

Successful Management of a Rare Case of Hypofibrinogenemia

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CASE DESCRIPTION

A 68-year-old female with a history of prolonged bleeding after a prior knee replacement was now scheduled to undergo a hip arthroplasty. She underwent pre-surgical testing one week before the procedure, during which she was found to have a fibrinogen level < 35mg/dL. PT and INR were also prolonged at 14.3 sec and 1.37, respectively.

After detailed discussions between hematology and anesthesiology, the team opted for general anesthesia in lieu of standard neuraxial anesthesia. In addition, they administered cryoprecipitate on the morning of surgery with a goal of fibrinogen >150mg/dL. She ultimately received a total of 40 units or roughly 600ml of cryoprecipitate. Her labs were carefully monitored and her final fibrinogen level increased to 233mg/dL. PT and INR were now within normal limits as well.

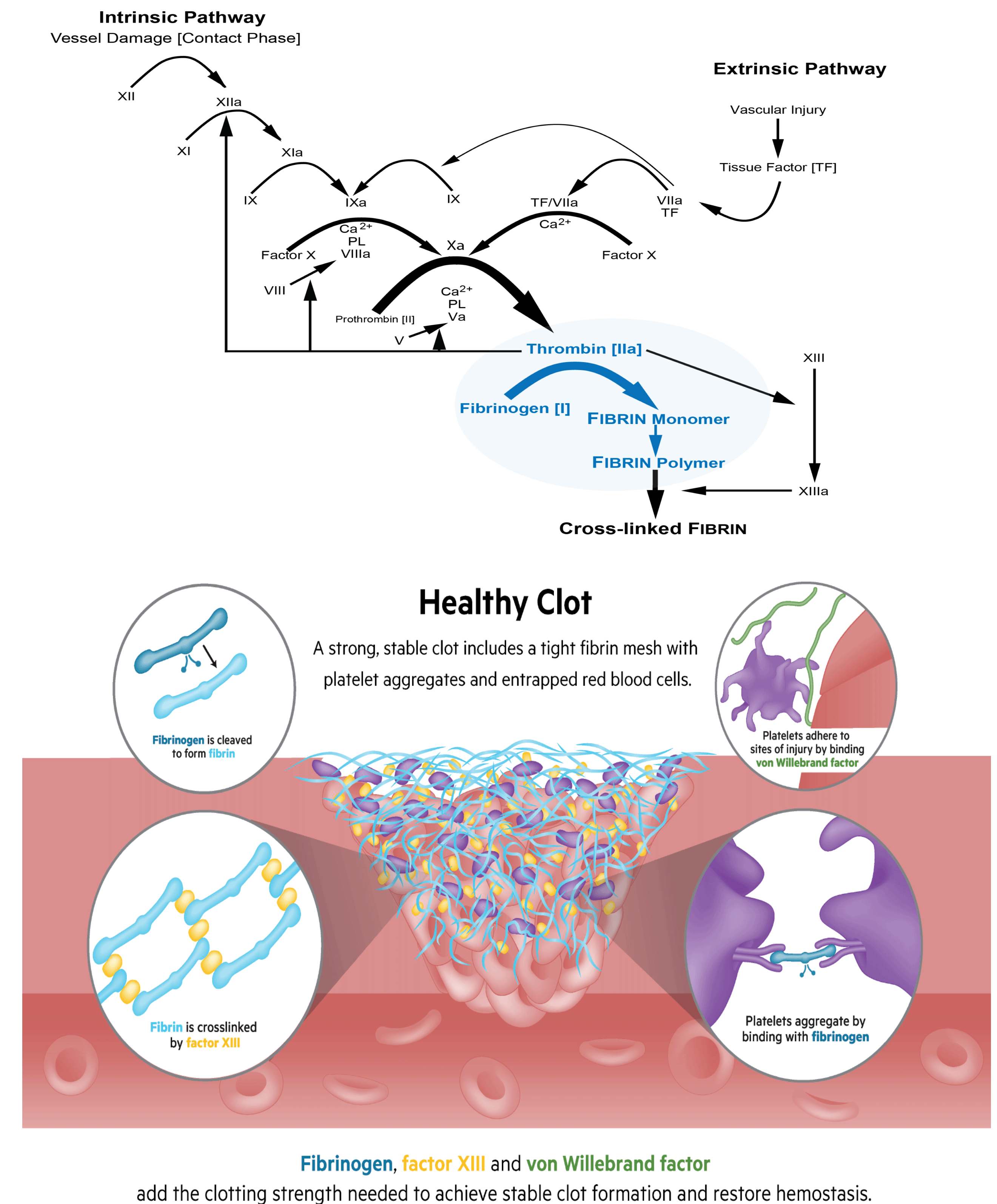
The team subsequently proceeded with surgery. The patient successfully underwent a hip replacement with minimal blood loss and without complications.

DISCUSSION

Fibrinogen is a protein that is crucial to clot formation and wound healing. Hypofibrinogenemia is a rare coagulopathy characterized by a deficiency of fibrinogen, a serum level 150mg/dL, and is either inherited or acquired from conditions such as liver disease. Clinical characteristics include spontaneous bleeding, particularly in soft-tissue or joints, and heavy menorrhagia. Management of patients with hypofibrinogenemia can be challenging, particularly in the perioperative setting.

As demonstrated here, neuraxial anesthesia, though generally an excellent choice for joint replacements, should be avoided in coagulopathy. In addition, multiple blood products contain fibrinogen, thus choosing the correct product for each patient further complicates management. Fibrinogen concentrate, or RiaSTAP, contains 1g of fibrinogen in 50mL and is the mainstay for treatment. However, it is costlier, less commonly available in the United States and does not contain other coagulation factors, unlike cryoprecipitate and fresh frozen plasma (FFP).

Alternatively, 200mL of cryoprecipitate contains 1.5g of fibrinogen, and 1 liter of FFP provides 2g of fibrinogen. In cases such as CHF, large volume precludes the use of cryoprecipitate or FFP in favor of fibrinogen concentrate. Management of hypofibrinogenemia in the perioperative setting is complex and necessitates careful consideration of the patient's situation between hematology and anesthesiology.



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