



ASSOCIATION OF RED CELL DISTRIBUTION WIDTH AND OUTCOMES OF POST- TONSILLECTOMY BLEEDING

Ryan Dewan, MS1

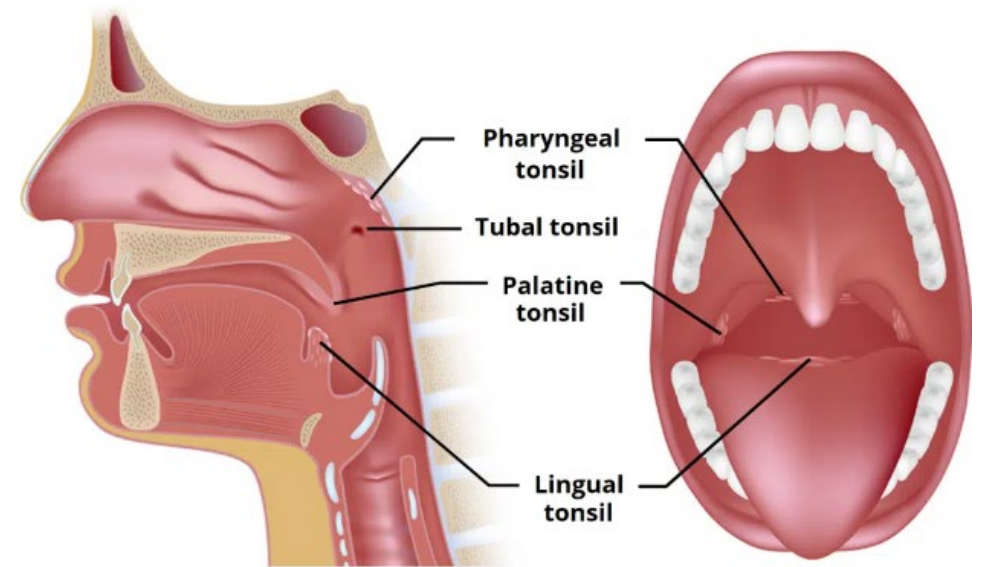
Jacobs School of Medicine and Biomedical Sciences

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Tonsils- What are They?

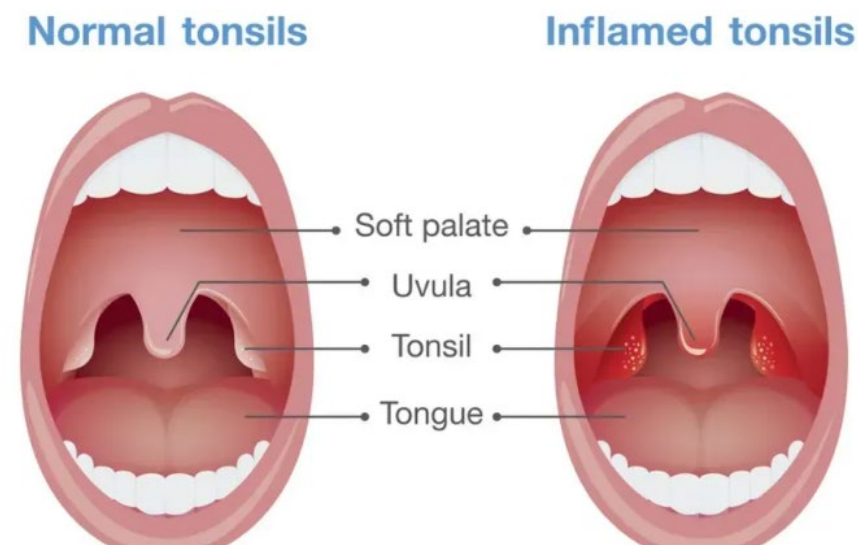
Small circular tissues that are located in the back of your throat:

- Act as part of the lymphatic system
- Defend against infections- Trapping harmful bacteria and viruses that can cause infections



