Valve in valve/valve in ring implantácia katétrovej protézy do mitrálnej pozície (TMVI)

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Katetrizačná implantácia do mitrálnej pozície

- REDO náhrada mitrálnej chlopne je spojená s nutnosťou resternotomie a vysokým operačným rizikom, hlavne u pc starších a polymorbidných
- Výkon stále nie je štandardizovaný, ale akceptovaný
- Prezentujeme naše skúsenosti s implantáciou balón expandibilných chlopní do mitrálnej pozície

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5-Yea
Trend

Pushing the limits—further evolutions of transcatheter valve procedures in the mitral position, including valve-in-valve, valve-in-ring, and valve-in-native-ring

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Objective: Transcatheter heart valve (THV) procedures are constantly evolving. We report our experience with valve-in-valve, valve-in-ring, and direct-view valve-in-native-ring implantation in the mitral position.

Methods: Fourteen patients undergoing THV implantation in the mitral position were included. Clinical and postoperative data, including echocardiography and further follow-up, were analyzed.

Results: Ten valve-in-valve and 2 valve-in-ring procedures were successfully performed using the transapical access route. For the third valve-in-ring procedure we used an antegrade left-atrial access via right anterolateral minithoracotomy. In 1 patient surgical mitral valve replacement was planned. Intraoperatively, the annulus appeared severely calcified and regular implantation of a bioprosthesis was not possible. As a last resort, a 29-mm Sapien XT valve (Edwards Lifesciences Inc, Irvine, Calif) was implanted under direct view. The initial result was satisfactory, but on the first postoperative day relevant paravalvular regurgitation occurred. Subsequently, the valve was fixed to an atrial cuff by 1 running suture. In this series 27-, 29-, and 31-mm bioprostheses and 28- and 30-mm annuloplasty rings were treated with 26- or 29-mm Sapien XT valves. Postoperative echocardiography on day 10 and after 6 weeks revealed good prosthesis function in all cases. In 2 valve-in-valve patients who solely received anticoagulation therapy with acetylsalicylic acid, signs of beginning valve thrombosis occurred after 8 weeks and 3 months, respectively. During further course, valve function was normalized using warfarin therapy.

Conclusions: Our results demonstrate feasibility of valve-in-valve and valve-in-ring THV procedures in the mitral position. Permanent anticoagulation therapy with warfarin seems to be necessary to prevent valve dysfunction. THV implantation in a calcified native mitral ring for bailout seems not to be reproducible and thus cannot be recommended. (J Thorac Cardiovasc Surg 2014;147:210-9)

-valve implan-

anscatheter
th mitral valve

ansapical mi-
s in 6 (26.1%),

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in all patients
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lization. Mitral
llowing the
n all cases af-
0-day follow-
0.4%. One
r the trans-
good pros-

plantation can be considered as a complementary approach to reoperative mitral valve surgery in select patients. (J Am Coll Cardiol Intv 2012;5:341–9) © 2012 by the American College of Cardiology Foundation

Conc

mitral prosthesis can be
al and hemodynamic
outcomes. (J Am Coll Cardiol 2013;61:1759–66) © 2013 by the American College of Cardiology Foundation

Transcatheter Mitral Valve-in-Valve Implantation in Patients With Degenerated Bioprostheses

