PROGRAMMA WETENSCHAPPELIJKE VOORJAARSVERGADERING NVT

20 mei 2022

Nederlandse Vereniging voor
Thoraxchirurgie

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Deze wetenschappelijke voorjaarsvergadering wordt geaccrediteerd en gewaardeerd met 8 accreditatiepunten. De behaalde accreditatiepunten worden automatisch bijgeschreven in het persoonlijk GAIA dossier.

Algemene Ledenvergadering
Toegang tot de algemene ledenvergadering hebben alle gewone leden van de vereniging, alle bestuursleden, alle ereleden, alle senior leden alsmede de voorzitter en secretaris van de Juniorkamer.

Programma 20 mei 2022

8.50 – 9.20 uur	**Ontvangst en inschrijving**	Foyer
9.20 uur	**Opening door de voorzitter**	
9.30 – 10.45 uur	**Wetenschappelijke vergadering - abstracts** **Sessievoorzitters**: A.H. Driessen	Zaal 6
9.30 uur	**S.H.Q. Beukers** EARLY AND LATE OUTCOMES AFTER SINGLE-VALVE TRICUSPID SURGERY: A 21-YEAR SINGLE-CENTER EXPERIENCE	
9.45 uur	**M.L. Wester** FACTORS CONTRIBUTING TO SEX-DIFFERENCES IN OUTCOMES AFTER CORONARY ARTERY BYPASS GRAFTING; DATA FROM THE NETHERLANDS HEART REGISTRATION	
10.00 uur	**C.A.J. van der Heijden** MINIMALLY INVASIVE THORACOSCOPIC ATRIAL FIBRILLATION ABLATION AND LEFT ANTERIOR DESCENDING BYPASS GRAFTING	
10.15 uur	**A.R. de Jong** ROBOTIC-ASSISTED MINIMALLY INVASIVE DIRECT CORONARY ARTERY BYPASS SURGERY AND HYBRID REVASCULARIZATION – THE DUTCH EXPERIENCE	
10.30 uur	**N.M.A.J. Timmermans** MODIFIED SIZING TECHNIQUE IMPROVES POSTOPERATIVE PACEMAKER RATE IN THE PERCEVAL SUTURELESS VALVE PROSTHESIS	
10.45 – 11.15 uur	**Koffiepauze**	Foyer
11.15 – 12.30 uur	**Algemene Ledenvergadering**	Zaal 6
11.15 – 12.30 uur	**Alternatief programma juniorkamer, NP’ers en PA’s**	Zaal 7
12.30 – 13.30 uur	**Lunch**	Foyer
13.30 – 14.45 uur	**Themasessie: ontwikkelingen in de transplantatiechirurgie**	Zaal 6

14.45 – 15.15 uur	**Koffiepauze**	Foyer
15.15 – 16.30 uur	**Wetenschappelijke vergadering - abstracts** **Sessievoorzitters:** A.H. Driessen en D.R. Koolbergen	Zaal 6
15.15 uur	**J. Jongenotter** ASCENDING AORTA REPLACEMENT WITH CONCOMITANT CORONARY BYPASS GRAFTING – IS THE PATENCY OF THE SAPHENOUS VENOUS GRAFTS IMPAIRED WHEN IMPLANTED IN A VASCULAR PROSTHESIS?	
15.30 uur	**D.J. de Oliveira Marreiros** TOTAL ARCH REPLACEMENT OF CONSERVATIVE SUGICAL TREATMENT IN THE MANAGEMENT OF ACUTE TYPE A AORTIC DISSECTION: A SINGLE-CENTRE 30-YEAR EXPERIENCE	
15.45 uur	**B.G. Sibinga Mulder** CUSTOM-MADE, SCALLOPED STENTGRAFTS IN TEVAR: SINGLE CENTER, MIDTERM OUTCOME	
16.00 uur	**T. Somers** DIRECT AORTIC CANNULATION AS SAVE ALTERNATIVE TO FEMORAL ARTERY CANNULATION – 16 YEARS OF TYPE A DISSECTION SURGERY EXPERIENCE	
16.15 uur	**B. Arabkhani** AORTIC VALVE VISUALIZATION AND PRESSURIZATION DEVICE: A NOVEL DEVICE FOR INTRAOPERATIVE EVALUATION OF AORTIC VALVE REPAIR PROCEDURES	
16.30 uur	**Borrel**	Foyer
16.30 – 17.00 uur	**Tekenen voor accreditatie**	Inschrijfbalie
16.45 – 17.00 uur	**Uitreiking assistentenprijsi** Ter beschikking gesteld door de Nederlandse Vereniging voor Thoraxchirurgie	Foyer

Abstract

09.30 uur

EARLY AND LATE OUTCOMES AFTER SINGLE-VALVE TRICUSPID SURGERY: A 21-YEAR SINGLE-CENTER EXPERIENCE

S.H.Q. Beukers [a], A. Tjon Joek Tjien [a], S. Houterman [b], A.H.M. van Straten [a], J.L.R. Romeo [a], M.A. Soliman Hamad [a]

[a] *Department of Cardio-Thoracic Surgery, Catharina Hospital, Eindhoven,* [b] *Department of Education and Research, Catharina Hospital, Eindhoven*

Purpose

Surgery for severe isolated tricuspid regurgitation (TR) is scarcely performed (<5%). Thirty-day mortality varies from 4.6% to 14.6%, whilst long-term mortality is increased as well. We aim to investigate short- and long-term clinical and echocardiographic results after isolated valve surgery of the tricuspid valve (TV) by describing our 21-year experience.

