Natural history of the enlarged ascending thoracic aorta: an observational long term study

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To assess the long-term outcome of patients with an enlarged ascending thoracic aorta (ATA), a retrospective study was performed.

Methods: Inclusion criteria: ATA diameter of 38 mm or more by ETT (813 consecutive cases).

Inclusion period: 1.1.2003–31.12.2016.

Results: At baseline, the mean diameter of the ATA was 42±3 mm, the mean Z-score was 2.7±0.8.

In the subgroup of patients with 2 ETT examinations (and no surgical cure of the ATA), the mean diameter was 41.9±4.8 mm, the mean Z-score 2.4±1.1 after a mean follow-up of 6 years.

During the follow-up, 52 patients had an intervention on the ATA, 26 patients were operated within the first 3 months after the diagnostic echocardiogram. 26 patients were operated during FU.

In the 791 remaining patients (without early intervention), the event rate (death, intervention on the ATA) were assessed by the competing risk model.

In the group of patients with a baseline ATA diameter of less than 41 mm (Group A: n=254), the cumulative incidence of death at 5 and 10 y was 34% and 61%; in the group of patients with an ATA diameter of 41–42 mm (Group B: n=238) the incidence was 34% and 61% respectively, in the group of patients with an ATA diameter of 43–44 mm (Group C: n=147), the incidence was 32% and 58%, in the group of patients with a diameter of 45 and more (Group D: n=150), the incidence was 31.1% and 61% (NS).

The cumulative incidence of surgical interventions on the ATA at 5 and 10 years was 0.4% and 1% in group A, 1.3 and 1.8% in group B, 0.7 and 1.4% in group C and 9.8 and 12.9% in group D ($p<0.05$).

Similar results were observed in patients according to the Z-scores. In the group of patients (221) with a Z-score >3, the incidence of intervention at 5 and 10 y was respectively 7.6% and 10.7% (p=0.01).

Conclusions:

– The mean diameter of the enlarged ATA remained nearly unchanged over a period of 6 years.

– No impact of the enlarged ATA on survival was observed.

– Only patients with an ATA diameter of 45 mm and more (or a Z-score of 3 and more) needed an intervention on the ATA at a rate of ± 10% at 10 y after the initial echocardiographic diagnosis.