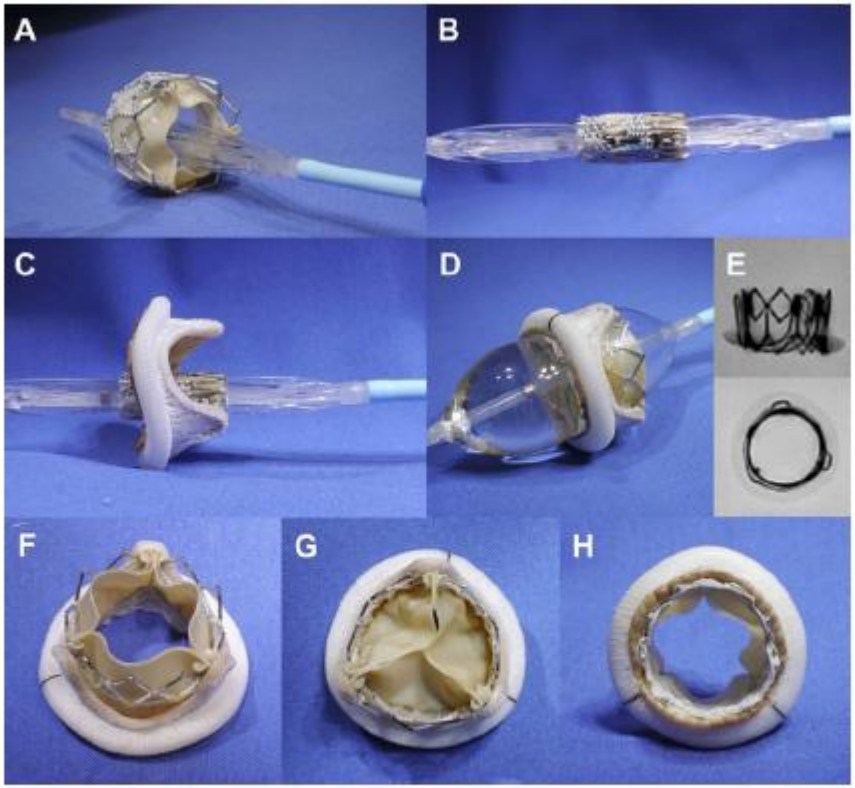


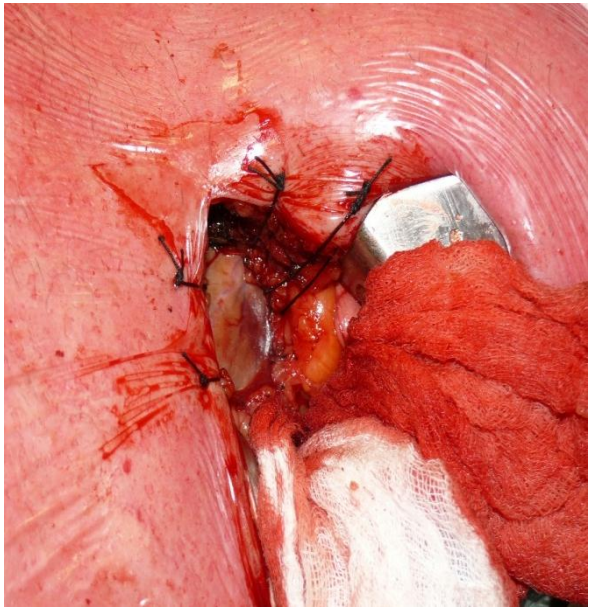
Figure 1. Ex Vivo Crimping and Mitral Valve-in-Valve Implantation

For transapical mitral valve-in-valve implantation, the 26-mm Sapien XT valve (Edwards Lifesciences, Irvine, California) is crimped onto the delivery system in a reverse fashion when compared with transapical aortic valve implantation **(A and B)**. The THV is positioned within the 27-mm Carpentier Edwards porcine (Edwards Lifesciences) mitral prosthesis and deployed to slightly overlap the sewing ring toward the left atrium for sufficient anchoring **(C and D)**. Fluoroscopy demonstrates circular stent expansion and adequate approximation **(E)**. Final results confirm appropriate geometry after mitral valve-in-valve implantation **(F to H)**.

