

MAYO CLINIC

ANEURYSM RUPTURE DURING THE INTERVAL OF STAGED ENDOVASCULAR TAAA REPAIRS

HOW FREQUENT IS IT AND WHAT CAN BE DONE TO PREVENT IT: OPTIMAL DELAY FOR STAGE 2

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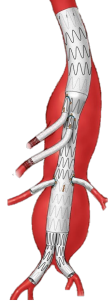
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DISCLOSURES

- I have no financial disclosures


BACKGROUND

- Fenestrated-Branched Endovascular Aortic Repair (FB-EVAR) is becoming increasingly utilized in the repair of thoracoabdominal and complex abdominal aortic aneurysms
- FB-EVAR is associated with low mortality and lower morbidity compared to open repair
- Spinal cord injury and resultant paraplegia remains a devastating complication
 - Up to 10-15%



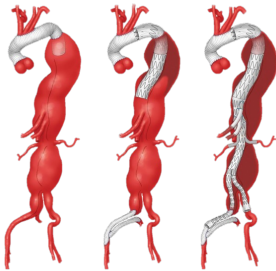
STAGING

- Staged endovascular repair of complex aneurysms may decrease the risk of spinal cord injury.
 - Usually 1st stage TEVAR or open arch reconstruction
- Staging predisposes patients to longer time for final repair and potential Interval Aortic Events (IAE).

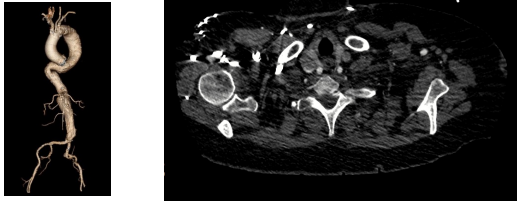


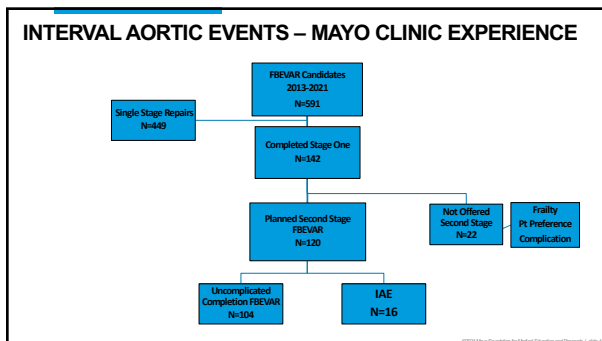
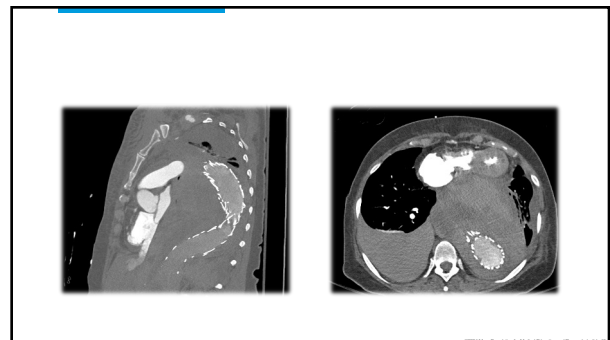
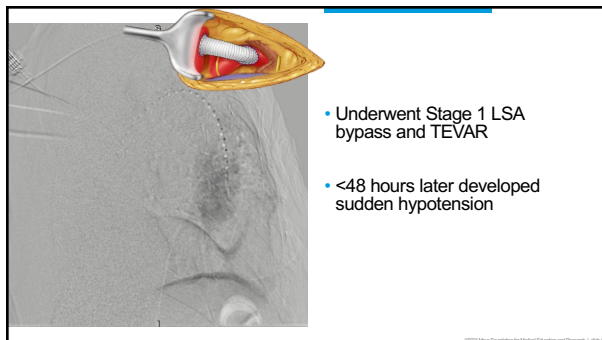
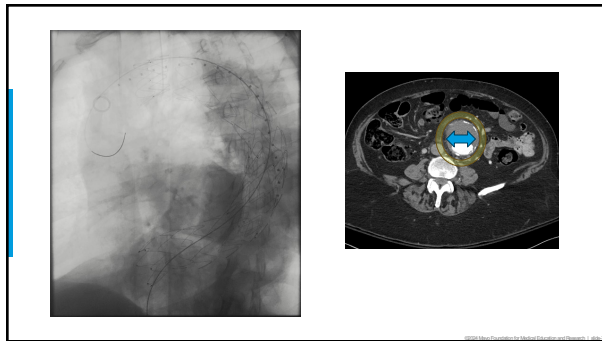
IMPLICATIONS OF STAGING

- What are the risks of Interval Aortic Events (IAE) during staged endovascular aneurysm repair?
 - Symptomatic presentation
 - Rupture
 - Confirmed/Presumed
 - Unexplained death



73 YO WITH 7.2CM TYPE II TAAA






ANEURYSM CHARACTERISTICS

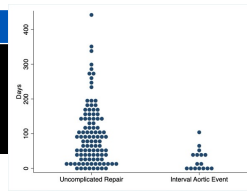
| | IAE n=16 (%) | Uncomplicated FBEVAR n=104(%) | p-value |
|--|--------------|-------------------------------|---------|
| Aneurysm extent | | | 0.310 |
| Extent II | 10 (63) | 74 (71) | |
| Max aortic diameter (mm) | 76.6 | 66.6 | <0.001 |
| Location of max diameter | | | 0.472 |
| Chest | 11 (69) | 66 (63) | |
| Abdomen | 5 (31) | 29 (28) | |
| Equal | 0 (0) | 9 (9) | |
| Aortic size index (cm/m ²) | 3.9 | 3.5 | 0.042 |
| Aortic height index (cm/m) | 4.5 | 3.9 | <0.001 |

SUMMARY OF IAE

| | n=16 |
|----------------------------|------|
| Confirmed rupture | 6 |
| Presumed rupture | 4 |
| Symptomatic aneurysm | 4 |
| Unexplained interval death | 2 |



TIMING OF EVENTS

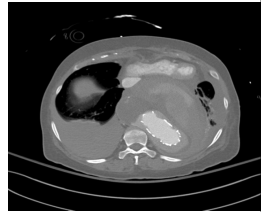


MORTALITY

| | n (%) |
|---------------------------------|---------|
| IAE | 11 (69) |
| Uncomplicated Completion FBEVAR | 0 (0) |

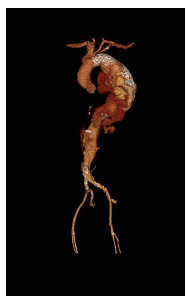
IMPLICATIONS

- 2-4 weeks for planned staging interval
 - 2 weeks for aneurysms >7cm with reasonable SCI risk
 - 4 weeks for smaller aneurysms or those with high risk for SCI



SUMMARY

- Incidence of IAE was 13% in our cohort
- Main risk factor for IAE is aneurysm size
 - Remains significant when indexed to BSA and height
- Mortality of IAE is high compared to uncomplicated FBEVAR cases
- Time to IAE is significantly shorter than time to uncomplicated repair



CONCLUSIONS

- Staging provides a crucial benefit in reducing spinal cord injury, however, in patient with large aneurysms the risk of IAE must be balanced
- Future study is key to determining optimal patient selection and timing of staging to maximize spinal cord benefit while reducing risk of IAE

