Aorto bronchial and esophagal fistula after TEVAR

Ludovic Canaud; Pierre Alric

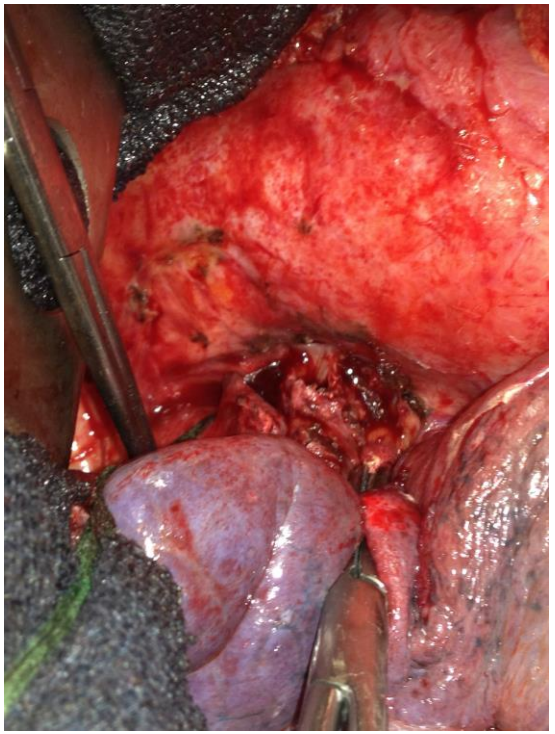
Thoracic and Vascular Surgery

Montpellier, France

Conflict of interest: none

European Registry of Endovascular Aortic Repair Complications

- 14 participating centers in Europe
- > 4500 patients
- Center with large experience in TEVAR



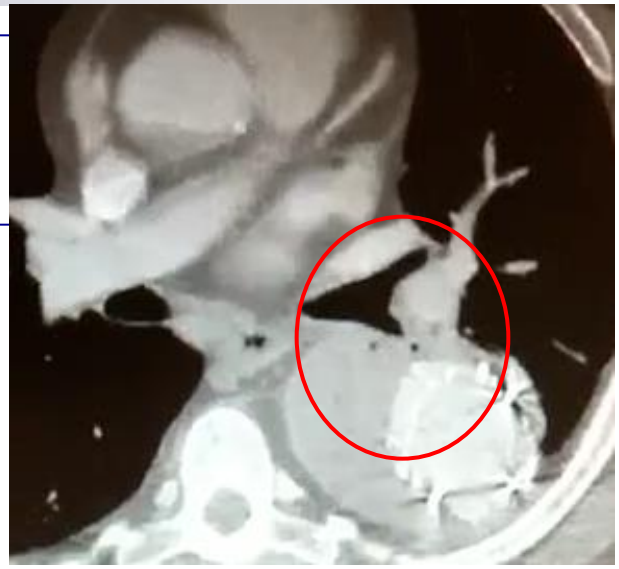
Aorto-bronchial fistula after TEVAR

Aorto-bronchial fistula after TEVAR n:26

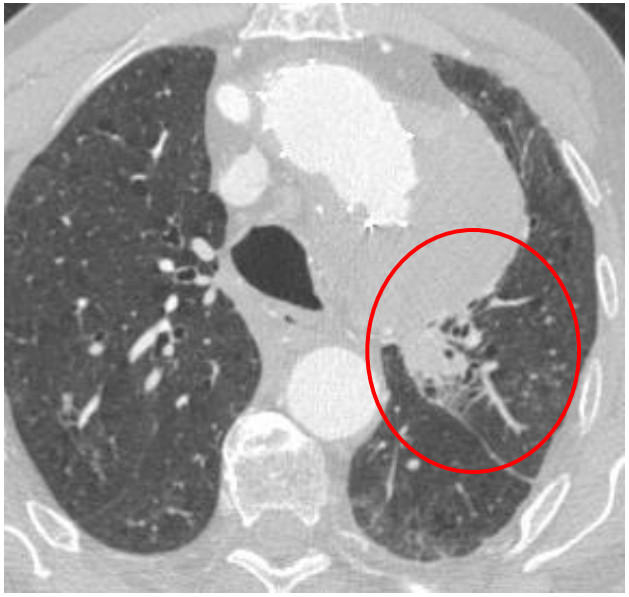
- **Uncommon complication:** **0.56%** **(26/4780)**
- **The median time interval between the initial TEVAR procedure and the development of ABPF:** **310 days (IQR 28-1065)**
- **The median age was 70 years (IQR 60-77) / Male 58%**
- **Haemoptysis:** **92%**

