Bleeding Disorders in Voluntary Medical Male Circumcision

11 October 2017 | Jonas Hines
Bleeding Disorders in VMMC

- VMMC is the first medical procedure for many men
- A bleeding disorder may only become apparent after a medical or dental procedure, particularly among:
  - Young clients
  - Cases of mild bleeding disorders
- Caveat: mild or moderate bleeding disorders are **not** an absolute contraindication to VMMC
Differential Diagnosis of Uncontrolled Bleeding in VMMC

- Bleeding vessel
  - Common near frenulum
  - May occur after trauma and displacement of previously ligated vessel
- Overly deep dissection, with injury to corpus cavernosa erectile body
- Bleeding disorder
  - Platelet disorder
  - Coagulation factor disorder ("coagulopathy")
## Differentiating Bleeding Disorder and Bleeding Vessel

<table>
<thead>
<tr>
<th>Features</th>
<th>Bleeding disorders</th>
<th>Bleeding vessels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timing</td>
<td>shortly after surgery (within 6–48 hours)</td>
<td>Any time after surgery, up to days later</td>
</tr>
<tr>
<td>Client history</td>
<td>May report personal or family history of easy bleeding</td>
<td>May report trauma or early resumption of sex or masturbation</td>
</tr>
<tr>
<td>Clinical appearance</td>
<td>No bleeding vessel identified on exploration</td>
<td>Identifiable bleeding source or vessel</td>
</tr>
<tr>
<td>Clinical course</td>
<td>Tend to recur after exploration</td>
<td>Usually controlled with sutures</td>
</tr>
</tbody>
</table>
# Common Bleeding Disorders

<table>
<thead>
<tr>
<th>Disorder</th>
<th>Defect</th>
<th>Inheritance pattern</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>von Willenbrand disease</td>
<td>Platelet dysfunction &amp; impaired coagulation</td>
<td>Autosomal dominant; can also be acquired</td>
<td>~1% of pop</td>
</tr>
<tr>
<td>Hemophilia A</td>
<td>Deficiency of coagulation factor VIII or IX</td>
<td>X-linked recessive</td>
<td>Rare; ~1–4 per 100,000</td>
</tr>
<tr>
<td>Hemophilia B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thrombocytopenia</td>
<td>Low number of platelets</td>
<td>Many causes; inherited and acquired</td>
<td>Varies</td>
</tr>
<tr>
<td>Vitamin K deficiency</td>
<td>Impaired liver synthesis of coagulation factors II, VII, IX, X</td>
<td>Multiple causes (malnutrition, liver disease); usually acquired</td>
<td>Varies</td>
</tr>
</tbody>
</table>
Example of Inheritance Patterns

X-linked recessive

Autosomal dominant

Autosomal recessive
Screening Questions for All VMMC Clients

- **Personal history**
  - Easy nose bleeds, bruising
  - Swollen, painful joint after minor injuries
- **Family history**
  - Look for clue in inheritance pattern
- **Prior medical or dental procedures**
  - Note any complications from prior procedures
- **Medication history**
  - Aspirin, ibuprofen, warfarin, certain antibiotics

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Provider Verbal Pre-Screening Questions for Voluntary Medical Male Circumcision

**INSTRUCTIONS TO PROVIDERS:**
- These questions are intended to identify conditions that may not be apparent through physical screening but could still compromise the safety of VMMC.
- Please verbally ask the following questions in addition to performing physical screening of all voluntary medical male circumcision (VMMC) clients prior to performing circumcisions, regardless of the circumcision method to be used.
- Questions should be asked even if a client or their guardian already completed a written form with similar information.
- If a client answers “Yes” to any of the fall questions below, please follow site policies or consult the senior on-site clinician to determine whether any further testing or referral to a specialized provider is needed before circumcision.

<table>
<thead>
<tr>
<th>Question</th>
<th>Consider further screening</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Do you have any current or past conditions, or a chronic illness that we should be aware of?</td>
<td>□</td>
</tr>
<tr>
<td>2. Are you currently taking any medications or vitamins? If yes, please list them. (Consider further screening if client cites medications other than over-the-counter aspirin, ibuprofen, warfarin, certain antibiotics)</td>
<td>□</td>
</tr>
<tr>
<td>3. Are you allergic to any medicines?</td>
<td>□</td>
</tr>
<tr>
<td>4. Have you ever had a bad reaction to a vaccine?</td>
<td>□</td>
</tr>
<tr>
<td>5. Have you had any previous operations? If yes, did you have a bad reaction to the anesthesia?</td>
<td>□</td>
</tr>
<tr>
<td>6. Have you ever experienced wounds that take a long time to stop bleeding?</td>
<td>□</td>
</tr>
<tr>
<td>7. Have you ever visited the dentist? If yes, have you experienced bleeding after a dental procedure?</td>
<td>□</td>
</tr>
<tr>
<td>8. Have you ever had nose bleeds? If yes, please describe how often and how long they last.</td>
<td>□</td>
</tr>
<tr>
<td>9. Do any of your family members have bleeding disorders? (example: hemophilia), nose bleeds, or wounds that take a long time to stop bleeding?</td>
<td>□</td>
</tr>
<tr>
<td>10. Do you have a blood glucose monitor AND a policy on maximum blood sugar for same-day VMMC? Do you have diabetes?</td>
<td>□</td>
</tr>
<tr>
<td>11. Have you ever been diagnosed with or told you have low iron in your blood?</td>
<td>□</td>
</tr>
<tr>
<td>12. (client is or has been sexually active) Do you have any concerns or problems with penile erection or any other concerns about sexual function?</td>
<td>□</td>
</tr>
</tbody>
</table>

