Non-calcified aorto-iliac steno-obstructive lesions are associated with worse results following endovascular treatment

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Disclosure

Speaker name:

Alessia Sonetto

I have the following potential conflicts of interest to report:

- ☐ Consulting
- ☐ Employment in industry
- ☐ Stockholder of a healthcare company
- ☐ Owner of a healthcare company
- ☐ Other(s)

- ☒ I do not have any potential conflict of interest

Background

- The continuous improvements of materials and operators skills led to the use of the endovascular approach as first-line therapy for aorto-iliac obstructive disease.

Kasemi et al. Ann Vasc Surg 2015

- Endovascular treatment (EVT) of TASC C-D aorto-iliac lesions showed a similar outcome to surgical treatment.

Dorigo et al. J Vasc Surg 2017

- **Major complications after aorto-bifemoral bypass is approximately 16% and operative mortality is 4.1%.** Complications after EVT range from 0-16.3% and procedural mortality is extremely rare. Considering less morbidity and mortality in EVT and the disadvantage of patency in extra-anatomical bypass, **EVT as the first strategy** may be an acceptable treatment choice.

Morisaki et al. Ann Vasc Surg 2017

Background

- Different technical approaches: bare stents (self-balloon expandable), covered stents, reconstruction with endoprosthesis.

- **Severe calcification** was associated with increased **risk of technical failure**.

Kim et al. J Vasc Surg 2011

Purpose of study

To evaluate **Technical Success** (TS) and **outcome** of endovascular treatment with aortic stenting (AS) in aorto-iliac steno-obstructive disease and **assess plaque nature impact** on outcome.

Methods

- June 2004 to June 2017
- Retrospective study of prospectively maintained data base.
- **Inclusion criteria:**
  - Steno-obstructive aorto-iliac disease
  - Treated by aortic stenting ± iliac stenting
- Patient's demographics and characteristics were assessed.
- Patients' lesions were evaluated by angioCT scan (for aorto-iliac district) and Duplex ultrasound (for iliac and femoro-popliteal disease).

Methods

- Lesions were classified according to:
  - Aorto-iliac topography (aortic disease – aorto-iliac disease).
  - Quality of the plaque

- Follow up: clinical examination and DUS at 3, 6, and 12 months, and then yearly. In case of non-conclusive DUS, angioCT scan was prescribed.

Methods

- Endpoints:
  - *Primary* (peri-operative): Technical and Clinical Success
  - *Secondary* (follow-up): Primary, Secondary, Assisted Patency, Survival, Limb Salvage, impact of plaque quality on outcome

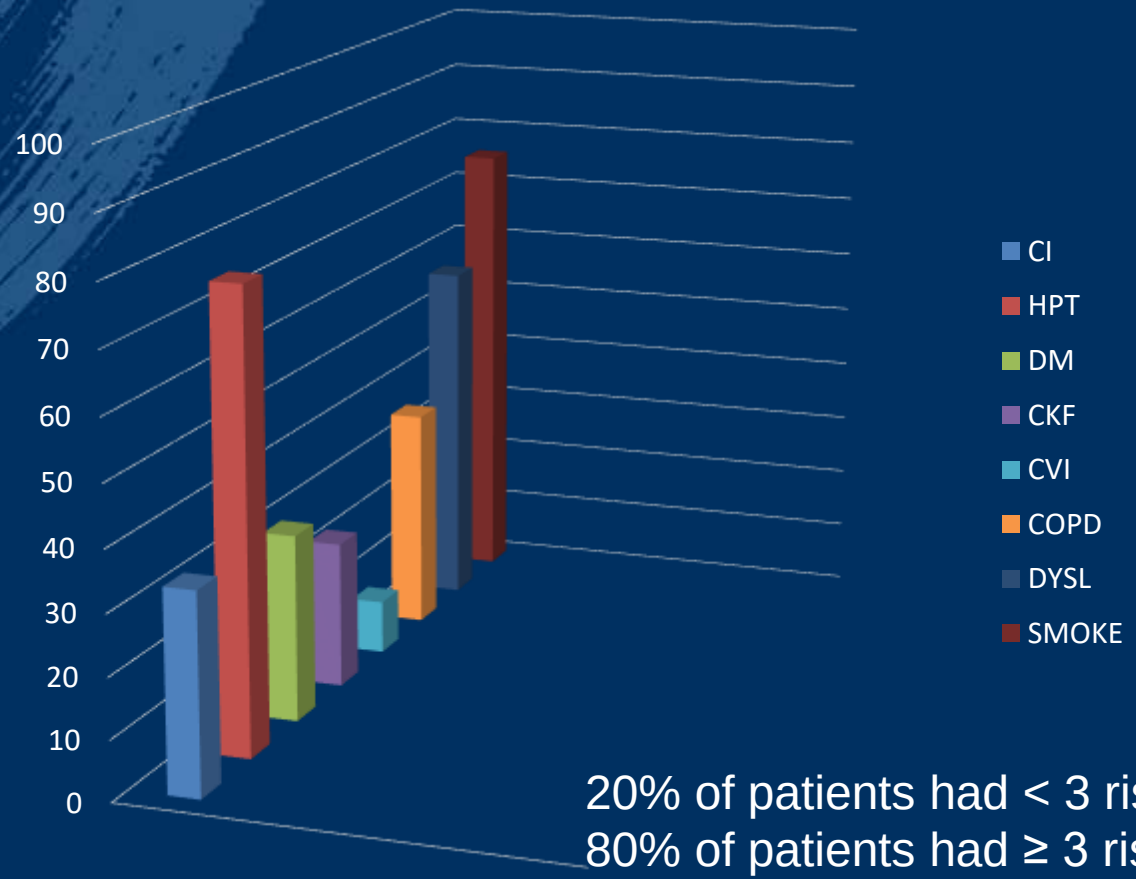
- Statistics:
  - Descriptive: frequency statistics were used for population characteristics.
  - Kaplan-Meier analysis was performed to define endpoints.
  - Kaplan-Meier analysis with Log-Rank test was performed to compare the different type of plaques with patency.