Aorto-bronchial and aorto-pulmonary fistulation after TEVAR- an analysis from the European Registry of Endovascular Aortic Repair Complications.
Eur J Cardiothoraci Surg 2014

Aorto-bronchial fistula



- **Diagnosis:**
  - ***CT scan***
    - Periaortic hematoma 65 %
    - Periaortic air 39 %
    - Lung hemorrhage 31 %
  - ***Endoscopy***



- **Underlying aortic pathology for TEVAR:**
  - Degenerative aortic aneurysm 58 %
  - Aortic dissection 15 %
  - Traumatic injury 15%

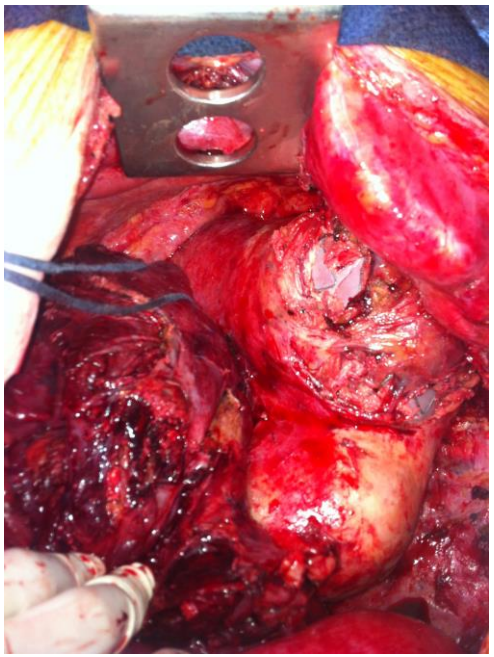
Aorto-bronchial

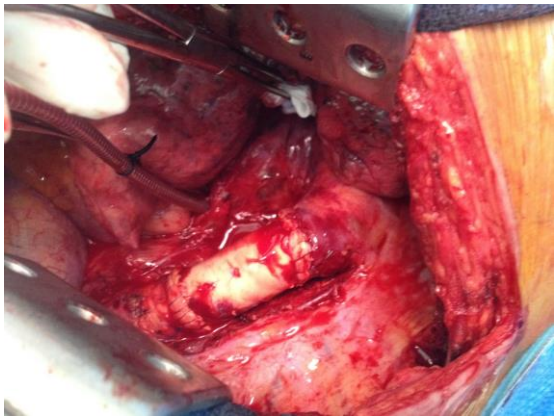
- **Risk factors:**
  - Emergent TEVAR Mediastinal hematoma 50%
  - External compression of the bronchial tree 50%
    - Endoleak type I or III 50%
    - Large aneurysm

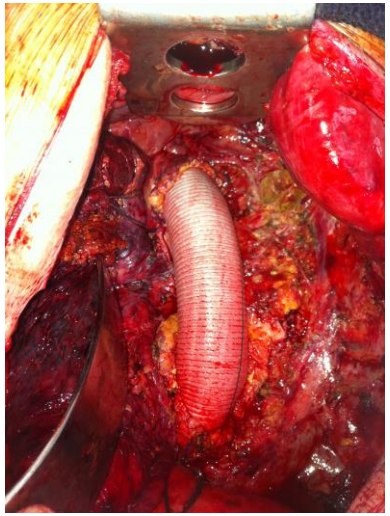
- **Treatment**
  - Conservative management: 19 %
  - Redo TEVAR: 27 %
  - Surgical conversion: 54 %

Aorto-bronchial fistula: Radical

- Left thoracotomy
- Left heart bypass
- Aortic resection
- Lung resection
- In situ reconstruction