Methods

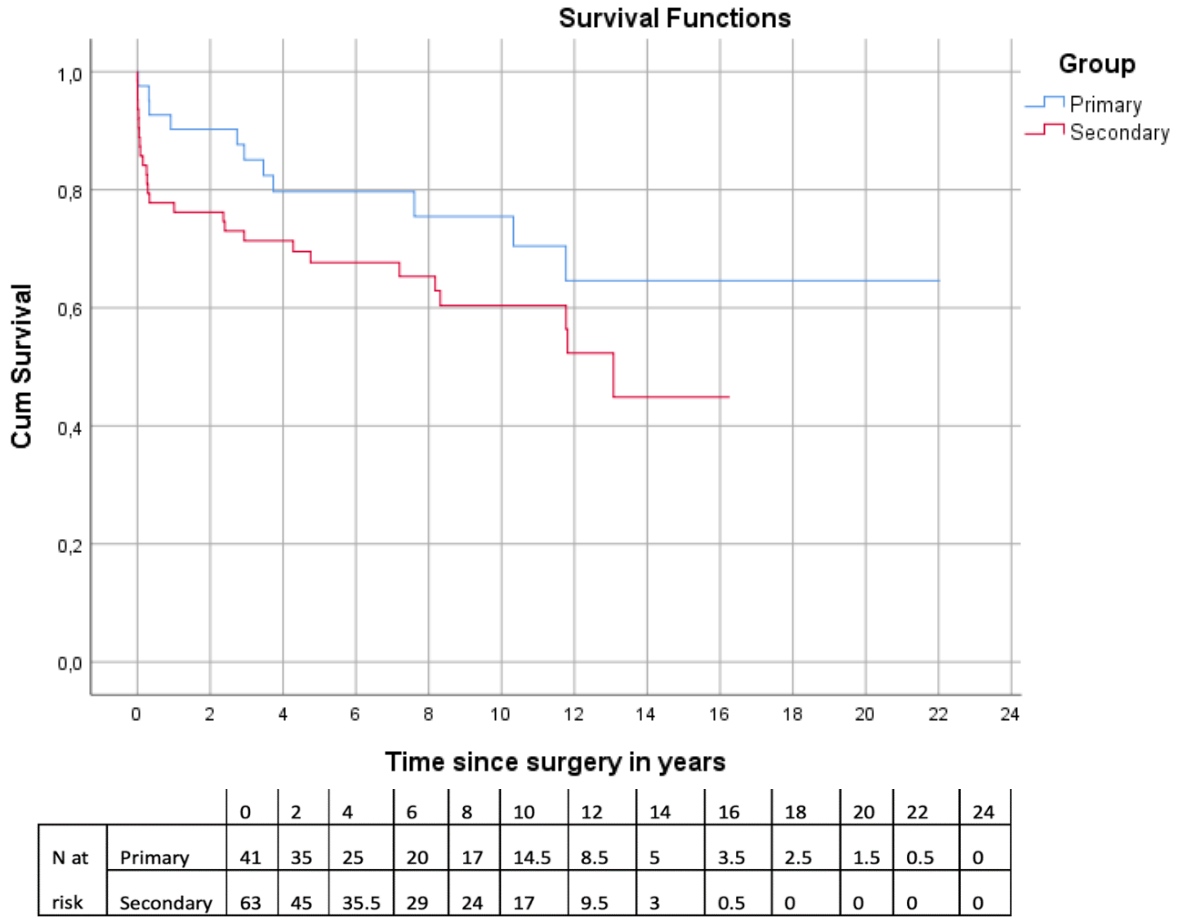
This study included 108 patients who underwent TV surgery without concomitant valve surgery from 1998 to 2019 in the Catharina Hospital in Eindhoven. Patients were divided into a primary or secondary group, depending on the indication for surgery. Primary outcome was late mortality. Secondary outcomes were post-operative complications, length of stay and long term clinical and echocardiographic results.

Results

Thirty-day mortality was 9.3% and was higher in the secondary group (2.3% vs 13.8%, p=0.049), while postoperative AV-block and low-output were significantly more prevalent in the primary group. During follow up, 27 (25%) patients died; in 40% the cause was cardiac. After a median follow-up of 9.0 ± 7.7 years, TV function in surviving patients had improved significantly compared to the baseline function (p<0.001) and 90.8% had New York Heart Association (NYHA) functional class I-II. However, 13.8% was readmitted for decompensation and 10.8% was diagnosed with heart failure.

Conclusions

Isolated TV surgery remains a challenging procedure with relatively high early and late mortality. In our population, the outcome of surgery is correlated to the etiology of TR and indication of surgery rather than patient characteristics. Approximately 90% of patients who survived the operation benefited in term of improved symptoms.



		0	2	4	6	8	10	12	14	16	18	20	22	24
N at risk	Primary	41	35	25	20	17	14.5	8.5	5	3.5	2.5	1.5	0.5	0
	Secondary	63	45	35.5	29	24	17	9.5	3	0.5	0	0	0	0

Figure 1. Kaplan Meier survival curves of the study groups.

Abstract

09.45 uur

FACTORS CONTRIBUTING TO SEX-DIFFERENCES IN OUTCOMES AFTER CORONARY ARTERY BYPASS GRAFTING; DATA FROM THE NETHERLANDS HEART REGISTRATION

M.L. Wester[1], J.R. Olsthoorn[1], M.A. Soliman-Hamad[1], S. Houterman[2,3], M.M. Roefs[3], J.F.J. ter Woorst MD[1] on behalf of the Cardiothoracic Surgery Registration Committee of the Netherlands Heart Registration[4]

[1] Department of Cardiothoracic Surgery, Catharina Hospital Eindhoven, the Netherlands,

[2] Department of Education and Research , Catharina Hospital Eindhoven, the Netherlands,

[3] Netherlands Heart Registration, Utrecht, the Netherlands, [4] See addendum for Cardiothoracic Surgery Registration Committee members of the Netherlands Heart Registration

Purpose

Controversies remain regarding sex-difference in outcomes after coronary artery bypass grafting (CABG) . We aimed to determine differences in early and late outcomes between sexes after CABG. Data was extracted from the Netherlands Heart Registration (NHR).

Methods

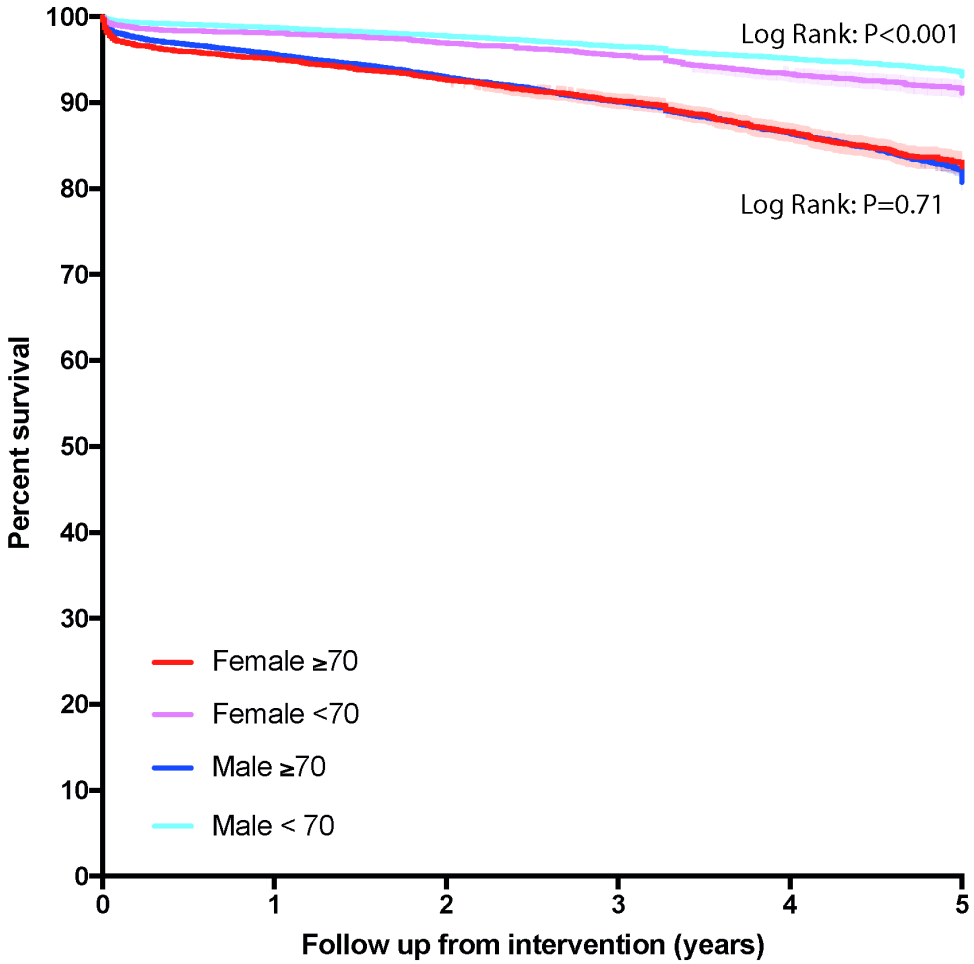
Data from all patients undergoing CABG, between 2013 until 2019 was retrieved from the NHR database. Primary outcomes were early mortality, morbidity and late survival. We divided the population into subgroups based on age (aged ≥ 70 years or <70 years).