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https://project-iq-resources.jhpiego.org/download/6868/
Re-screen client for bleeding disorder

Laboratory tests

<table>
<thead>
<tr>
<th>Type of test</th>
<th>What it measures</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hemoglobin</td>
<td>Amount of red cells</td>
<td>Tests for anemia</td>
</tr>
<tr>
<td>Platelets</td>
<td>Number of platelets</td>
<td>Test for thrombocytopenia</td>
</tr>
<tr>
<td>PT/aPTT</td>
<td>Coagulation cascade</td>
<td>aPTT elevated in Hemo A &amp; vWD</td>
</tr>
<tr>
<td>Bleeding time</td>
<td>Platelet function</td>
<td>Might be elevated in vWD</td>
</tr>
<tr>
<td>Blood smear</td>
<td>Shape of cells</td>
<td>Clue as to cause of low RBC or platelet</td>
</tr>
</tbody>
</table>

*Blood sample should be collected prior to administering blood product

Post-operative triage and management

Immediate Management of Bleeding Immediately after VMMC

- Stay calm
- Manual pressure
  - Apply pressure to the circumference of penis
  - Maintain for as long as necessary
  - Bleeding not controlled by a manual pressure requires re-operation or referral
- Monitor the client’s blood pressure and heart rate for any signs of shock
  - Signs of shock: HR >100 bpm, systolic BP <100 mmHg
- Plan for definitive management
Definitive Management of Bleeding in VMMC

- Re-explore wound if sufficient expertise available
  - If bleeding source identified, control with suturing or diathermy
    - Do not use diathermy if source of bleeding is near frenulum
  - Refer client if re-exploration at VMMC site is not possible

- Suspect a bleeding disorder if:
  - Unable to identify a bleeding vessel or bleeding occurs from many areas
    - Re-exploring a wound more than once is unlikely to benefit a client and may worsen bleeding
  - Client has >1 bleeding episode

- Consultation and referral is warranted if a bleeding disorder is suspected
<table>
<thead>
<tr>
<th>Product</th>
<th>Contains</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>RBCs</td>
<td>Red blood cells</td>
<td>If client is anemic from bleeding</td>
</tr>
<tr>
<td>Platelets</td>
<td>Platelets</td>
<td>If platelets are low</td>
</tr>
<tr>
<td>Fresh frozen plasma (FFP)</td>
<td>All coagulation factors</td>
<td>Treats most coagulopathies; widely available</td>
</tr>
<tr>
<td>Cryoprecipitate</td>
<td>Factors VIII, XIII, fibrinogen, and vWF</td>
<td>Treats vWD and hemophilia A</td>
</tr>
<tr>
<td>Prothrombin complex concentrate (PCC)</td>
<td>Factors II, VII, IX, and X</td>
<td>Treats hemophilia B and other rarer BDs; expensive</td>
</tr>
<tr>
<td>Activated PCC or recombinant coagulation factor concentrates (e.g., FEIBA, NovoSeven)</td>
<td>Specific coagulation factors (e.g., VIII)</td>
<td>Used for specific BDs and when inhibitors are present; do not treat vWD; expensive and may have to be imported</td>
</tr>
</tbody>
</table>
Antifibrinolytic Medications

- Tranexamic acid, aminocaproic acid
- Reduces enzymes that breakdown fibrin (main component of a clot)
- Evidence from traditionally circumcising countries for use in hemophiliac patients undergoing circumcision
- Evidence of reduced death when used in post-partum hemorrhage and trauma victims
- Appear most effective if administered early (e.g., <3hrs)
- Low risk (<1%) of thrombosis (blood clot) formation as a complication
  - Risk of thrombosis if used with activated factors products
- IV formulations are on the WHO essential medicines list
Summary

- VMMC is commonly the first medical procedure for many clients
- Uncontrolled and severe bleeding is an uncommon complication of VMMC
  - Bleeding disorders are a rare cause of severe bleeding
- All clients should be screened for bleeding disorders prior to VMMC
- Bleeding that recurs in a client should trigger consideration of a bleeding disorder
- Clients with suspected bleeding disorders should be closely managed by an experienced provider
- Appropriate management of clients with suspected bleeding disorders can minimize morbidity and mortality
Acknowledgements

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- Catey Laube (Jhpiego)
Discussion Questions

- What are your experiences managing patients with difficult-to-control bleeding?
- What have been some useful lessons learned by your program from managing clients with suspected bleeding disorders?
- Does your program have adequate access to expert consultation if a bleeding disorder was suspected in a VMMC client?
- Would it be helpful to connect implementing partners with national hemophilia associations to establish a line of communication for clients needing expert advice and help getting specialized blood products?
- Is tranexamic acid available in your country? Do you see a potential role for it?
Thank you!!

For more information, contact CDC
1-800-CDC-INFO (232-4636)

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.