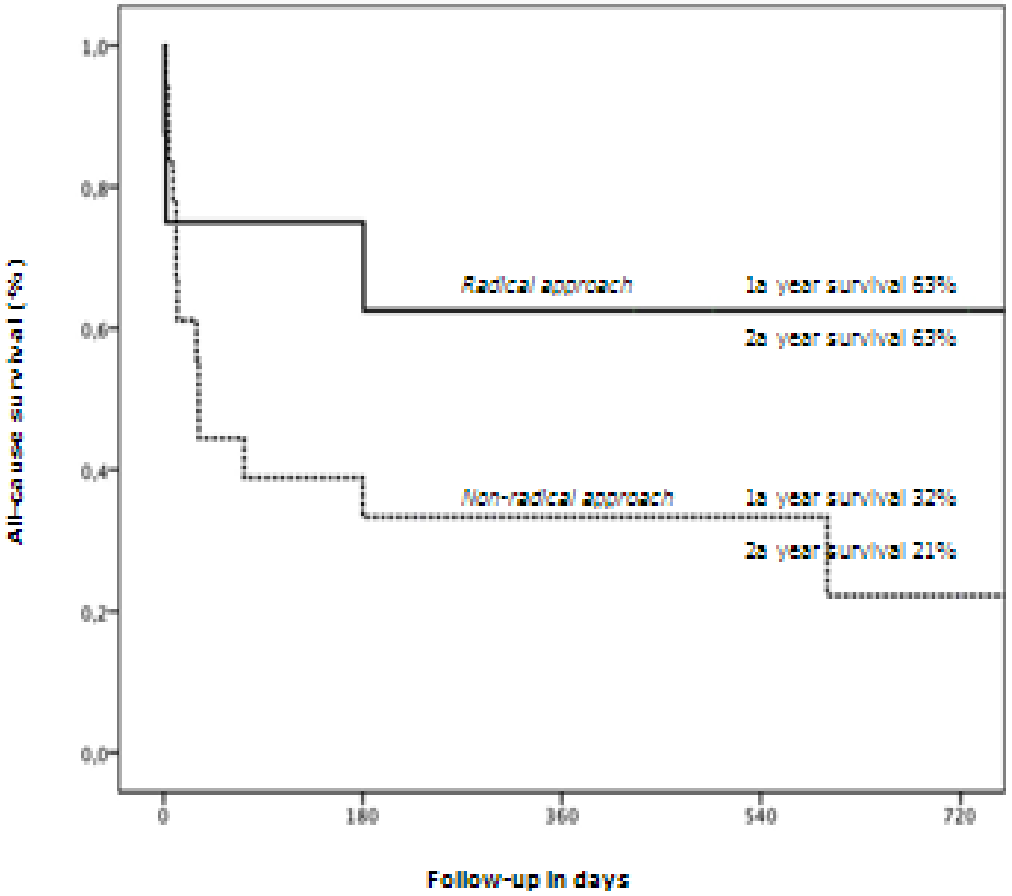




Canaud L, Alric P
Surgical conversion after TEVAR.
JTCS 2011

Aorto-bronchial fistula

- **Overall survival: 29%**
- **Difference in survival regarding the treatment**

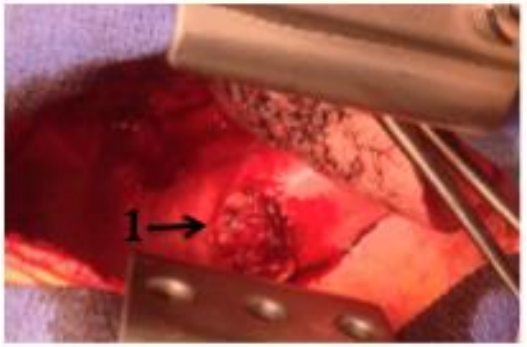


Aorto-bronchial fistula

- **Combined approach:**
  - *Debridement*
  - *Pulmonary resection*
  - *Coverage of the stent graft* using muscle or pleural flaps
  - +/- Redo TEVAR
  - *Broad-spectrum antibiotherapy*

- **5 patients:** *mean follow-up of 23.2*
  - All patients are alive
  - 1 radical resection at 4 months

Canaud L, Alric P.
Combined endovascular and surgical approach for aortobronchial fistula.
JTCS 2014



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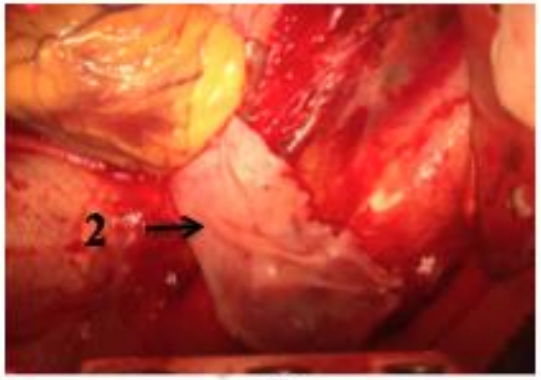