Results

This study included 41,705 men and 10,048 women. Median follow-up was 3.6 [1.8 – 4.8] years. Women less frequently received ≥2 arterial grafts (15.9% vs 23.2%, P<0.001), had lower mean number of anastomoses (3.2±1.1 vs 3.5±1.1, P<0.001), thirty-day mortality was significantly higher (1.9% vs 1.0%; P<0.001) and 5-year survival rate was significantly lower (93.1% for men VS 91.3% in women (P<0.001)). Perioperative myocardial infarction, stroke, prolonged intubation, urinary tract infection and deep sternal wound infection more often occurred in women (all; p<0.001). Women had worse 5-year survival in the < 70 years subgroup (male 96.0% vs female 94.5%, P<0.001). Female sex was not significantly associated with late mortality after risk factor adjustment (HR 1.03 ;P=0.45). female sex was associated with worse late survival in patients < 70 years (HR 1.19; P<0.001)

Conclusions

Women who underwent CABG in our cohort presented with more complex risk profiles, were treated differently during surgery and had worse early and late outcomes compared to men. Female sex is associated with late mortality only in patients<70 years.



Patients at risk

Female ≥ 70	5.230	4.467	3.751	3.070	2.267	798
Female < 70	4.788	4.206	3.572	2.995	2.245	802
Male ≥ 70	16.066	13.742	11.254	8.930	6.366	4.433
Male < 70	25.551	22.348	18.999	15.831	11.847	2.255

Figure 1 Kaplan Meier survival analyses for the subgroups based on gender and age.

Abstract

10.00 uur

MINIMALLY INVASIVE THORACOSCOPIC ATRIAL FIBRILLATION ABLATION AND LEFT ANTERIOR DESCENDING BYPASS GRAFTING

CAJ van der Heijden, P. Segers, A. Masud, V. Weberndörfer, S.M. Chaldoupi, J.G.L.M. Luermans, S.M.J. van Kuijk, P.J.C. Barenbrug, J.G. Maessen, E. Bidar, B. Maesen
Maastricht University Medical Centre, Maastricht

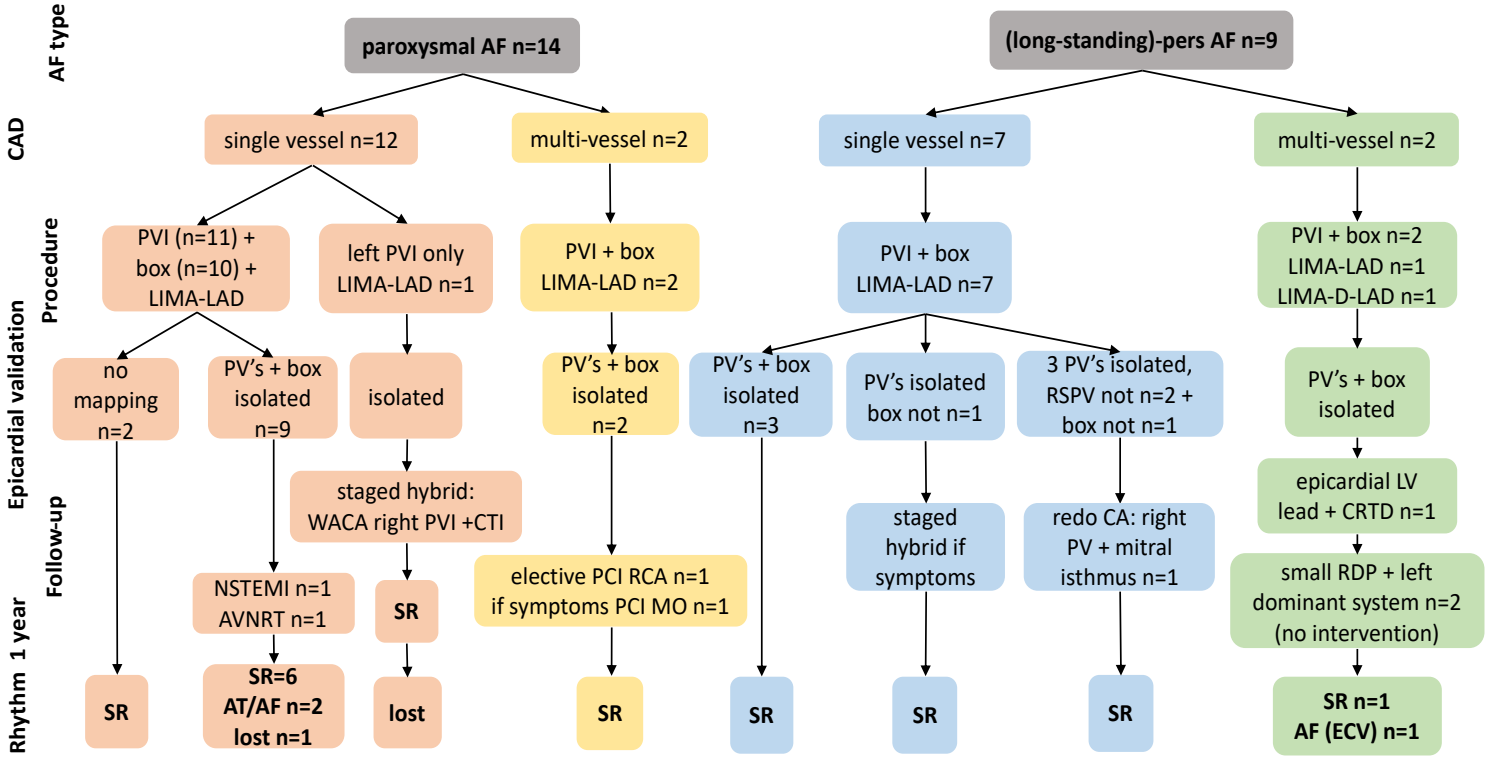
Purpose
To describe the feasibility, safety and efficacy of an all-in-one minimally invasive approach combining unilateral left-sided thoracoscopic AF ablation and concomitant MIDCAB surgery.

