




**Can We Predict (and Prevent) Steal Syndrome?**

**Matthew J. Dougherty, MD**  
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- *No disclosures*



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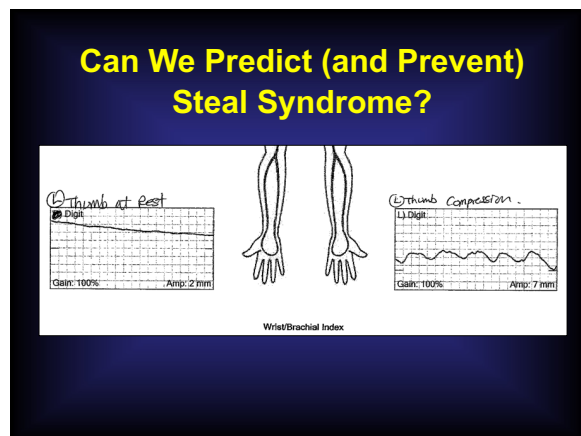
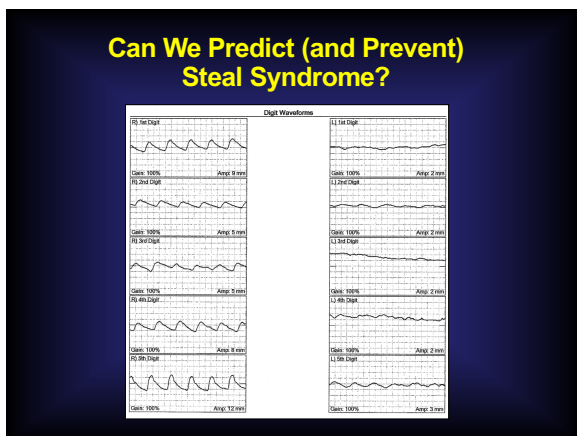
- **Steal symptoms**

- coldness
- numbness
- pain
- weakness / hand claudication
- digital ulceration
- gangrene

**Can We Predict (and Prevent) Steal Syndrome?**

- **DASS**

- diabetes mellitus
- CTD
- PVD
- female / small vessels
- distal brachial inflow



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- 10-20% get some steal
- 4-6% require intervention

**Can We Predict (and Prevent) Steal Syndrome?**

**- DASS**



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*Intra-operative methods to assess*

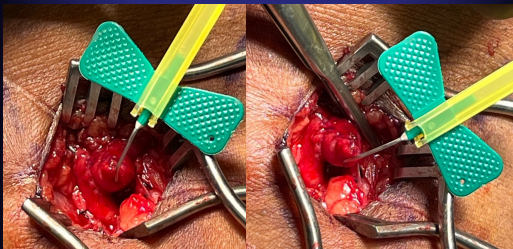
- Distal pulse / doppler
- Oximetry
- Digital PVR / PPG
- Duplex flow volume
- Peri-anastomotic pressure

**Can We Predict (and Prevent) Steal Syndrome?**

**Measuring Peri-Anastomotic Pressure to Identify Patients at High-Risk for Steal Syndrome**

- Matthew Carpiello, Gina Biagetti, Callie Dowdy, Keith Calligaro, Douglas Troutman, Matthew Dougherty

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- Calculated ratio between PAP and systemic BP
- Determined who developed Steal
- Select patients underwent modification

### Can We Predict (and Prevent) Steal Syndrome?

#### All New AV Access Surgeries 2018-2022

Type of AVF/AVG	Total # of Cases	Steal (#)	Steal (%)
Radiocephalic AVF	83	0	0.0%
Brachiocephalic AVF	286	14	4.9%
Basilic Vein Transposition AVF	207	6	2.9%
Forearm Looped AVG	18	0	0.0%
Upper arm AVG	221	10	4.5%
Infraclavicular Ax-Ax AVG	25	0	0.0%
Femoral AVF/AVG	13	6	46.2%
<b>Total</b>	<b>853</b>	<b>36</b>	<b>4.2%</b>

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- 14 (6.5%) of these 216 patients developed DASS requiring intervention in follow-up
- Mean PAP ratio was 0.395 vs 0.557 for the 202 patients who did not develop DASS ( $P = .001$ )

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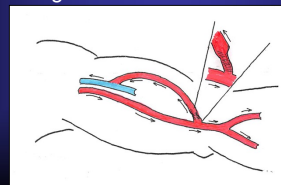
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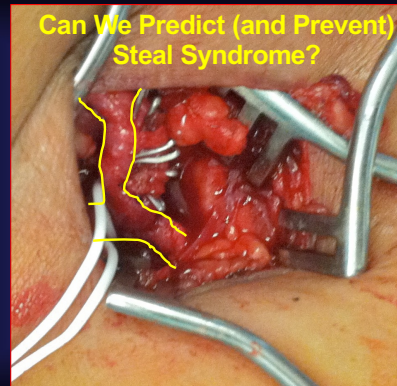
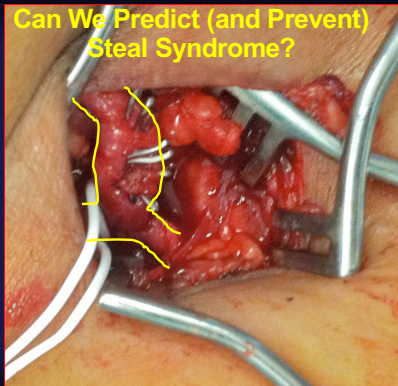
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Intra-op Banding at Index Surgery

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Intra-op Banding at Index Surgery

- For low pressure ratio +/- poor distal doppler flow
- 17 total patients
- Pre-banding, average ratio was 0.33
- Post-banding, increase in average ratio to 0.58
- 14 / 17 (82.4%) patients had no subsequent Steal symptoms

### Can We Predict (and Prevent) Steal Syndrome?

PAP average / range

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PAP Ratio Steal vs No Steal

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Conclusions

- Patients who developed Steal Syndrome had a significantly lower peri-anastomotic pressure (PAP) ratio than those who did not

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- Patients who developed Steal Syndrome had a significantly lower peri-anastomotic pressure (PAP) ratio than those who did not
- Banding at index operation for low PAP reduced but not eliminate all steal cases

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