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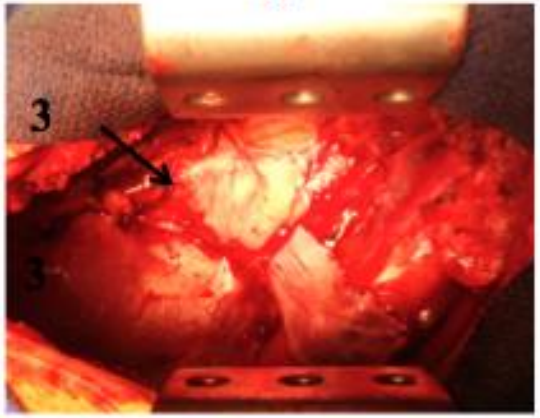


E

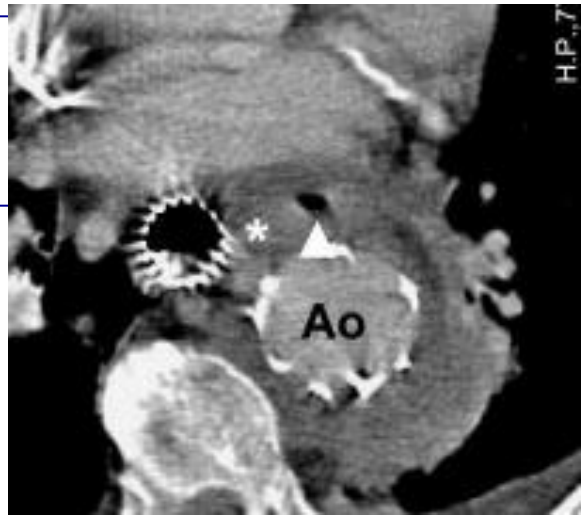
Aorto-esophageal fistula

Aorto-esophageal fistula

- **Uncommon complication: 1% (36/2387)**
- **The median time interval between the initial TEVAR procedure and the development of ABPF: 90 days (IQR 30-150)**
- **The median age was 69 years (IQR 56-75) / Male 75%**
- **Symptoms:**
  - **Fever 81%**
  - **Hematemesis 53%**
  - **Shock 22%**

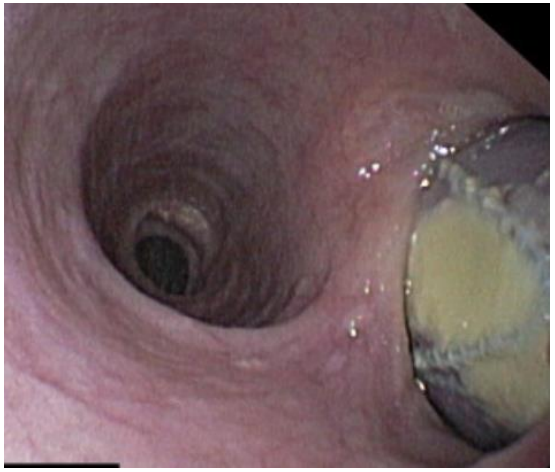
New insights regarding incidence, presentation and treatment options of aorto-esophageal fistulation after thoracic endovascular aortic repair- the European Registry of Endovascular Aortic Repair Complications.
Eur J Cardiothoracic Surg 2014

Aorto-esophageal fistula



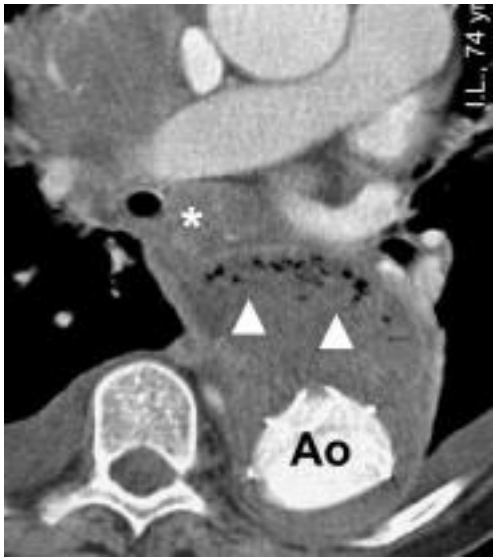
- **Disagnosis:**
  - ***CT scan***
    - Masses between aorta and esophagus
    - Air entrapment within the thrombosed aneurysm/dissection
  - ***Endoscopy***

- **Underlying aortic pathology for TEVAR:**
  - Atherosclerotic aneurysms 53%
  - Acute type B aortic dissections 14%
  - Penetrating atherosclerotic ulcers 14%