Methods
rospective, single-center analysis of all consecutive patients with AF and a critical left anterior descending artery (LAD) stenosis between 2017 and 2021 in the Maastricht University Medical Centre that underwent a unilateral left-sided thoracoscopic AF ablation and concomitant robot-assisted off-pump MIDCAB surgery.

Results
In total, 23 patients were analyzed (age 69±8 years, (longstanding)-persistent AF 39%, LAVI 42±11 ml/m^2). Unilateral left-sided thoracoscopic isolation of the left (n=23) and right (n=22) pulmonary veins and box (n=21) by radiofrequency ablation was succeeded by epicardial validation of exit- and entrance block (n=22) in a patient tailored treatment approach. All patients received robot-assisted LIMA harvesting and off-pump LIMA-(D)-LAD anastomosis through a left thoracotomy. The mean hospital stay was 6 days and post-operative complications included one bleeding from the thoracotomy wound, two myocardial infarctions of which one required PCI of the LIMA-LAD anastomosis and two patients were readmitted due to pleural and pericardial effusion requiring drainage. After 12 months, 81% of all patients were in sinus rhythm when allowing anti-arrhythmic drugs.

Conclusion
Unilateral left-sided thoracoscopic AF ablation and concomitant MIDCAB surgery is feasible, safe and efficacious, and a valid alternative to a full-sternotomy approach. For those patients with an incomplete ablation or revascularization, a staged hybrid ablation or revascularization can be considered to optimize a patient oriented and personalized treatment.

Figure 1. Patient specific treatment flowchart.



Flowchart representing patient individualized treatment strategies and outcome. AF=atrial fibrillation; AFL=atrial flutter; AT=atrial tachycardia; CA=catheter ablation; CAD=coronary artery disease; iCMP=ischemic cardiomyopathy; CRT-D=cardiac resynchronization therapy-defibrillator; CTI=cavo-triscupid isthmus; ECV=electrical cardioversion; LIMA-LAD=left internal mammary artery–left anterior descending artery; LV=left ventricle; NSTEMI=non-ST elevated myocardial infarction; PCI=percutaneous coronary intervention; PV=pulmonary vein; PVI=PV isolation; RCA=right coronary artery; RSPV=right superior pulmonary vein; SR=sinus rhythm; WACA=wide antral circumferential ablation.

Abstract

10.15 uur

ROBOTIC-ASSISTED MINIMALLY INVASIVE DIRECT CORONARY ARTERY BYPASS SURGERY AND HYBRID REVASCULARIZATION – THE DUTCH EXPERIENCE

A.R. de Jong[1], M. Gianoli[1], K.A. Jacob[1], H.F. Namba[1], M.M. Roefs[2], S.K. Singh[3], P. Segers[4], W.J.L. Suyker[1] on behalf of the Cardiothoracic Surgery and PCI Registration Committees of the Netherlands Heart Registration

[1]University Medical Center Utrecht, Utrecht, the Netherlands, [2] Netherlands Heart Registration, Utrecht, the Netherlands, [3]Isala Clinics, Zwolle, the Netherlands, [4]Maastricht University Medical Center, Maastricht, the Netherlands

Purpose

Robotic-assisted minimally invasive direct coronary artery bypass (RA-MIDCAB) surgery with or without hybrid coronary revascularization (HCR) are minimally invasive alternatives to coronary artery bypass surgery (CABG) in patients with isolated left anterior descending (LAD) or multi-vessel disease. Several studies have shown beneficial effects but were limited by being single center experiences and relatively small sample sizes. We analyzed a nationwide, large multicenter experience based on the Netherlands Heart Registration (NHR).

Methods

A post-hoc analysis of prospectively collected data was performed in 440 patients between January 2016 and December 2020. All patients underwent RA-MIDCAB with the left internal thoracic artery to LAD. Additionally, a certain proportion of patients underwent percutaneous coronary intervention (PCI) of non-LAD vessels, i.e. HCR. The primary outcome was all-cause mortality at mid-term follow-up, and cause of death was specified. At 30-day follow-up the following secondary outcomes were included: mortality, ischemic cerebrovascular accident (iCVA), perioperative myocardial infarction, target vessel repeat revascularization (TVR), and reoperation. TVR was also collected at mid-term follow-up.

