Hematoma: Complication of Coumadin

Emily Edwards DPM PGY-3[1], Sean Griffin DPM PGY-3[1], Shawn Ward DPM, FACFAS[2]

1- Foot & Ankle Surgical Residency Program, Mercy Health- St. Rita's Medical Center Lima, Ohio; 2- West Central Ohio Podiatry, Mercy Health- St. Rita's Medical Center Lima, Ohio

MERCYHEALTH
St. Rita's Medical Center
Foot & Ankle Surgical Residency Program

STATEMENT OF PURPOSE:

This case illustrates a surgical approach accompanied with wound care to treat a significant sized hematoma. The hematoma is a complication of Coumadin and resulted in multiple procedures.

BACKGROUND:

This case study focuses on the bleeding complication of Coumadin, leading to a significant hematoma with an in-depth healing process. The patient was initially on Coumadin, then switched to Xarelto. Xarelto was stopped due to vaginal bleeding, and the patient was started on Plavix. Plavix does not treat antiphospholipid syndrome; therefore, the patient was started on Eliquis. The patient has bilateral PEs while on Eliquis, which is why the patient is on Coumadin.

Initial Pre- Procedure Work-Up:

- Labs: INR 2.36, aPTT 41.3, WBC 13.4

- Patient given Vitamin K and FFP

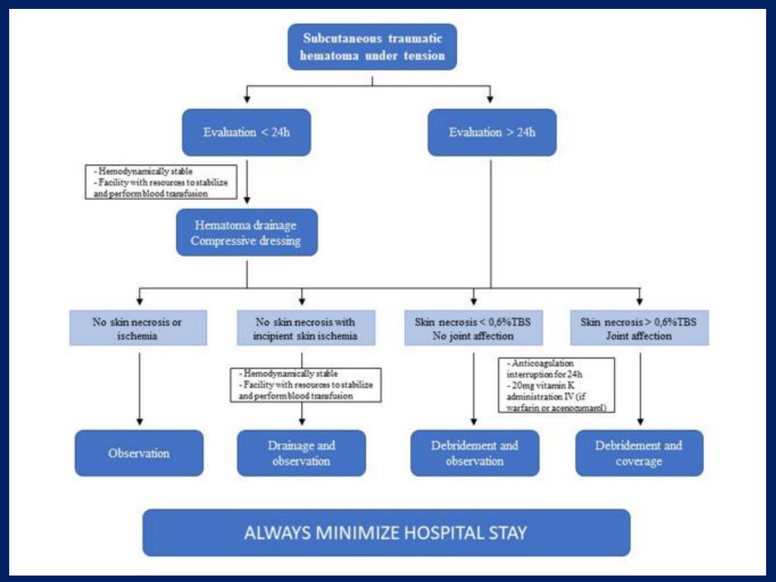


Figure 1: Flow chart on minimizing hospital stay
(credit to Reference 2)

CASE PRESENTATION:

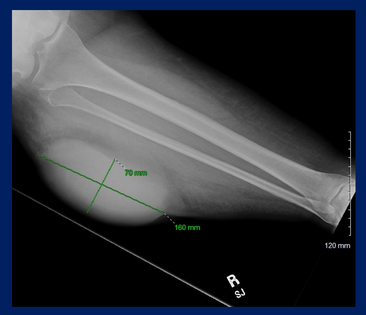
- *Initial presentation-* A 50-year-old patient presented to ED after bumping their leg on a metal laundry basket. The patient has a history of multiple unprovoked DVTs, PEs, stroke, antiphospholipid syndrome, Factor V Leiden and MTHFR mutation. The past medical history also includes AKI, arthritis, fibromyalgia, hypertension and hyperlipidemia. The patient currently takes Coumadin along with other medications. The patient has never smoked cigarettes and does not use alcohol. The patient presented with a growing bump, pain and swelling, which started two hours prior, to ED arrival, as the size of a golf ball.

- *Surgical Course:* Throughout the patient's one month hospital stay, she underwent three surgeries. The patient underwent emergency hematoma evacuation, incision and drainage and fasciotomy. The patient had Iodoform packing for two days, followed by NPWT (-125mmHg) for eight days. On day ten, the patient underwent wide excisional debridement of all cyanotic and necrosed tissue. Saline wet to dry was applied and dressing changed daily for two weeks. Granular, bleeding healthy tissue continued. Multiple split thickness skin grafts (STSG) were harvested from ipsilateral thigh and applied to the wound bed. The STSGs were applied twenty- four days after initial hematoma evacuation.

Before

After (13 months later)

Initial Pre-op Images:



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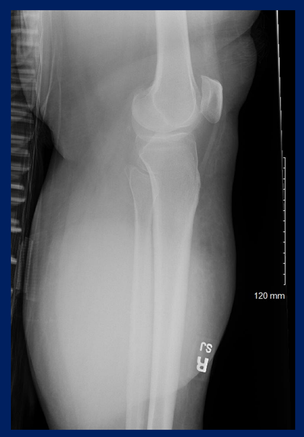

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Surgical Course:

1

2

3

4

5

6

DISCUSSION:

- The skin graft dressing was left intact for 7 days post-initial procedure to allow for the graft to complete all 3 stages of healing
- The patient underwent an evacuation of hematoma along with a fasciotomy at the initial procedure. The incision site was left open for drainage with a plan for delayed primary closure. Over the course of a week, the skin continued to necrose. Fasciotomy closure techniques have been studied. In a metanalysis of delayed primary closure, healing by secondary intention, gradual suture approximation, vacuum assisted closure and dynamic dermatotraction were compared. (1) The results showed that dynamic dermatotraction: 92.7% success, 18.4% complication; gradual suture approximation – 92.4% success, 14.8% complication; VAC – 78.1% success, 2.49% complication. Split thickness skin grafting is required if closure fails.
- Another study (2), reported the length of hospital stay, medical complication and mortality rates were significantly higher in patients who underwent debridement and coverage surgeries in two separate procedures. Our patient was in the hospital for a month and underwent 3 procedures. The study looked at 4 groups; the group with debridement and skin graft in separate procedures, had the largest hematoma size reported along with the longest hospital stay average.

CONCLUSION:

It is important to note this is a case study on one of the possible limb threatening complications from Coumadin. This study looked at a single patient who had a traumatic tension hematoma. The study highlights wound care of a large deficit, and how split thickness skin graft is a treatment avenue. This patient had 3 procedures in a month hospital long stay. The patient was able to be discharged. The patient is healed, and the split thickness skin graft took initially without the help of other wound care products.

Figures to the far left are pre-op images.
Figure 1: AP view: 16cm x 7cm soft tissue mass
Figure 2: Lateral view: 16cm x 7cm soft tissue mass

Figures to the left are post- op course.
Figure 1: Post- op Day 1
Figure 2: Post-op Day 2
Figure 3: Post-op Day 3
Figure 4: Post- op Day 7
Figure 5: Post- op Day 10
Figure 6: Post- op Day 24

References:

1. Jauregui, J. J., Yarmis, S. J., Tsai, J., Onuoha, K. O., Illical, E., & Paulino, C. B. (2017). Fasciotomy closure techniques. *Journal of Orthopaedic Surgery*, *25*(1), 230949901668472. https://doi.org/10.1177/2309499016684724
2. Salmerón-González, E., García-Vilariño, E., & Pérez-García, A. (2021). Therapeutic management of traumatic tension hematoma with potential skin necrosis: A retrospective review of 180 patients. *European Journal of Trauma and Emergency Surgery*, *48*(2), 1363–1367. https://doi.org/10.1007/s00068-021-01687-z