Effectiveness of MFM in type B Dissection & Aortic Aneurysms treatment: Long term follow-up

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NO CONFLICT OF INTEREST

MOROCCAN SERIES

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Number of cases</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dissection</td>
<td>6</td>
<td>25%</td>
</tr>
<tr>
<td>TAAA</td>
<td>10</td>
<td>42%</td>
</tr>
<tr>
<td>AAA</td>
<td>8</td>
<td>33%</td>
</tr>
</tbody>
</table>

RISK FACTORS

<table>
<thead>
<tr>
<th>Disease</th>
<th>TAAA</th>
<th>AAA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking</td>
<td>8(80%)</td>
<td>7(87.5%)</td>
</tr>
<tr>
<td>Coronary Diseases</td>
<td>3(30%)</td>
<td>6(75%)</td>
</tr>
<tr>
<td>Cardiac insufficiency</td>
<td>3(30%)</td>
<td>1(12.5%)</td>
</tr>
<tr>
<td>Respiratory insufficiency</td>
<td>3(30%)</td>
<td>3(37.5%)</td>
</tr>
<tr>
<td>Hypertension</td>
<td>3(30%)</td>
<td>3(37.5%)</td>
</tr>
<tr>
<td>Dyslipidemia</td>
<td>2(20%)</td>
<td>4(50%)</td>
</tr>
<tr>
<td>Diabetis</td>
<td>3(30%)</td>
<td>4(50%)</td>
</tr>
<tr>
<td>Renal insufficiency</td>
<td>1(12.5%)</td>
<td>1(12.5%)</td>
</tr>
<tr>
<td>PAD</td>
<td>4(50%)</td>
<td>4(50%)</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>1(10%)</td>
<td>1(10%)</td>
</tr>
<tr>
<td>Syphilis</td>
<td>1(10%)</td>
<td>1(10%)</td>
</tr>
</tbody>
</table>

PROCEDURE

Materials & Methods

- Local Anesthesia
- Cut Down Access
- 79 MFM: ø 12-45 mm / L 50-150 mm
- Procedure Duration Average:
  - Aneurysm: 60 min.
  - Dissection: 90 min.
- Post-Procedure Stay: 2 days
- Follow-Up: M1, M3, M6, M12, M18, M36
**TAAA CASES**

<table>
<thead>
<tr>
<th>Type</th>
<th>Patients</th>
<th>Mean MFM Number</th>
<th>Death OP.II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type I</td>
<td>4</td>
<td>2.75</td>
<td>17 [M04]</td>
</tr>
<tr>
<td>Type II</td>
<td>2</td>
<td>3</td>
<td>1* [M08]</td>
</tr>
<tr>
<td>Type III</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type IV</td>
<td>4</td>
<td>3</td>
<td>1* [M06] 2</td>
</tr>
</tbody>
</table>

* Not MFM related

**Mean Age**

| 56.2 [16 – 70] | 74.4 [30 – 130] |

**AAA CASES**

<table>
<thead>
<tr>
<th>Aneurysm</th>
<th>Patients</th>
<th>Mean MFM Number</th>
<th>Death</th>
<th>OP.II</th>
</tr>
</thead>
<tbody>
<tr>
<td>BR R</td>
<td>1</td>
<td>1</td>
<td>15%</td>
<td>95%</td>
</tr>
<tr>
<td>AA Fl</td>
<td>1</td>
<td>2</td>
<td>15%</td>
<td>95%</td>
</tr>
<tr>
<td>AA JuxtaR</td>
<td>1</td>
<td>2</td>
<td>15%</td>
<td>95%</td>
</tr>
<tr>
<td>AA Pass R</td>
<td>1</td>
<td>4</td>
<td>15%</td>
<td>95%</td>
</tr>
<tr>
<td>AA JuxtaR</td>
<td>4</td>
<td>3.26 (2-6)</td>
<td>15%</td>
<td>95%</td>
</tr>
</tbody>
</table>