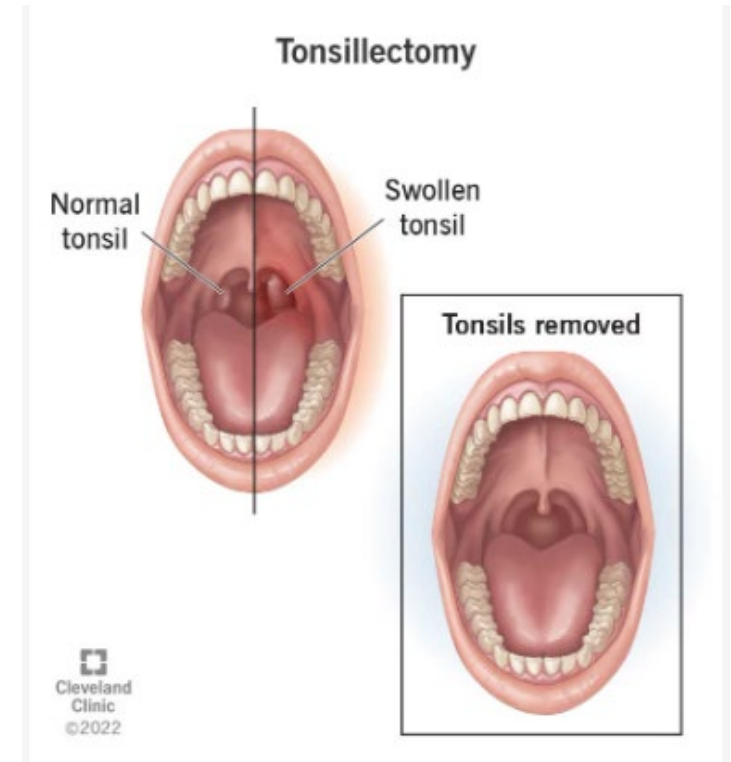
Tonsils and It's Common Pathology

- Tonsilitis
 - Tonsils can become infected leading to swelling, soreness and white spots
 - Makes up 1.3% of all outpatient visits in the United States
- Children are at a higher risk of recurrence due to:
 - Less developed immune system
 - Larger and more active tonsils
 - Frequent germ exposure



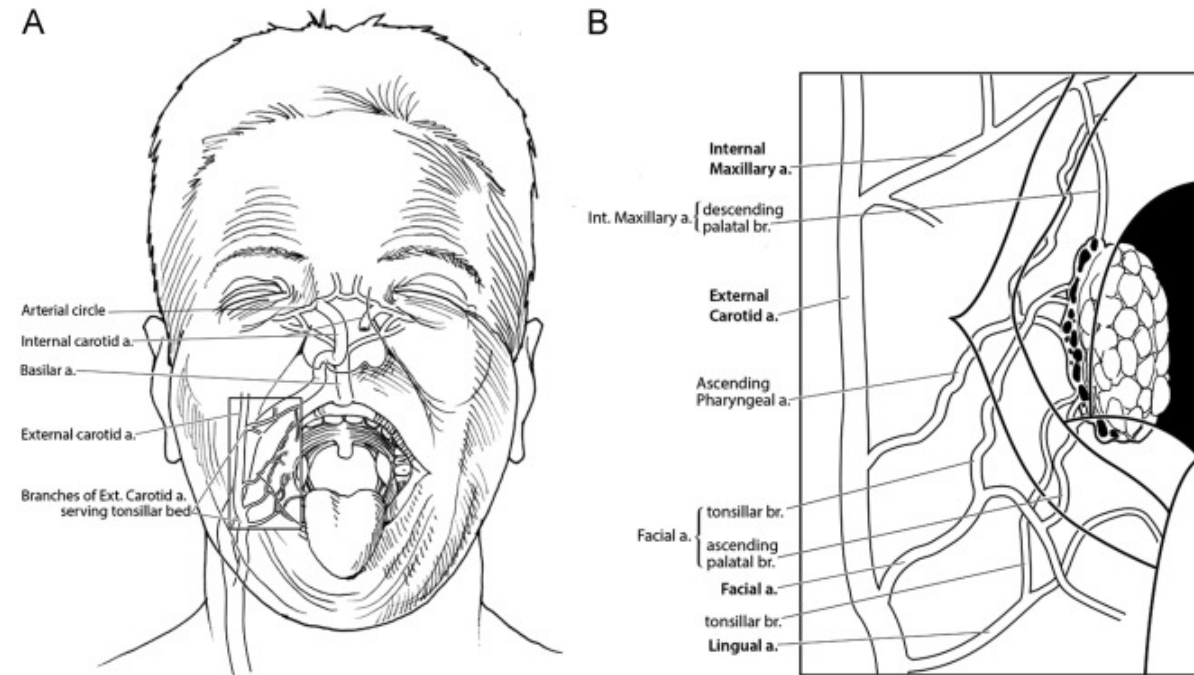
What is a Tonsillectomy?