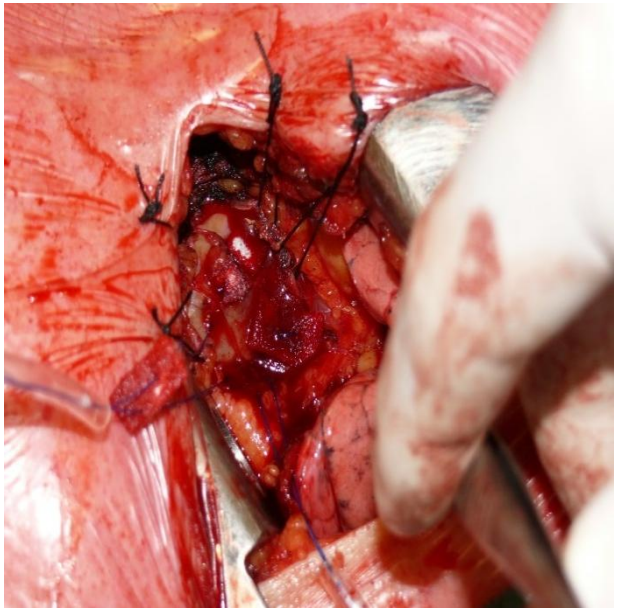
Príprava srdcového hrotu

Incízia kože, lokalizacia dľa TTE

Otvorenie a vyšitie perikardu



Stehy s podložkou



Valve in valve, No 11 pacientov

11 pc	median
Vek	74
Ženy	9
Čas od PRIMO	2560 dní (7.1 r)

