

Treatment of blunt aortic isthmus rupture : 16-year single center experience

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OBJECTIVES

Diagnosis and management of blunt aortic isthmus rupture have improved the last 20 years. Compared to surgical repair, endovascular repair is associated with lower postoperative mortality and ischemic spinal cord injury rates. Delayed treatment is accepted.

Our aims were to review all the aortic isthmus rupture admitted in our university hospital and to evaluate results of the treatments.

METHODS

We reviewed retrospectively all patients admitted in our institution between 2002 and 2017.

The lesions were categorized in four grades, related to the importance of the rupture on computed tomography. All types of treatment were included in this study: conservative attitude, open surgery and endovascular procedure.

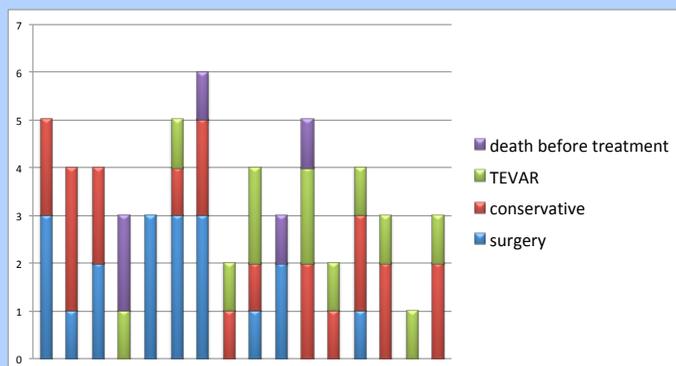
RESULTS

57 patients (14 f, 43 m) were hospitalized. Mean age was 47 years. Major cause was moto or car crash. The distribution of the aortic ruptures in grade 1 to 4 was respectively 19, 21, 12 and 5. The majority of patients also had other injuries. 5 patients died before management of the grade 4 aortic lesion. Mean hospital stay was 47 days. Median follow-up was 59 months.

	conservative	surgery	TEVAR
GRADE 1	14	3	2
GRADE 2	3	10	8
GRADE 3	4	6	2
GRADE 4	5	0	0

In the TEVAR group, 5 had TEVAR alone and 7 had an hybrid procedure combining carotido-subclavian bypass and TEVAR. 10 of the 12 endovascular procedures were at least two days delayed compared to the original trauma. Two patients treated conservatively (grade 1-3) died from other associated lesions.

After surgical treatment, one patient died and 2 had spinal cord injury. The later didn't have any distal perfusion during surgery. Endovascular treatment was not associated with mortality and spinal cord injury.



CONCLUSIONS

In our experience, endovascular repair of aortic isthmus rupture is safer than surgical treatment. It can be performed with delay.

If surgery is performed, it has to be done with distal perfusion to prevent spinal cord injury. Long-term results of endovascular approach are not known.

type of associated lesions	percentage
thoracic	80
members	30
pelvis	26
spinal	26
abdominal	21
cerebral	9