**Mean Age**

| 67.3 [50 – 77] | 87.4 [51.7 – 97.4] |

**TAAA CASES**

Comparing progress of diameter over time

**TRANSVERSAL Ø**

<table>
<thead>
<tr>
<th>DT</th>
<th>Mean Diameter Difference (Reduction)</th>
<th>P value</th>
<th>Conclusion at 95% confidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>D0 – M1</td>
<td>(-) 11.82 mm</td>
<td>0.004</td>
<td>Average DT D0 &gt; Average DT M1</td>
</tr>
<tr>
<td>M1-M6</td>
<td>(-) 4.51 mm</td>
<td>0.167</td>
<td>Average DT M1 = Average DT M6</td>
</tr>
<tr>
<td>D0- M6</td>
<td>(-) 15.99 mm</td>
<td>0.009</td>
<td>Average DT D0 &gt; Average DT M6</td>
</tr>
</tbody>
</table>

**ANTERO POSTERIOR Ø**

<table>
<thead>
<tr>
<th>DT</th>
<th>Mean Diameter Difference (Reduction)</th>
<th>P value</th>
<th>Conclusion at 95% confidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>D0 – M1</td>
<td>(+) 8.81 mm</td>
<td>0.029</td>
<td>Average DAP D0 &gt; Average DAP M1</td>
</tr>
<tr>
<td>M1-M6</td>
<td>(+) 3.81 mm</td>
<td>0.143</td>
<td>Average DAP M1 &gt; Average DAP M6</td>
</tr>
<tr>
<td>D0- M6</td>
<td>(+) 12.75 mm</td>
<td>0.011</td>
<td>Average DAP D0 &gt; Average DAP M6</td>
</tr>
</tbody>
</table>

Paired T-tests at 5 % significance level

**RATIOS ANALYSIS**

**TAAA (TEVAR) Ratios Analyses**

**AAA (EVAR) Ratios Analyses**

**MOROCCAN SERIES**

Long term follow up: 8 Cases

<table>
<thead>
<tr>
<th>TAAA 3</th>
<th>8Y</th>
<th>5Y</th>
<th>4Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAA 2</td>
<td>7Y</td>
<td>5Y</td>
<td>3Y</td>
</tr>
</tbody>
</table>

TypeB D. 3 7Y 5Y
Endovascular treatment of a tuberculous thoracoabdominal aneurysm with the multilayer stent

Endoleak Type Ia

A.F, 63y. Old, male, coronary disease

B.L, 50y. old, male
Dissection on the descending thoracic aorta taken from a donor pig
A. BENJELLOUN - M. BONNEAU
(INRA - CR2J)

Dissection

Rupture after dissection at 48hrs

CT Scan

dissection control after stenting

Dissection

Evolution of measures
Follow-up (1)
- M1 = T3 : proximal region of the dissected extent
- M2 = T9 : Medial region of dissected extent
- M3 = L2 : Distal region of the dissected extent

True Lumen (TL)
False Lumen (FL)

Dissection CASES

A.K, 60 year old, Male.

D0
Y1
Y4

Dissection CASES

A.K
M1 (T3) M2 (T9) M3 (L2)
D0
Y1
Y4
Dissection CASES

AK, 60 year old, Male.

**Without MFM**
- Turbulence flow in the intimal tear

**With MFM**
- Laminar flow in the intimal tear
- Re-entry tear with reduction of speed flow after MFM treatment
- Pressure reduction in the false lumen after MFM treatment

Dissection CASES

AK, 60 year old, Male.

Dissection CASES

O.M, 60 y. old male

PRE M06 M36

Dissection CASES

O.M, 61years old, Male.

M1(T3) M2(T9) M3(L2)

Dissection CASES

SL, 65 year old, female

PRE

CT

SMA

RR & LR
Technical success: 100%
- MFM’s used: between 1 – 7
- Neurological Complications (Spine Cord): 0 %
- Covered Aortic Length: TAAA/AAA [81-560] mm (mean: 270 mm)
- Dissection [250 – 640] mm (mean: 403 mm)
- Branch patency: 100%

- 2 corrected endoleak: Endoleaks: Type Ia at Y5
- Type III at M6
- IPAD: PFF at 2 Years
- Appearance of nephropathy (nephroangio sclerosis) at Y4

Guidelines
- Rupture
- Mycotic Aneurysm
- Endoleak I
- Endoleak III
- Courbure
- Overlapping of 5 cm
- Oversizing of 10- 15%
- Treatment of sténosis
- Double antiagrégation
- CT Scan

CONCLUSIONS
MFM: Very good tool
THANK YOU FOR YOUR ATTENTION