Results

Patients N°	Mean age	M/F %	Coexsisting infra-inguinal disease	Rutherford
45	61±10.2years	60/40	24.4%	- Stage 3: 22.2% - Stage 4: 28.9% - Stage 5: 4.4%

Results

Risk factors

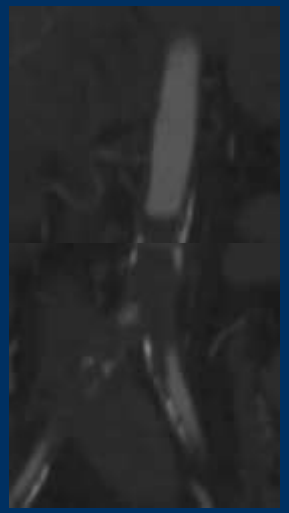


20% of patients had < 3 risk factors
80% of patients had ≥ 3 risk factors

Results

- **Aorto-iliac Lesions**:
  - Isolated aortic steno-obstructions 33.4%

  - Aorto-iliac steno-obstructions 66.6%
    - Aorto-iliac stenosis 64.5%
    - Aorto-iliac occlusion 35.5%



Results

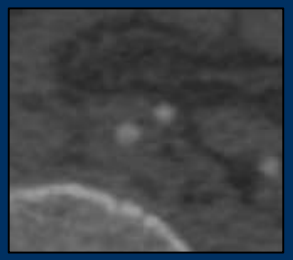
- **Aortic stents**:
  - Self-expandable **53.3%**
  - Balloon-expandable 42.2%
  - Covered stents 4.4%

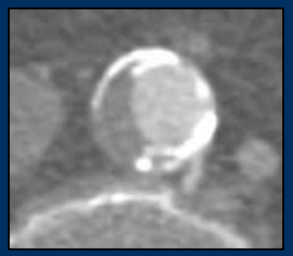
- **Associated iliac stenting** in **68.9%** of patients

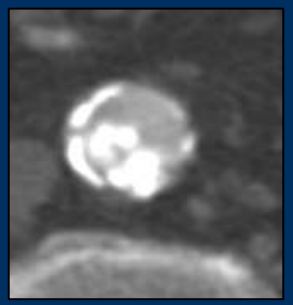
Results

AngioCT characteristics of Plaque :

- Non calcified (<10% calcifications) 15.6%
- Mixed (calcifications 10%-80%) 60%
- Calcified (>80% calcifications) 24.4%







Results

Peri-operative results:

- Technical Success 100% (even in calcified lesions)
- Clinical Success 95.5%

Follow-up results:

- Mean follow-up: 69.8 months
- At **5 years**:

PP	SP	S	LS
84.4%	91.3%	88.8%	93.4%

Results

- **Primary Patency at 12 months, according to aorto-iliac topography and plaque nature:**

1 year	Non-calcified	Mixed	Calcified
Aortic	100%	100%	100%
Aorto-iliac	71.4%	100%	100%

- **Non calcified** plaque resulted to be an **independent risk factor for Primary Patency loss (P<.001)**.

Conclusions

- Endovascular treatment of aorto-iliac steno-obstructive disease provides excellent perioperative (technical and clinical) results
- The follow up results seem to be related to the topography of aortic disease (aortic or aorto-iliac) and the quality of the aorto-iliac plaques
- Soft plaque seems to be related to a 12-month loss of Primary Patency

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