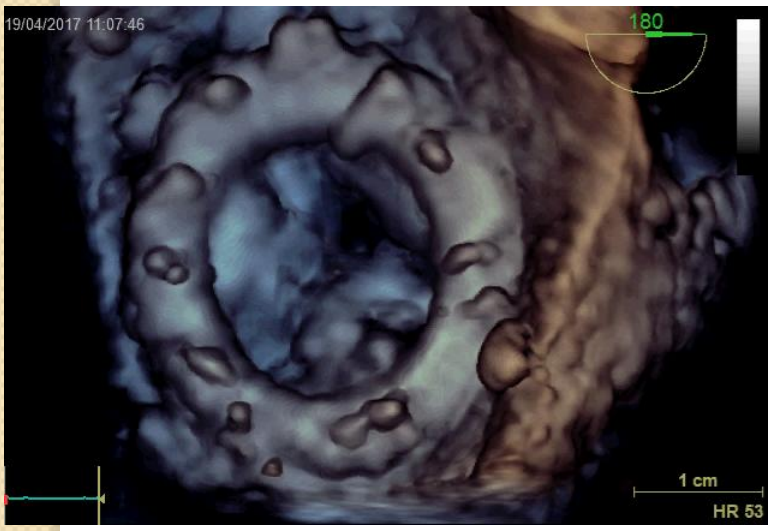
Sapien XT - 7 pc
Sapien 3 - 4 pc

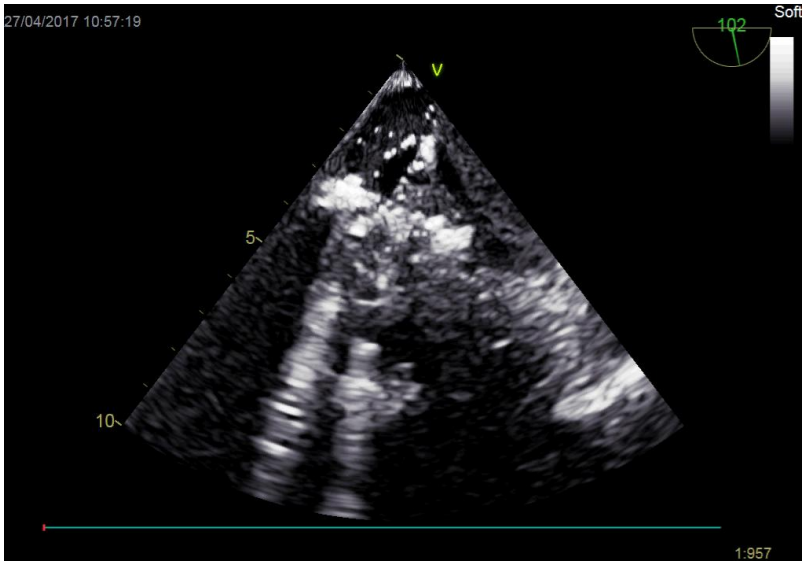
Sapien 26 mm – 4x
Sapien 29 mm – 7x

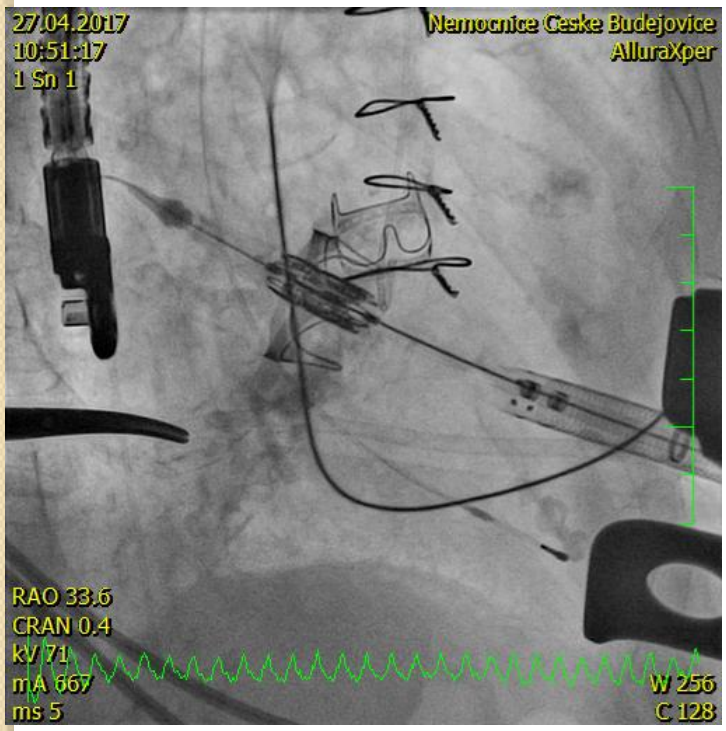
11 pc	median
GRF	49.9 ± 17.3
Nt pro BNP	2384
MiR	3
AVAi	0.5
MG	11
EF	67
Log Euroscore	26.6

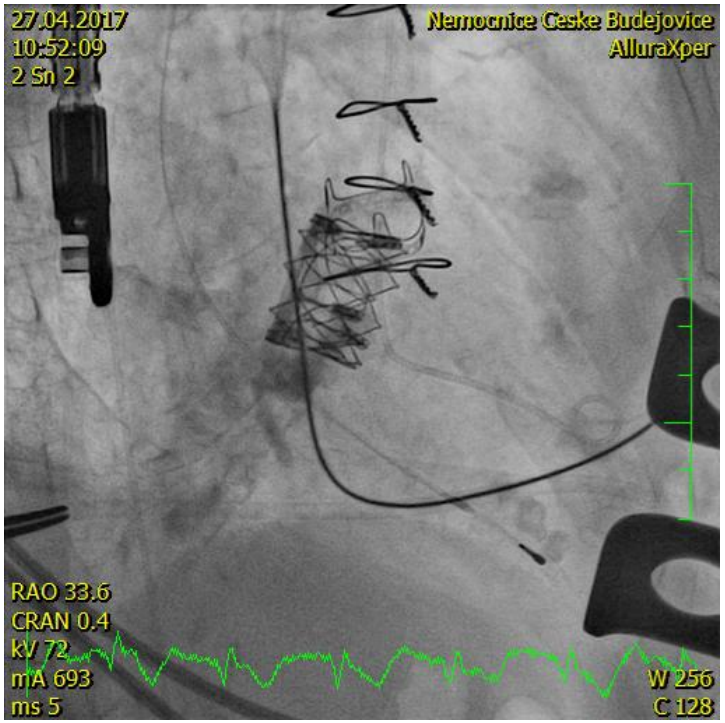
Valve in valve, hospitalizačné výsledky, No 11 pacientov