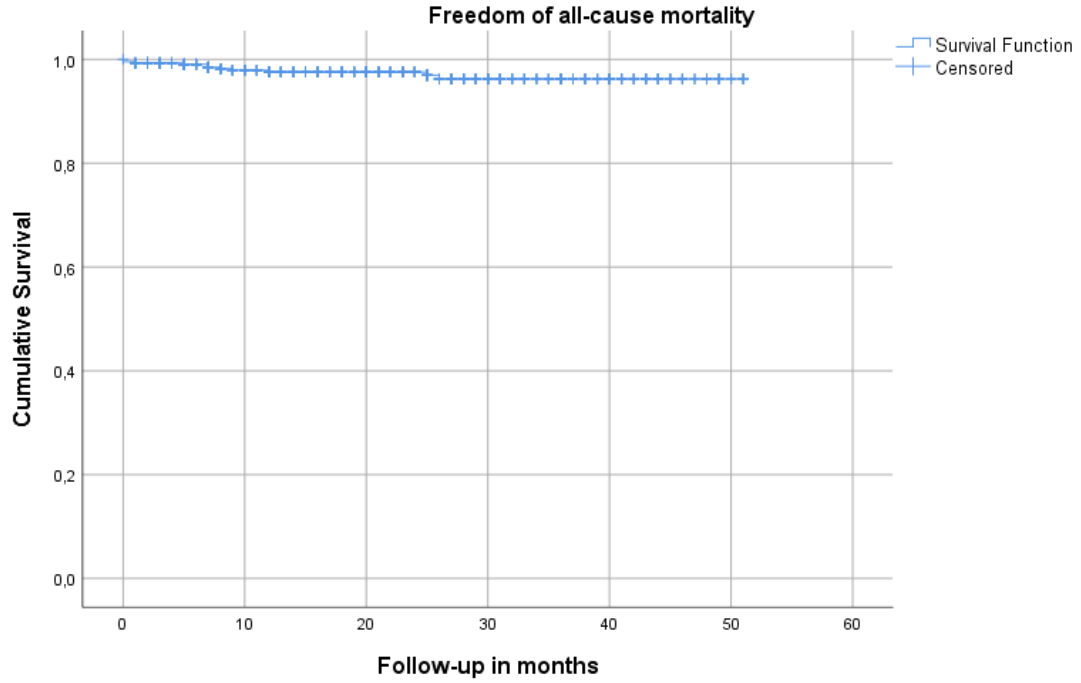
Results

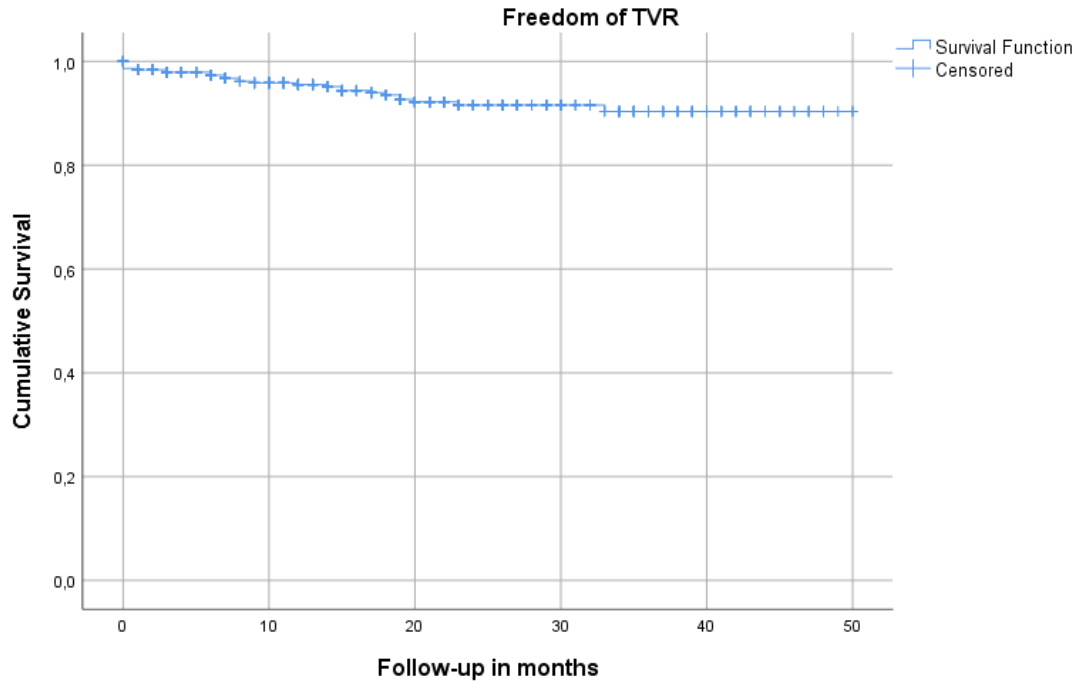
Among all RA-MIDCAB patients, 91/440 (20.7%) underwent HCR. At median follow-up of 19 (IQR 8-28) months, 11/440 (2.5%) had died. TVR occurred in 27/440 (6.1%) of which five patients underwent CABG and 22 underwent PCI. At 30-day follow-up, 8/440 (1.8%) had a perioperative myocardial infarction of whom one patient died. One patient (0.2%) developed an iCVA and 19/440 (4.3%) underwent reoperation.

Conclusion

RA-MIDCAB and HCR in the Netherlands are safe and promising. It provides a minimally invasive approach and results in excellent clinical outcomes.

Figure 1. Kaplan-Meier of freedom of all-cause mortality and freedom of TVR





Abstract

10.30 uur

MODIFIED SIZING TECHNIQUE IMPROVES POSTOPERATIVE PACEMAKER RATE IN THE PERCEVAL SUTURELESS VALVE PROSTHESIS

N.M.A.J. Timmermans, K.Y. Lam, M.A. Soliman-Hamad, A.H.M. van Straten
Catharina Ziekenhuis, Eindhoven

Purpose
Sutureless aortic valve prostheses are associated with a higher postoperative permanent pacemaker incidence. The aim of our study was to evaluate whether surgical modification affects postoperative conduction disorders and the rate of pacemaker implantation after Perceval sutureless valve implantation.

Methods
Patients undergoing Perceval sutureless AVR (sAVR) between September 2010 and February 2021 were analyzed. The study population was classified according to the surgical technique; before or after downsizing. All patients who received a postoperative PPM were identified along with risk factors associated with postoperative permanent pacemaker implantation.

Results
In total, 360 consecutive patients received a Perceval aortic valve. Study population were classified in two groups, before downsizing sAVR (n=151) and after downsizing sAVR (n = 209). Permanent pacemaker rate was reduced from 7.3% to 0.9% (p = 0.001). Logistic regression analysis revealed that surgical technique without downsizing [OR 8.132 (1.775-37.250), P = 0.007] is associated with a significantly higher risk of permanent pacemaker implantation.

Conclusion
Surgical modification is an independent risk factor for reducing the postoperative pacemaker implantation incidence after Perceval AVR.

Table 5. Logistic Regression Analysis of Risk Factors for Permanent Pacemaker Implantation after Perceval AVR.

		Univariate			Multivariate	
Variables	**Odds Ratio**	**95% CI**	**P-value**	**Odds Ratio**	**95% CI**	**P-value**
Age (years)	1.000	(0.974-1.027)	0.994	1.003	(0.975-1.030)	0.855
Male sex (%)	1.654	(0.500-5.474)	0.410			
BSA (m^2)	0.708	(0.035-9.730)	0.708			
Hypertension (%)	0.748	(0.240-2.331)	0.616			
Diabetes Mellitus (%)	1.081	(0.291-4.021)	0.907			
Peripheral arterial disease (%)	0.484	(0.128-1.827)	0.284			
COPD (%)	0.717	(0.153-3.350)	0.672			
Prior stroke (%)	1.880	(0.239-14.795)	0.549			
Prior cardiac surgery (%)	0.247	(0.028-2.170)	0.207			
Hemoglobin (mmol/L)	1.173	(0.669-2.055)	0.577			
Preoperative ≥ 45% LVEF (%)	0.720	(0.091-5.699)	0.756			
Percveval size S (%)	1.136	(0.143-9.036)	0.904			0.925
Percveval size M (%)	1.897	(0.413-8.725)	0.411	0.852	(0.072-10.034)	0.899
Percveval size L (%)	0.734	(0.241-2.231)	0.586	1.361	(0.154-12.025)	0.781
Percveval size XL (%)+	0.836	(0.251-2.779)	0.770	1.479	(0.155-14.159)	0.734
Balloondilatation after valve deployment	0.353	(0.077-1.618)	0.180	2.107	(0.251-17.692)	0.492
Prior surgical technique*	8.132	(1.775-37.250)	0.007	12.596	(1.540-102.57)	0.018

* Reference is surgical technique modification
+ Perceval size S is reference

Abstract

15.15 uur

ASCENDING AORTA REPLACEMENT WITH CONCOMITANT CORONARY BYPASS GRAFTING – IS THE PATENCY OF THE SAPHENOUS VENOUS GRAFTS IMPAIRED WHEN IMPLANTED IN A VASCULAR PROSTHESIS?