- Surgical procedure that involves removing the tonsils
 - Indicated for recurrent tonsilitis, snoring, and obstructive sleep apnea
 - More common procedure in children
 - There are over 500,000 tonsillectomies in the U.S per year



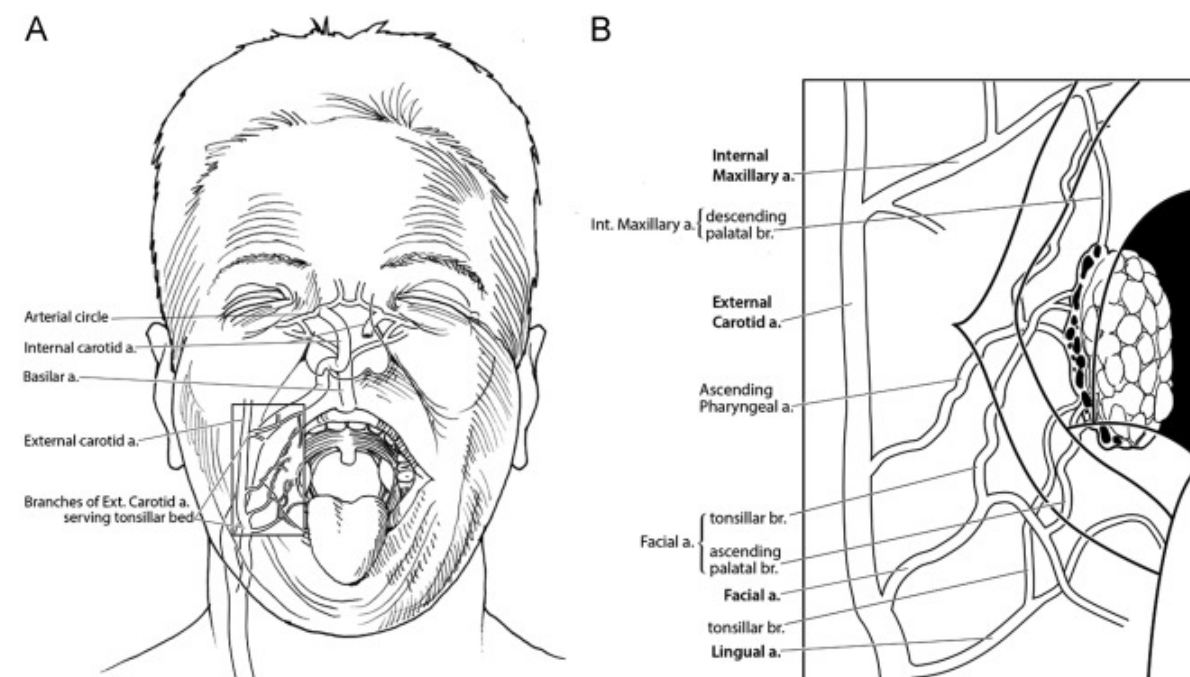
What Can go Wrong?

- Post-operative complications for tonsillectomies:
 - **Hemorrhage (Bleeding): Can be catastrophic**
 - Occurs in 4% of patients
 - Infection
 - Airway Obstruction (Uvular Edema)
 - Nausea/Vomiting
 - Pain



Predictors for Post-Tonsillectomy Bleeding

- No current definitive biomarkers
- Factors that may predict risk of bleeding:
 - Age
 - Bleeding Disorders
 - Infection
 - Post-Operative NSAID Use



