem A5 = 14mm. No fibrinogen needed
- Platelets: Extem A5 = 39mm No platelets needed
- Factors: Extem CT = 59s No factor therapy (FFP or PTX) needed

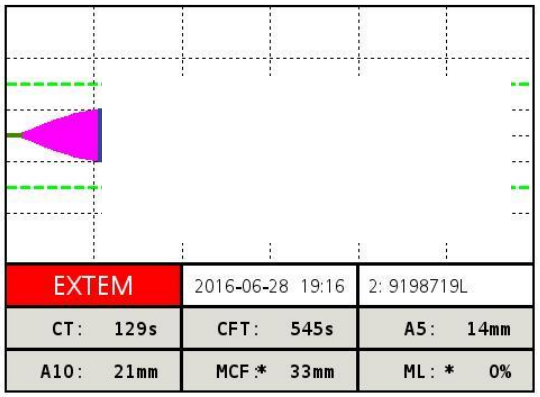
CASE 1 contd

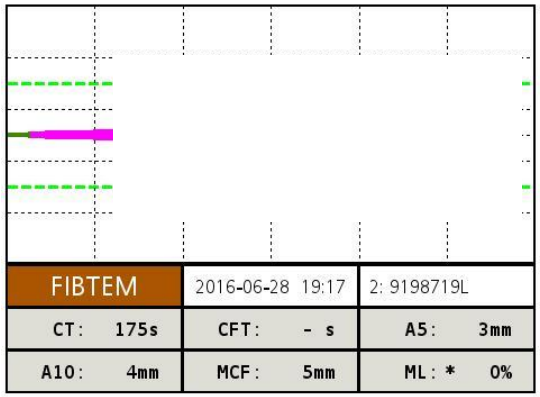
- Ongoing further major bleeding
- Reinfusion of 2 litres cell saver blood

And another ROTEM was performed:

CASE 1







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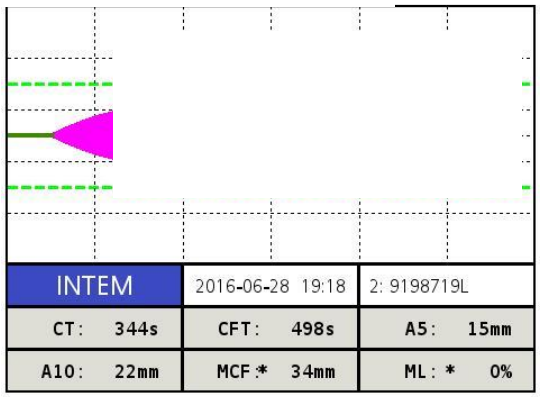
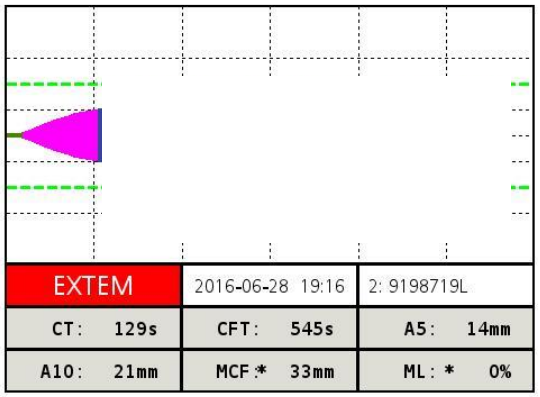
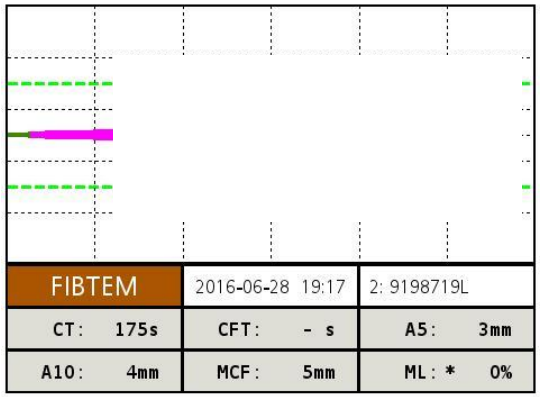


INTEM	2016-06-28 19:18	2: 9198719L
CT: 344s	CFT: 498s	A5: 15mm
A10: 22mm	MCF:* 34mm	ML: * 0%



EXTEM	2016-06-28 19:16	2: 9198719L
CT: 129s	CFT: 545s	A5: 14mm
A10: 21mm	MCF:* 33mm	ML: * 0%



FIBTEM	2016-06-28 19:17	2: 9198719L
CT: 175s	CFT: - s	A5: 3mm
A10: 4mm	MCF: 5mm	ML: * 0%

- Overview of ROTEM – severe coagulopathy again
- Fibrinolysis: Fibtem CT < 600s but EXTEM A5 = 14mm, consider repeat dose TXA
- Fibrinogen: Fibtem A5 = 3mm. Severe deficiency consider 5g of Fib conc or cryo 25units
- Platelets: Extem A5 = 14mm Platelets also needed
- Factors: Extem CT = 129s In the setting of low fibtem correct this first then reassess need for factors.

CASE 1 contd

- She was actually given:
- Cryo 16units
- FFP 1 unit
- Platelets one adult dose.

Unfortunately we don’t have the ROTEM following this but apparently it was normal.