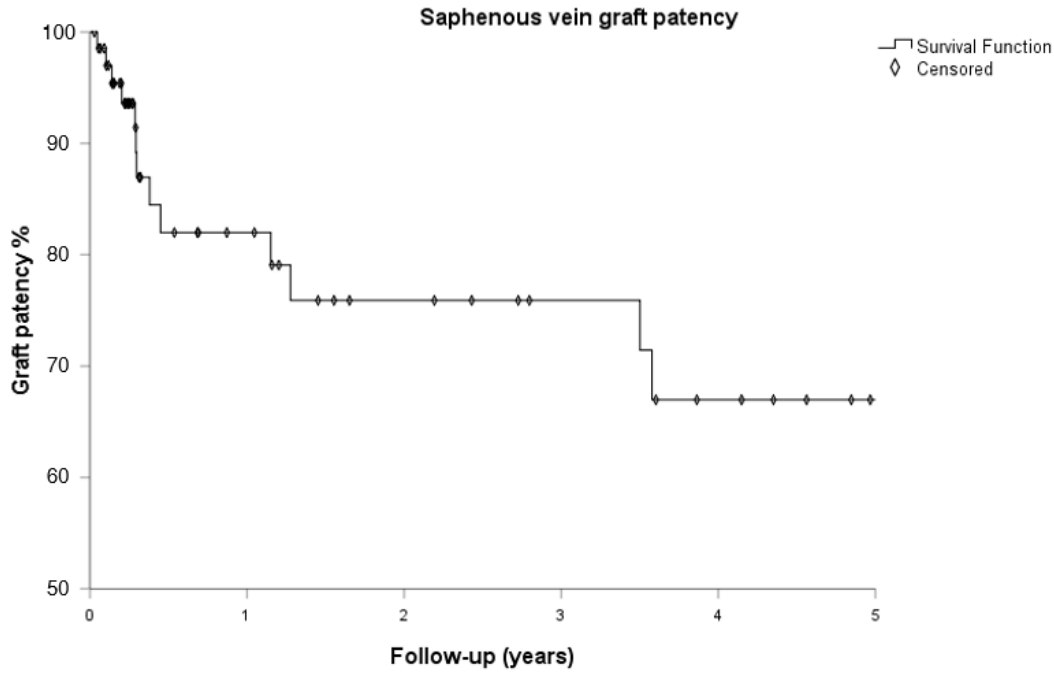
J. Jongenotter[1], T. Somers[1], J. Habets[2], M.W.A. Verkroost[1], G.S.C. Geuzebroek[1], W.W.L. Li[1], W.J. Morshuis[1], T. Smith[1]
[1]Dept. Of Cardiothoracic Surgery, Radboud University Medical Center Nijmegen, the Netherlands
[2]Dept. Of Medical Imaging, Radboud University Medical Center, Nijmegen, the Netherlands

Purpose
Despite clinical observations that saphenous vein grafts (SVGs) seem to occlude more often when the proximal anastomosis is implanted in a vascular prothesis, quantitative data is scarce and discrepant. We aimed to assess long-term patency of saphenous grafts with the proximal anastomosis in a Dacron vascular prosthesis.

Methods
Retrospective cohort study. We analyzed all patients who underwent surgical replacement of the ascending aorta in our center between 2006-2020. Patency of SVGs was assessed by reviewing routinely performed CT-scans. Kaplan-Meier survival analysis was used to assess graft occlusion rates.

Results
856 patients underwent replacement of the ascending aorta, of whom 12% (n=100) needed concomitant coronary revascularization. Of these patients, 81% (n=81) had at least one SVG; a total of 85 grafts were analyzed. The indication for coronary revascularization was atherosclerotic coronary disease in 66% (n=56) and perioperative coronary complications in 34% (n=29). Thirty-day mortality was 9.9% (n=8). A total of 69 grafts in 67 patients were subjected to analysis of patency. The first follow up scan was performed at median 43 days postoperatively (IQR 8-98 days), and SVG occlusion was detected in 15% (n=10). Last available postoperative scan was at median 382 days (IQR 87-1435 days). One, three and five year patency rates were 82%, 76% and 67% respectively.

Conclusions
Observed patency rates of SVGs implanted in a vascular prosthesis are comparable to reported outcomes after isolated coronary artery bypass surgery. Placement of SVGs in vascular prostheses seems to have no major adverse influence on graft patency.



Numbers at risk	69	29	21	17	13	8

Abstract

15.30 uur

TOTAL ARCH REPLACEMENT OR CONSERVATIVE SURGICAL TREATMENT IN THE MANAGEMENT OF ACUTE TYPE A AORTIC DISSECTION: A SINGLE-CENTER 30-YEAR EXPERIENCE

D.J. de Oliveira Marreiros[1], B. Arabkhani[1], J.L. Verhoef[1], N. Keekstra[2], J.R. van der Vorst[2], J. van Schaik[2], R.J.M. Klautz[1], J. Braun[1], R.H.H. Groenwold[3,4] and J. Hjortnaes[1]
[1]Department of Cardiothoracic Surgery, [2]Department of Vascular Surgery, [3]Department of Clinical Epidemiology, [4]Department of Biomedical Data Sciences, Leiden University Medical Center, Leiden

Purpose
With improving initial survival, surgical management of the aortic arch for acute type A aortic dissection (ATAAD) is becoming increasingly aggressive, extending the indication for total arch replacement (TAR), to improve long-term results. To evaluate whether this transition is justified, we aimed to compare clinical outcomes after TAR with conservative surgical treatment (ascending aorta±proximal arch replacement) for ATAAD.

Methods
All consecutive patients surgically treated for ATAAD at our hospital between 1992 and 2021 were included for analysis. The primary study endpoint was all-cause mortality. Secondary study endpoints were reintervention for distal aortic pathology, malperfusion syndrome and stroke.

Results
In total, 357 patients underwent surgery for ATAAD; 76 (21.3%) TAR, 281 (78.7%) conservative surgical treatment. TAR was performed more commonly in the past decade (p=0.01) and patients undergoing TAR were younger on average (58.5 vs 63.0 years, p=0.046). In-hospital mortality was higher for TAR between 1992 and 2009 (39.2% vs 20.3%, p=0.03), but became more comparable from 2010 onwards (16.7% vs 13.0%, p=0.53). Cumulative survival was similar between groups (p=0.36, **Figure 1**). The hazard of aortic reintervention was not significantly different between TAR and conservative treatment (HR 1.38, 95% CI 0.67-2.82). No differences in the incidence of in-hospital malperfusion syndrome (28.9% vs 28.2%, p=0.90) and stroke (17.1% vs 17.1%, p=1.00) were observed.

