ANNULUS RUPTURE AFTER TAVI WITH A BALLOON EXPANDABLE VALVE ALWAYS A HOPELESS COMPLICATION ??

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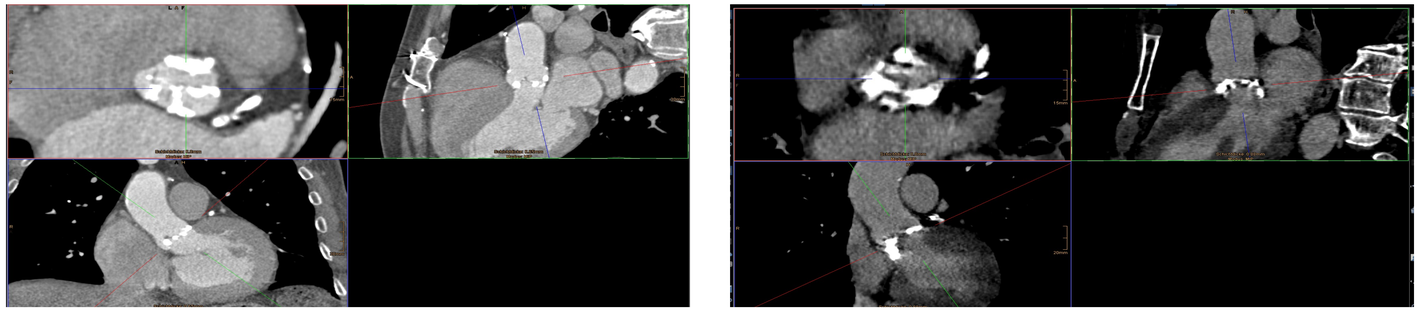
Background: Rupture of the aortic annulus during TAVI procedure is a rare but life-threatening complication that makes immediate emergency operation necessary. Due to age and comorbidities of the TAVI patients, one might ask if these profoundly invasive rescue operations were appropriate. To address this question we present our data.

Methods: In the time period since 2012 we identified 6 (0.8%) patients (table 1) out of 720 who had an acute annulus rupture during TAVI procedure. Median age was 84.5 years (75-88), median log Euroscore was 18.1 (9.5-32) and median STS score was 4.7 (2.4-6.0). A retrospective analysis for intraoperative curse, outcome and 30day mortality was performed.

Results: In all patients a balloon expendable valve was implanted. One patient got symptomatic five hours after TAVI procedure on ICU and deceased after prolonged resuscitation.
In five patients the haemodynamic instability was detected in the operation room. So emergency surgery was performed immediately.
One of these patients remained stable and recovered well after pericardial drainage - the TAVI prosthesis might have sealed the rupture.
Four patients were taken to the heart lung machine and were treated with conventional aortic valve replacement and repair of the aortic annulus via full sternotomy. Two of these patients recovered well and were discharged home. One patient suffered of severe cerebral injury and deceased 3 weeks after. In one patient annulus destruction was too severe and he died in the operating room.

Patient:	Age (years):	Sex:	logEURO score	STS score	prev. heart surgery:	Pro-BNP (ng/l):	Severe Anulus Calcification:
1	87	female	31,94	4,73	no	4237	++
2	82	male	20,63	5,93	no	5366	++
3	88	female	15,55	5,68	no	921	++
4	75	male	9,47	3,36	CABG	2214	+++
5	88	male	7,21	2,37	no	3884	+
6	77	male	23,82	5,51	no	5685	+++

Table 1: Patient characteristics



Patient Nr. 4 and 6 – severe calcification

Conclusion: Annulus rupture after TAVI is a rare condition. Acute and perioperative mortality is profoundly high. Emergency surgery could be performed in most of the patients and rescued the majority of these patients in our case series. This confirms the additional safety benefit of available cardiac surgery when doing TAVI procedure.