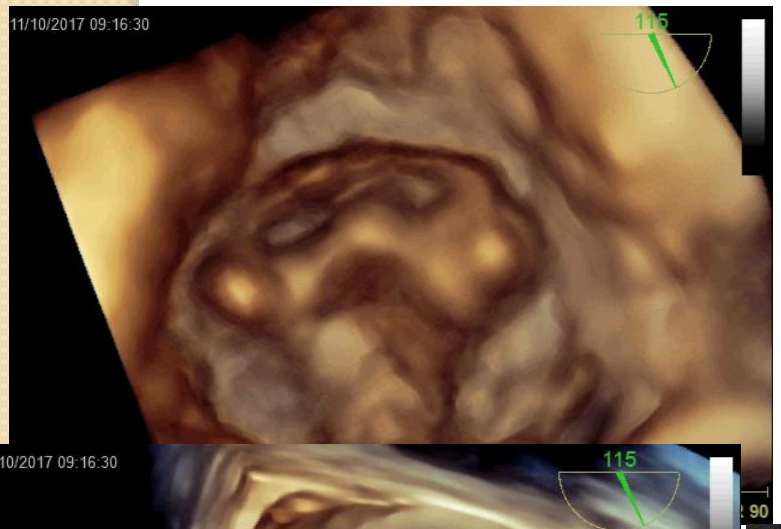
Mortalita (23 d, 1076 d)	**1 (1)**
Revízia pre krvácanie	**1**
TIA/CMP (full recovery)	**1**
Hospitalizácia (dni)	**Ø 14 (5-40)**
PG/MG (torr) - TTE	**9/4,4**
Paravalvulárna Insuf ≥ 2	**1**


19/04/2017 11:07:46
180
1 cm
HR 53


27/04/2017 10:57:19
102
Soft
V
5
10
1:957


27.04.2017
10:51:17
1 Sn 1
Nemocnice Ceske Budejovice
AlluraXper
RAO 33.6
CRAN 0.4
kV 71
mA 667
ms 5
W 256
C 128


27.04.2017
10:52:09
2 Sn 2
Nemocnice Ceske Budejovice
AlluraXper
RAO 33.6
CRAN 0.4
kV 72
mA 693
ms 5
W 256
C 128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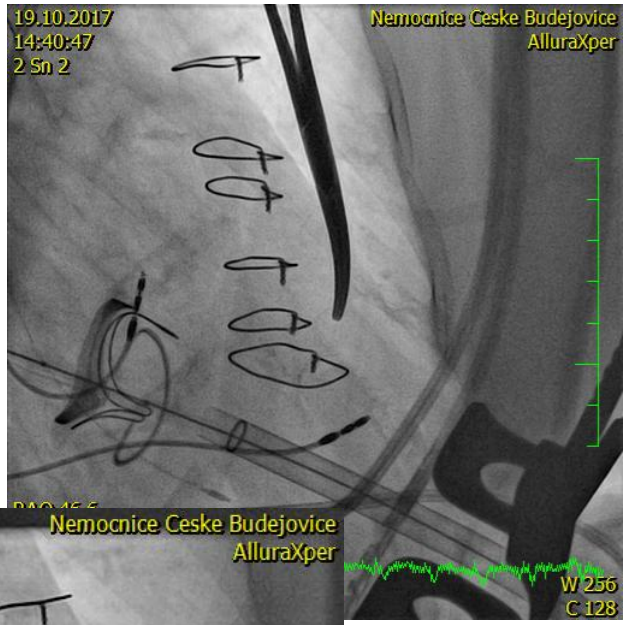
115