Conclusion
In recent years, TAR was performed with acceptable early mortality rates, but appears to yield similar long-term results to conservative surgical treatment in the management of ATAAD. There seems no reason to extend the indication for TAR.

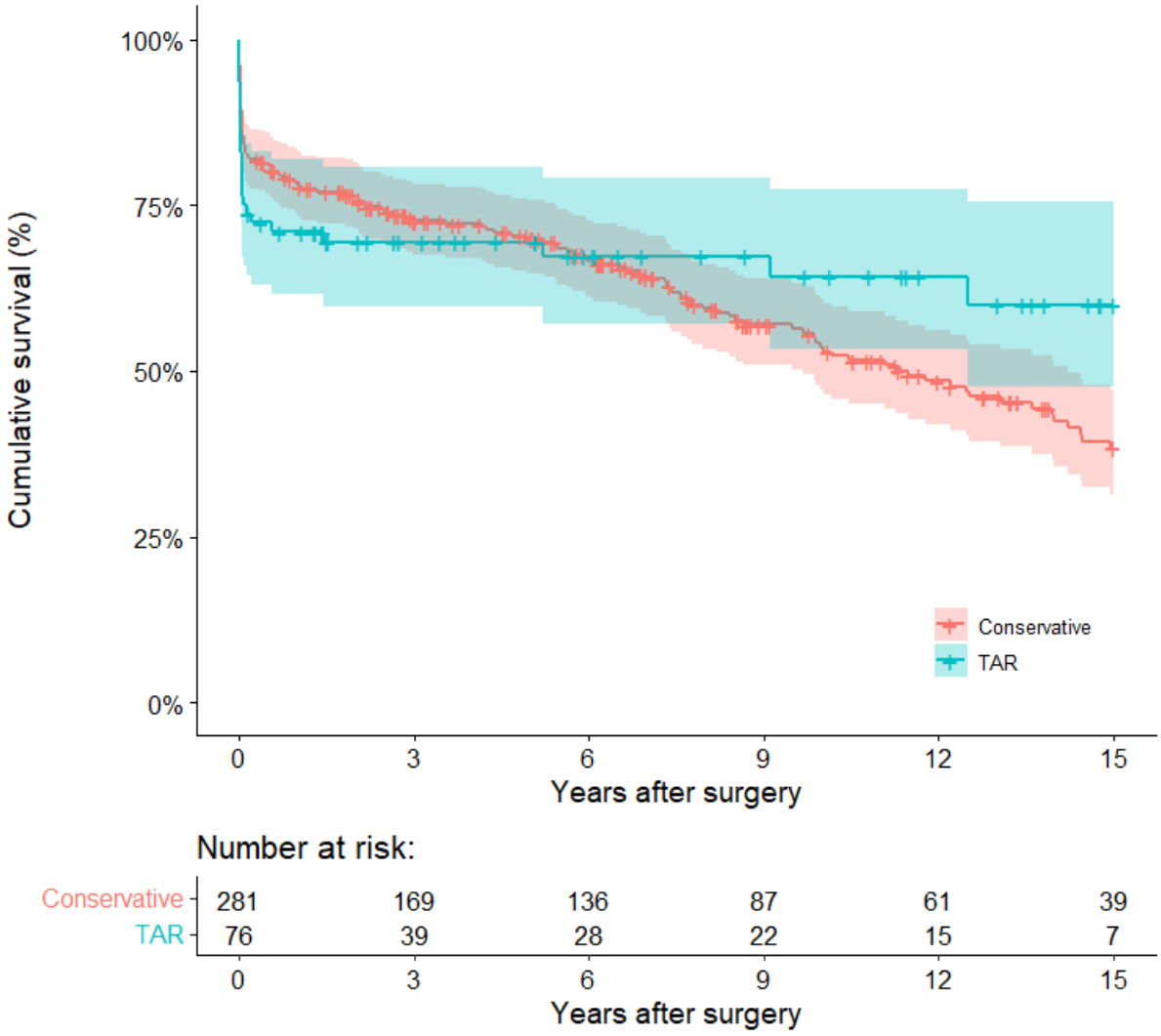


Figure 1. Cumulative survival comparing patients who underwent total aortic arch replacement with conservative surgical treatment for acute type A aortic dissection between 1992 and 2021. Continuous lines represent the cumulative survival rates, shadows the 95% confidence intervals. 5 and 10-year cumulative survival rates were 69.5% (95% CI 59.1-79.9%) and 64.3% (95% CI 52.3-76.2%) for TAR versus 69.9% (95% CI 64.4-75.4%) and 54.3% (95% CI 47.6-61.0%) for conservative surgical treatment, respectively. No statistically significant difference in survival was observed (p=0.36). After adjusting for confounders, a hazard ratio of 1.07 (95% CI 0.61-1.87) of TAR on mortality was found.

Abstract

15.45 uur

CUSTOM-MADE, SCALLOPED STENTGRAFTS IN TEVAR: SINGLE CENTER, MIDTERM OUTCOME

B.G. Sibinga Mulder[1], J.A. Vos[2], H. Smeenk[1], R.H. Heijmen[1]
[1]*Department of Cardiothoracic surgery, St. Antonius Hospital, Nieuwegein*
[2]*Department of Interventional radiology, St. Antonius Hospital, Nieuwegein*

