CASE PRESENTATIONS:
STROKE PREVENTION IN AF

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COI DISCLOSURES

• I have received lecture and proctoring honoraria from Spectranetics.

• I have been funded by and NIH/SBIR grant to AJ Medical Devices, Inc. (AJMD) and research grants from Boston Scientific, Medtronic, St. Jude Medical, Guidant, Inc. and Cameron Health, Inc.

• I am or have been a consultant to AJMD, Boston Scientific and Cameron Health.

• I have an equity stake in AtaCor Medical, Inc. and am Chief Medical Officer.
The estimated US prevalence of atrial fibrillation (AF) in the year 2050 ranges from 5.6 million to as high as 15.9 million individuals.

Why Talk About Cryptogenic Stroke?

- 678,000 ischemic strokes every year in the US\(^1\)
  - Leading cause of disability in the US and worldwide
- ~200,000 cryptogenic strokes yearly\(^1\)
- Most cryptogenic stroke patients receive antiplatelet for secondary prevention\(^2\)
- Long-term monitoring reveals AF in ~30% of cryptogenic stroke patients\(^3\)\(^-\)\(^9\)
  - These patients benefit from anticoagulant therapy

Diagnosis Strategies

<table>
<thead>
<tr>
<th>24-48 hours of monitoring</th>
<th>Up to 30 days of monitoring</th>
<th>Up to 30 days of monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>External loop recorder</td>
<td>Event-triggered loop recorder</td>
<td>Ambulatory event monitor</td>
</tr>
<tr>
<td>Saves all cardiac rhythm data</td>
<td>Saves events only</td>
<td>Saves all cardiac rhythm data</td>
</tr>
</tbody>
</table>

Dependent on type of MCT.

IMPLANTABLE LOOP RECORDER

SIMPLE INSERTION PROCEDURE

Best location: 45 degrees to sternum over 4th intercostal space, 2 cm from left edge of sternum

97% of physicians found the insertion tool simple and intuitive.¹

Requires minimal procedure time and clinical resources

Burke MC et al. J Electrocardiology 2003
CRYSTAL AF: monitoring with ICM superior to SOC

Detection of Atrial Fibrillation by 36 months

Hazard ratio, 8.8 (95% CI, 3.5 - 22.2)
P < 0.001 by log-rank test

Predicting Determinants of Atrial Fibrillation or Flutter for Therapy Elucidation in Patients at Risk for Thromboembolic Events (PREDATE AF) Study

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From the †Stanford University, Stanford, California, †Keesler Medical Center, Biloxi, Mississippi, and †Bayshore Heart Hospital, Plano, Texas.
CHADS2-Vasc Score

• CHADS2VASC increases the number of patients who meet criteria for anticoagulation therapy and more accurately identifies truly low risk patients.

• More people who were considered low risk before (ie females, age 65-74, vascular dx) are moved to the higher risk categories to better reflect risk of embolization.
Anticoagulant Mechanisms of Action

Bleeding Risk

- Annual rate of major bleeding range between 2.1% to 3.6%
- Fatal bleeding occurs in up to 0.5%
- Major bleeding is associated with higher mortality
- 30-day mortality after major bleeding episode 13% with warfarin and 9% with dabigatran

J AM Coll Cardiol. 2015; 65 (13): 1340-1360
PREVAIL -5: WATCHMAN META-ANALYSIS


CASE 1:

- 55- year old male with diabetes mellitus, sleep apnea and obesity presents with 10 minutes of ataxia.
- Patient takes oral hypoglycemic and a statin.
- No other medical history than previously stated.
- Exam reveals a BMI 33; BP 140/88; HR 66; RR 14 Afebrile
- CV and Neuro exam is normal.
- ECG is normal
- MRI/MRA of the brain reveals old temporal lobe stroke.
CASE 1: Considerations/Discussions

- Should this patient have been on aspirin?
- What is the CHADS VASC Score?
- Should this patient have been on oral anti-coagulants?
- Is this patient hypertensive?
- What percentage of strokes are asymptomatic?
- What diagnosis is likely but currently lacking?
- What is the best method to identify the diagnosis in this patient?
CASE 2:

• 67 year old female with history of atrial fibrillation, TIA, hypertension presents with a GI bleed that requires blood transfusion.
• PMHx/PSHx: Other than stated DJDx
• Meds: Losartan-HCT; Sotalol; Warfarin; statin; aspirin
• PE: BMI 22; BP 168/95 HR 50 RR 14 Afebrile
• Skin with notable ecchymoses; No JVD or bruits; CV HRRR +S4 no murmurs and nml pulses; Lungs Clear; Abdomen benign
• ECG sinus bradycardia with LVH
• Echo stage II diastolic dysfunction
• INR 4.0
Ruff, C on ACC.com Which Risk Score Best Predicts Bleeding With Warfarin in Atrial Fibrillation?

<table>
<thead>
<tr>
<th>Letter</th>
<th>Clinical Characteristic</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>Hypertension</td>
<td>1</td>
</tr>
<tr>
<td>A</td>
<td>Abnormal Liver or Renal Function</td>
<td>1 or 2</td>
</tr>
<tr>
<td>S</td>
<td>Stroke</td>
<td>1</td>
</tr>
<tr>
<td>B</td>
<td>Bleeding</td>
<td>1</td>
</tr>
<tr>
<td>L</td>
<td>Labile INR</td>
<td>1</td>
</tr>
<tr>
<td>E</td>
<td>Elderly (age &gt; 65)</td>
<td>1</td>
</tr>
<tr>
<td>D</td>
<td>Drugs or Alcohol</td>
<td>1 or 2</td>
</tr>
<tr>
<td></td>
<td>Maximum Score</td>
<td>9</td>
</tr>
</tbody>
</table>
CASE 2: Considerations/Discussion

- The CHADS VASC score is 5.
- Is the HAS-Bled Score a concern?
- Are there signs of labile hypertension?
- Management options after treating the acute bleed?
- Is pre-emptive LAAO a feasible management?
- Is aggressive management of hypertension a surrogate for managing the HAS BLED score and the risk of bleeding?
- Will the advent of Andanexet change the management?
CASE 3:

• 55- year old AA male presents for an office follow up with history of MI (Direct Stent to the LAD), paroxysmal atrial fibrillation, hypertension, Diabetes Mellitus.

• Meds: Eliquis; Metformin; Statin; Metoprolol; Lisinopril; Aspirin; Plavix

• PE: BMI 25; BP 128/67; HR 62 RR 17 Afebrile

• No JVD or Bruits; HRRR no murmurs; Lungs Clear; Abdomen benign; Extremities normal.

• ECG Sinus rhythm with poor R wave progression

• Echo EF preserved
CASE 3: Considerations/Discussion

- The CHADS VASC score is 2.
- Does this patient need to be on aspirin?
- Is the HAS-Bled Score a concern?
- When does the risk of bleeding exceed the risk of stroke?
- Is pre-emptive LAAO a feasible management? If so, when?
Thank You for Your Attention