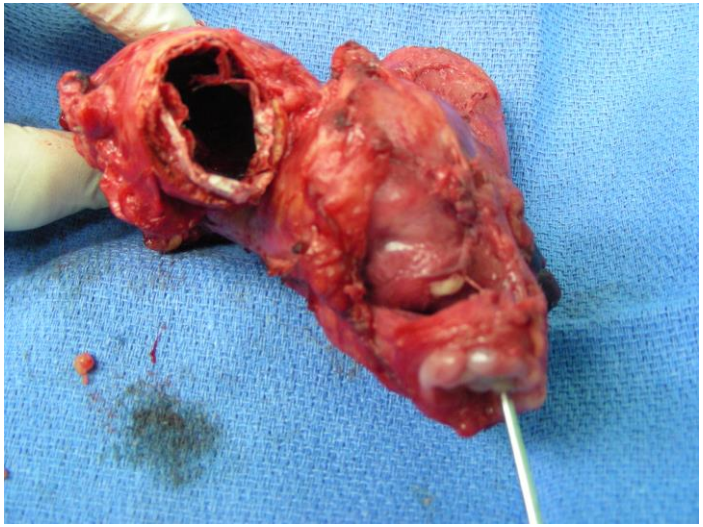


Aorto-esophageal fistula

- **Risk factors:**
  - Emergent TEVAR Mediastinal hematoma
  - External compression
    - Endoleak type I or III
    - Large aneurysm
  - Length of aortic coverage

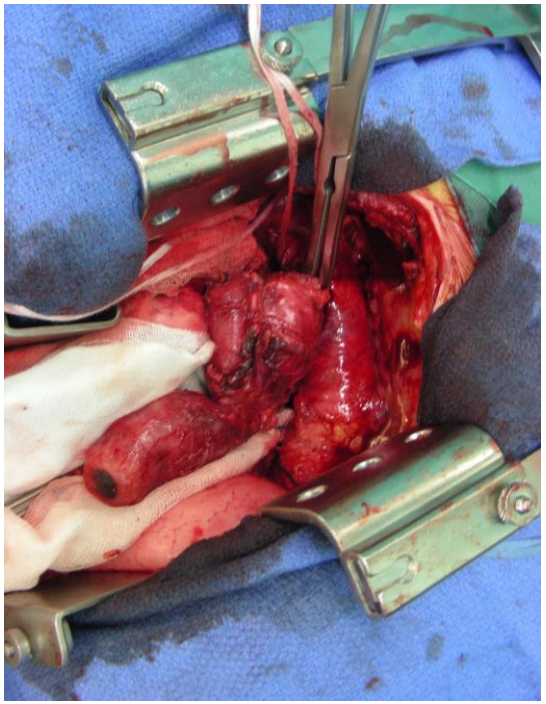


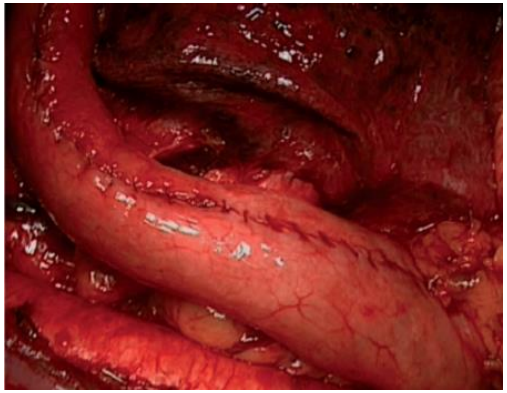
- **Treatment**
  - Conservative management: 28 %
  - Esophageal stenting: 17 %
  - Esophagectomy 19 %
  - Surgical conversion: 36 %



Aorto-esophageal fistula: Radical

- Left thoracotomy
- Left heart bypass
- Aortic resection
- Esophageal resection
- In situ reconstruction





Canaud L, Alric P.
Open surgical secondary procedures after TEVAR
EJVES 2014

Aorto-esophageal fistula

- **Overall survival at 1 year: 28%**

- **According to the surgical approach at 1 year:**
  - Conservative management: 0 %
  - Esophageal stenting: 17 %
  - Esophagectomy 43 %
  - Surgical conversion: 46 %

Conclusion

- **Uncommon < 2%**

- **Favoring factors**
  - Emergent TEVAR Mediastinal hematoma → Drainage?
  - External compression
    - Endoleak type I or III
    - Large aneurysm

- **CT scan / Fibroscopy**

- **Treatment: overall survival < 30%**
  - **Conservative: *uniformly fatal***
  - **Radical or combined approach leaving the SG in place: *similar results***