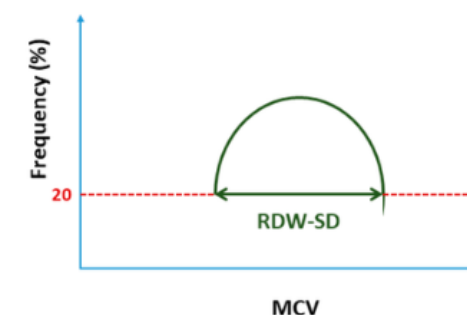
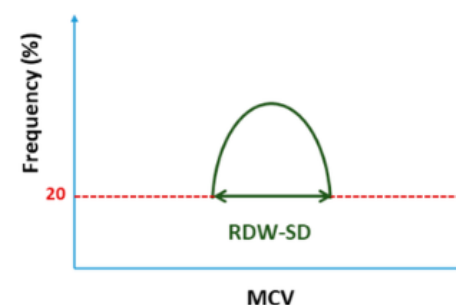
Definitive biomarker or associations for post-tonsillectomy bleeding could aid in prevention of bleeding and revisits to hospitals

Red Cell Distribution Width

- Blood test that measures variation in the size of red blood cells
- Typically used as a component of complete blood count (CBC) for:
 - Iron deficiency anemia
 - Vitamin B12 deficiency
- This study explores the potential associations of RDW with post tonsillectomy bleeding



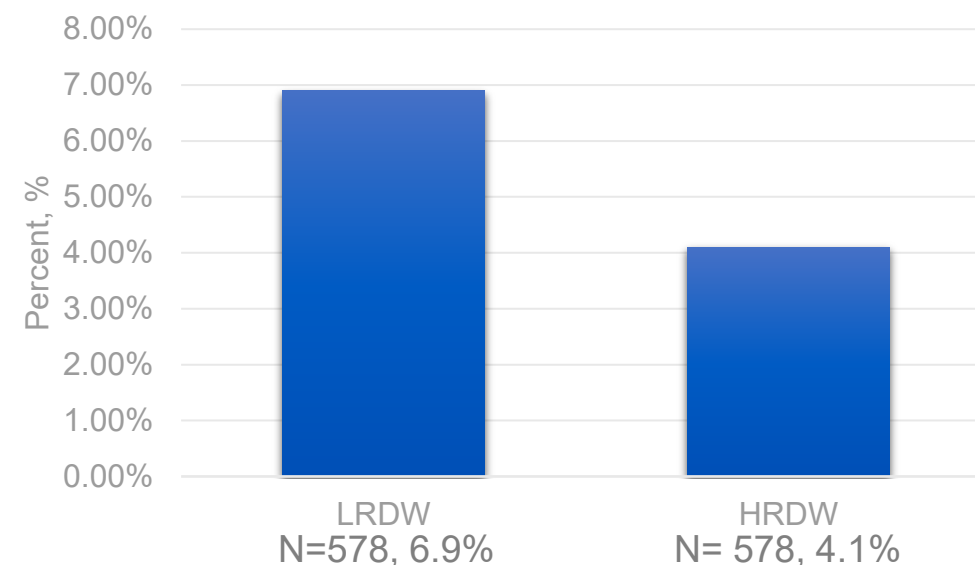
$$\text{RDW-CV} = (\text{SD of RBC volume} / \text{MCV}) \times 100$$



Methods and Results

- Retrospective study from 2006 to 2024
 - Identified patients as low RDW ($\leq 14.5\%$) or High RDW ($>14.5\%$)
 - Patients were propensity score matched
- Results:
 - LRDW were more likely to bleed post-tonsillectomy compared to the HRDW group
 - Significant differences were observed between the two groups. $p=.029$