19.10.2017
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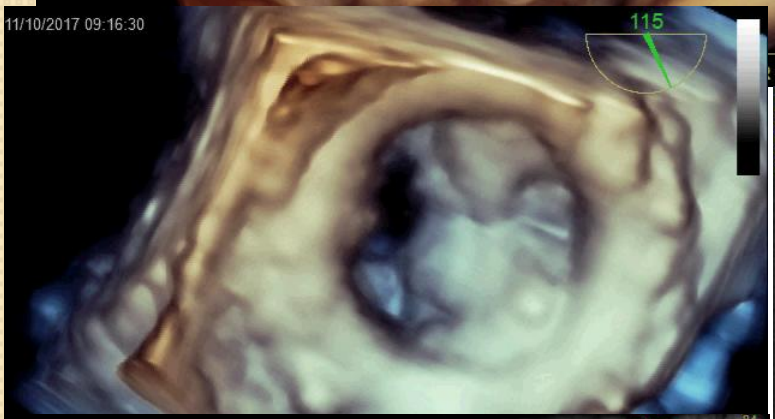
2 Sn 2
Nemocnice Ceske Budejovice
AlluraXper
W 256
C 128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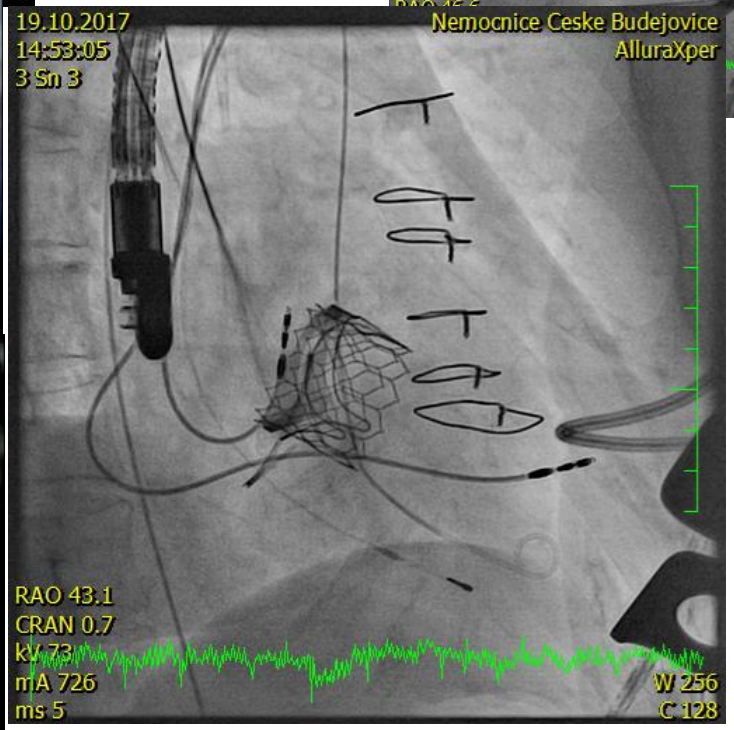
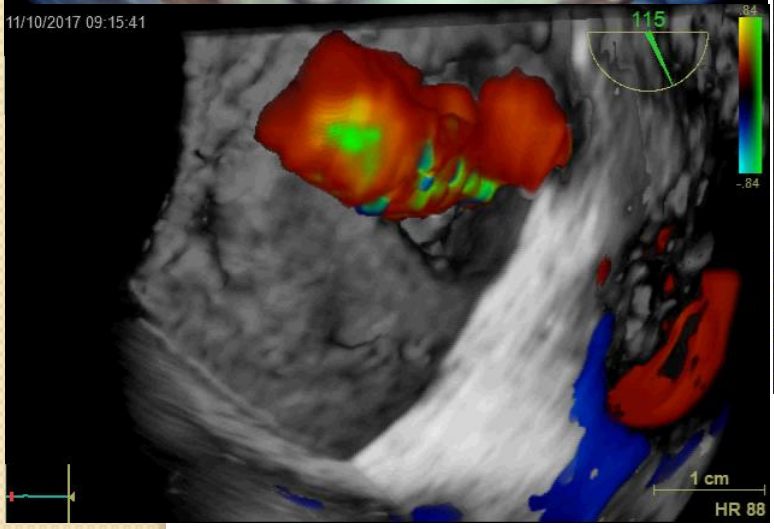

