Detection and Management of FEVAR Complications: They are Part of the Game

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Disclosure Statement

- Consultant
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FEVAR Utilization

- FEVAR has been used worldwide in selected centers for over a decade with excellent published results
- In the U.S., FEVAR:
  - was approved in April 2012
  - >300 accounts have been trained
  - >2500 cases have been performed
  - >150 cases are performed monthly
- A significant number of patients can benefit from the technology
- Is it not free of complications

FEVAR Complications

- In carefully selected patients major complications are rare.
- Most common & unique complications associated with FEVAR are:
  - Branch complications - mostly renal
  - Additional potential sources of endoleaks

Renal Complications during FEVAR

- Renal complications during the 5 year follow up of the Pivotal Trial included:
  - Renal Infarcts – 12%
  - Renal Insufficiency – 14%
  - Renal Failure (HD) – 5%
  - Renal artery occlusion – 5%
  - Stenosis/compression – 25%

Oderich G et al., J Vasc Surg 2014
FEVAR Complications

• Complications can occur:
  – at the time of the procedure
  – during long-term follow up

• The best time to address many of the complications is at the time of the initial procedure.

• Careful imaging is needed:
  – selective angiography
  – IVUS
  – Intraoperative CT evaluation
  – CTA, branch US
  – angiography

FEVAR Complications

• Branch complications
  – Arterial dissection / rupture
  – Stent kinking / compression
  – Endoleaks
  – Stent dislodgement / disconnection

FEVAR Complications

• Arterial dissection / rupture
  – Associated with challenging anatomy, branch disease and multiple manipulations for access
  – Early recognition critical
  – Treatment can often maintain distal perfusion and arterial patency

FEVAR Complications

• Arterial dissection
  – Additional stenting distally can often correct the situation

FEVAR Complications

• Arterial perforation / rupture
  – Embolization or use of covered stents will often correct the situation after inflow control is obtained

FEVAR Complications

• Stent kink / compression
  – Avoid by careful manipulations
  – May need re-angioplasty, flaring, or additional distal stent
FEVAR Complications

- Stent dislodgement / disconnection
  - Intraprocedural capture and deployment
  - Disconnections can be avoided with appropriate flairing and extension into the fenestrated graft
  - Late disconnections may be challenging to correct after misalignment occurs

FEVAR Complications

- Endoleaks
  - Re-angioplasty of all junctions of concern
  - Additional components
  - Late Type I leaks are challenging and embolization may be the best option

Conclusions

- FEVAR complications are rare in well selected patients.
- Thorough evaluation during and after the procedure with multiple modalities is necessary to detect some of the complications that can occur.
- Most complications can be successfully managed with endovascular techniques.