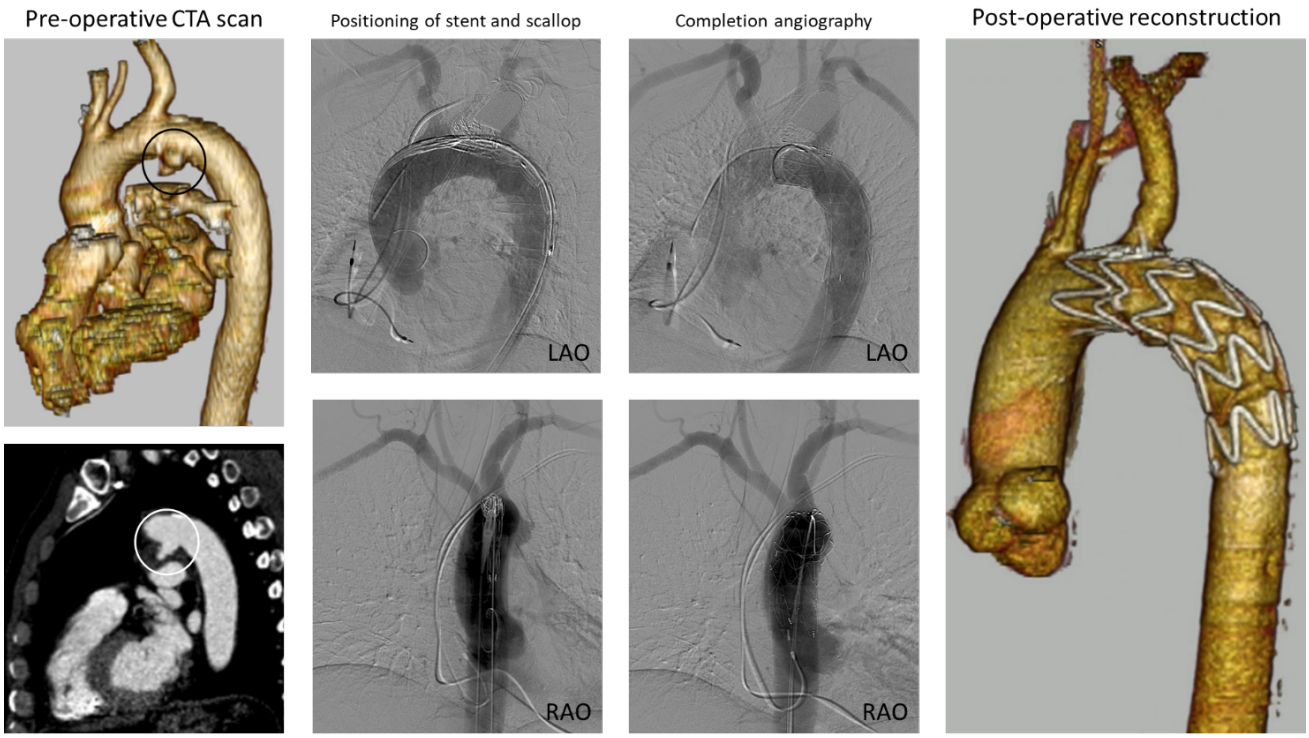
Purpose
To evaluate our midterm results of custom-made scalloped (both proximal and distal scallops) thoracic stentgraft implantation in patients with an inadequate landingzone for regular thoracic endovascular aortic aneurysm repair (TEVAR) procedures.

Methods
All scalloped TEVAR's performed after January 2014 were included. Intra-operative, short-term (at three months), and mid-term endpoints included target vessel patency, (scallop-related) endoleak and stroke.

Results
Thirty-two patients were included, of whom 23 (72%) had a proximal and nine (28%) a distal scallop. The procedure was uncomplicated in 29 (91%) patients, with patent target vessels and proper sealing at the scallop site (no endoleak). In three patients, with either a proximal scallop targeting Zone 2 (including the left common carotid artery (LCCA) or right subclavian artery (in dysphagia lusoria)) the ostium of the target vessel had to be additionally stented to correct inadvertent malposition. No strokes or mortality was seen at early follow-up. At three months, all but one (97%) target vessels were patent, without scallop-related endoleaks. During longer follow-up in 27 patients (median 42 months (range 6 – 87)) target vessels remained patent and freedom from scallop-related endoleak rate was 93%. In total nine patients died, eight aorta-unrelated deaths and one death due to prosthesis infection.

Conclusion
In selected patients with an inadequate proximal or distal landingzone for TEVAR, a scalloped stentgraft is a feasible and durable option to lengthen the landingzone without obstructing a target vessel. Best results are obtained when targeting only the LSA proximally or celiac trunk distally.

Figure: proximal scalloped TEVAR



Abstract

16.00 uur

DIRECT AORTIC CANNULATION AS SAVE ALTERNATIVE TO FEMORAL ARTERY CANNULATION – 16 YEARS OF TYPE A DISSECTION SURGERY EXPERIENCE

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Purpose
Optimal cannulation strategy for acute type A aortic dissection (ATAAD) surgery remains debated. Recent guidelines have advocated antegrade systemic perfusion through right axillary artery (RAX) cannulation to decrease the risk of stroke and mortality, instead of femoral artery (FA) cannulation. However, not all surgeons are familiar with RAX cannulation, which can be time-consuming and technically challenging. Direct cannulation of the ascending aorta is however quickly accessible and also guarantees antegrade flow. In this regard, we assessed whether direct (ascending) aortic (DA) cannulation is safe and feasible.

Methods
Records of all patients undergoing ATAAD surgery between 2006-2021 at the Radboud University Hospital were retrospectively reviewed.

Results
In total, 241 patients underwent surgery for ATAAD during the investigated period. Five patients were excluded due to death before extracorporeal circulation initiation. Of the remaining 236 patients, 50% (N=118) received FA and 50% (N=118) DA cannulation. For the total group, combined in-hospital and 30-day mortality was 10.2% (8.5% DA group vs 11.9% FA group, p=0.389). Permanent neurological damage, not present prior to surgery, was seen in 10,8% vs 8,0% (p=0.478) after DA and FA cannulation respectively. In multivariate analysis, cannulation strategy was not significantly associated with permanent neurological damage postoperatively.
Median follow-up was 4.8 years (range 2 months – 15 years). DA cannulation was not independently associated with long-term survival, reoperation risks nor postdissection dilatation.

Conclusion
DA cannulation offers a safe alternative to FA cannulation in ATAAD surgery. There were no significant differences in mortality, neurological complications as well as reoperations and postdissection dilatation.

Abstract

16.15 uur

AORTIC VALVE VISUALIZATION AND PRESSURIZATION DEVICE:
A NOVEL DEVICE FOR INTRAOPERATIVE EVALUATION OF AORTIC VALVE REPAIR PROCEDURES

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Purpose
Aortic valve repair procedures are technically challenging, especially without tools available for intraoperative evaluation. We have developed a novel intraoperative Aortic valve Visualization and Pressurization (AVP) device, enabling valve inspection under physiological conditions and measuring aortic valve-insufficiency (AI).

Methods
The AVP device is attached to the (neo)aorta, after valve-repair, while the heart is still arrested. Then, the root is pressurized (80mmHg) using a saline solution and an endoscope is introduced through the device. The valve is inspected, and the amount of valvular leakage is measured. Postoperative transesophageal echocardiogram measures the correlation of leakage measured through the device and "gold-standard" echocardiography.

Results
In 12 consecutive patients undergoing aortic valve-repair, the valve was pressurized and visually inspected. In 10 patients the postoperative AI was < grade 1. The median leakage measured was 60ml/min, IQR 45 – 95 ml/min (mean 77ml/min; range 25 – 180 ml/min). In one patient, with complex anatomy, the valve was replaced directly after evaluation with the device because of undesirable result visually and a leakage of 330ml/min. In another patient a leakage of 260ml/min was measured with minimal leaflet prolapse on visual inspection and postoperative AI was grade 2. The aortic valve was replaced.

Conclusion
This novel Aortic valve Visualization and Pressurization device enables intraoperative evaluation of the valve in physiological conditions, while still on arrested heart, and allows targeted adjustments on the valve. The AVP device will be an important aid for intraoperative evaluation of the aortic valve, during valve-repair procedures, and makes valve sparing procedures more accessible.

Attachment: video displaying clinical use of the AVP device