Post-Operative Bleeding Rates

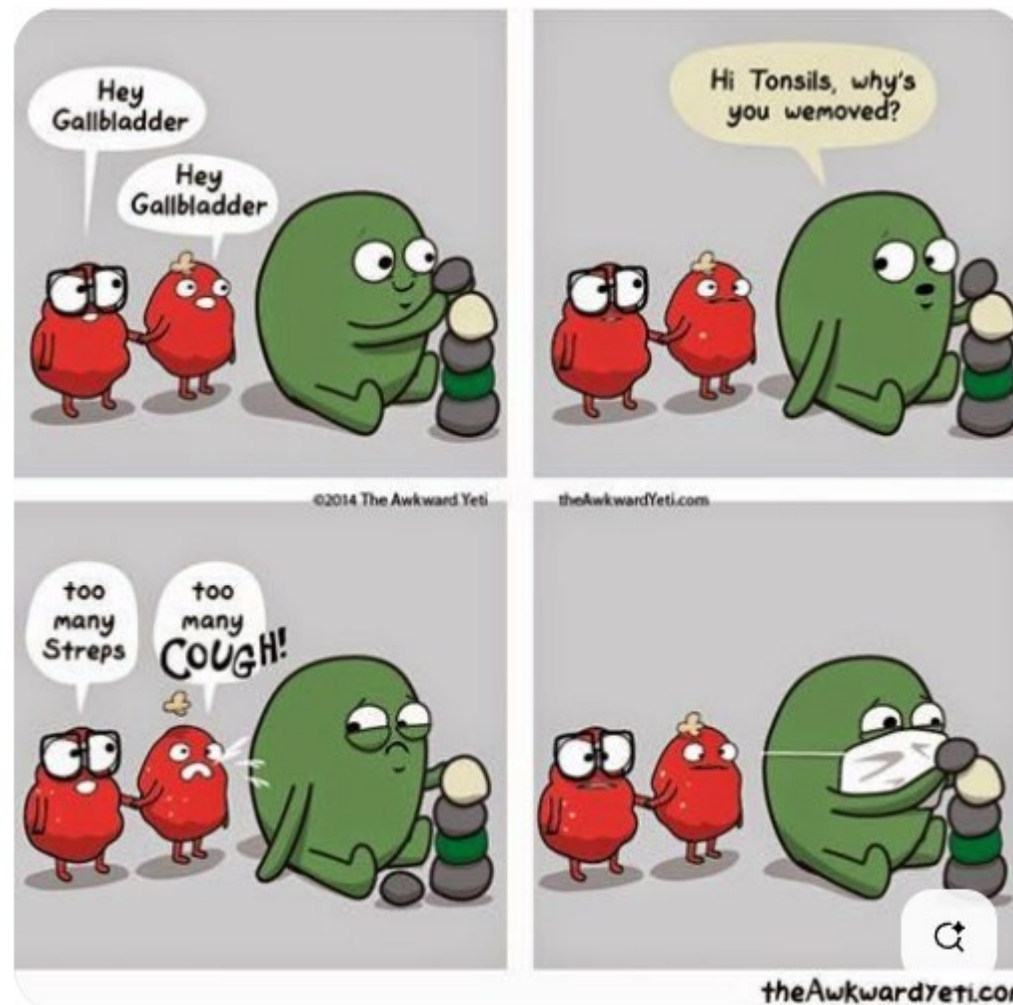
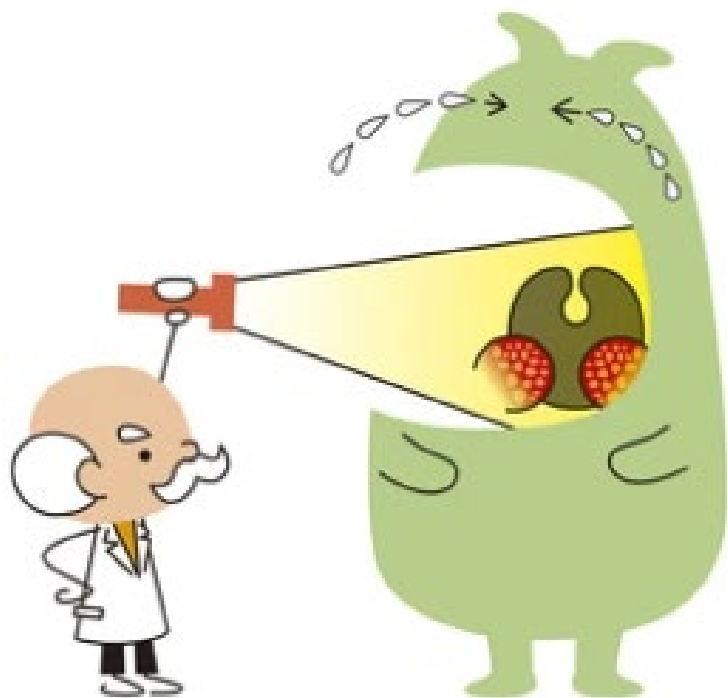


Conclusion

- While RDW may help predict bleeding risk in patient's post-tonsillectomy, further research is needed to confirm its clinical significance
- Finding a biomarker for post-operative tonsillectomy bleeding can be beneficial in reducing serious complications and revisits to the hospital



Thank You!



References

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