Is Flow Diversion the Death of Simple Coiling or Stent-Assisted Coiling? A Single Center Experience

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Disclosures

• Nothing to disclose
Introduction

• Endovascular management options for intracranial aneurysms continue to expand
• The newest treatment modalities are flow diverting stents that exclude an aneurysm from the normal cerebral circulation
• These flow diverters are replacing traditional endovascular coiling methods
Methods

• Single center non-randomized retrospective chart review on patients treated endovascularly for unruptured intracranial aneurysms from 2012-2016

• Recorded patient demographics, aneurysm morphology, endovascular treatments utilized, and complications

• Data was assessed for changes in utilization of various endovascular treatment techniques
Results

• 331 patients treated over five years
• Increasing trend in rates of flow diversion ($p = 0.03$)
• Overall 26.6% of aneurysms were treated with flow diversion devices in 2012 whereas in 2016 this number increased to 40.7%.
  — Trend was especially significant for distal ICA aneurysms
Results

Aneurysm treatment trend

- **Simple coiling**
- **Stent-assisted coiling**
- **Flow diversion**

<table>
<thead>
<tr>
<th>Year</th>
<th>Simple Coiling</th>
<th>Stent-assisted Coiling</th>
<th>Flow Diversion</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>43.0</td>
<td>29.0</td>
<td>28.0</td>
</tr>
<tr>
<td>2013</td>
<td>44.3</td>
<td>20.5</td>
<td>35.2</td>
</tr>
<tr>
<td>2014</td>
<td>35.2</td>
<td>22.7</td>
<td>42.0</td>
</tr>
<tr>
<td>2015</td>
<td>35.5</td>
<td>37.1</td>
<td>27.4</td>
</tr>
<tr>
<td>2016</td>
<td>31.4</td>
<td>27.9</td>
<td>40.7</td>
</tr>
</tbody>
</table>
Results

Distal ICA aneurysm treatment

- Simple coiling
- Stent-assisted coiling
- Flow diversion
Discussion

• Endovascular treatment has become the standard of care for most aneurysms, and continues to evolve at a rapid pace

• Flow diverting stents have made some intracranial aneurysms amenable to endovascular management that were once only treatable via clipping

• Flow diversion is being used more frequently and replacing traditional coiling methods, especially for distal ICA aneurysms
Summary

• Flow diverting stents are gradually replacing traditional coiling methods based on our single center experience