19.10.2017
14:53:05
3 Sn 3
Nemocnice Ceske Budejovice
AlluraXper
RAO 43.1
CRAN 0.7
kV 73
mA 726
ms 5
W 256
C 128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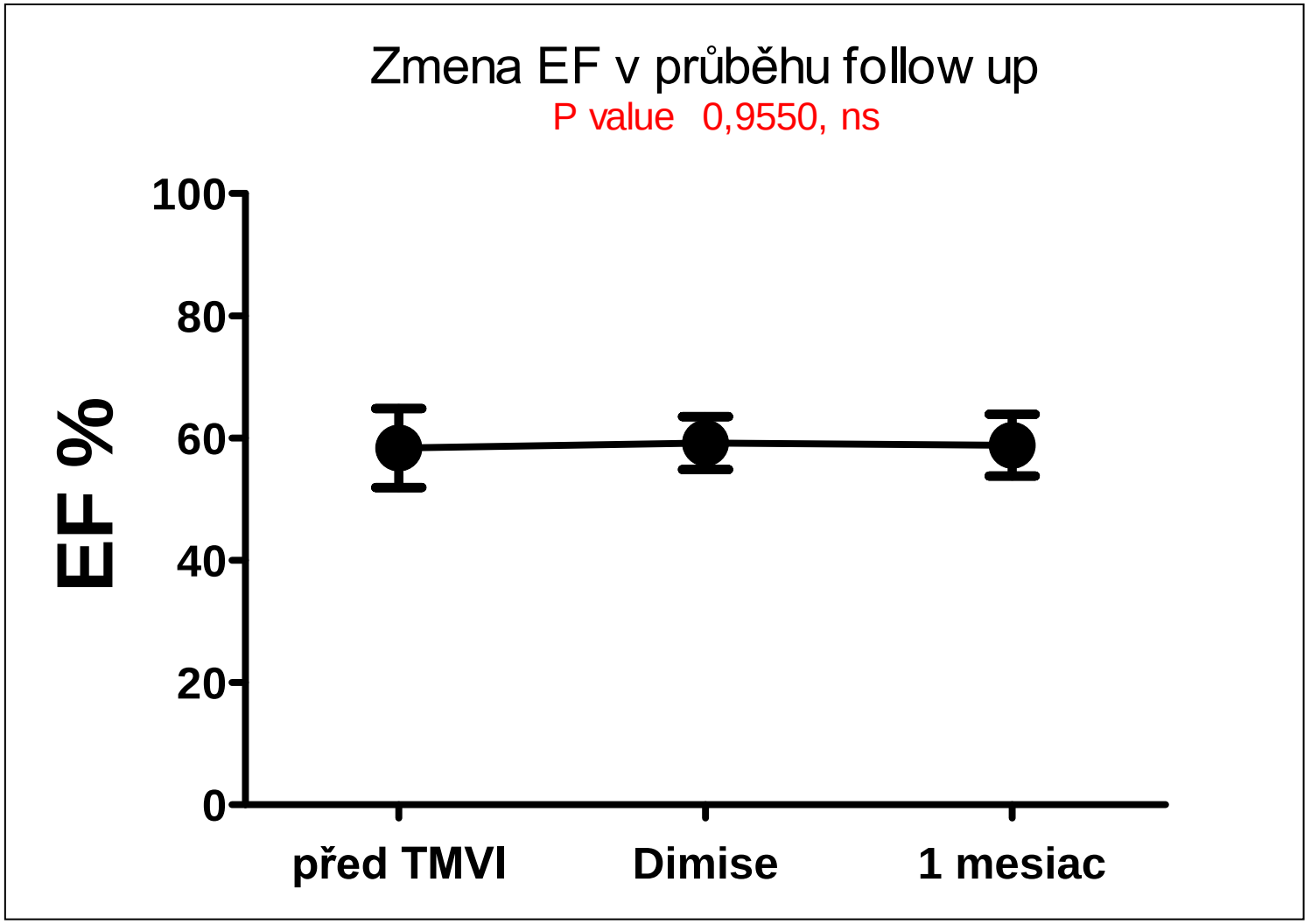
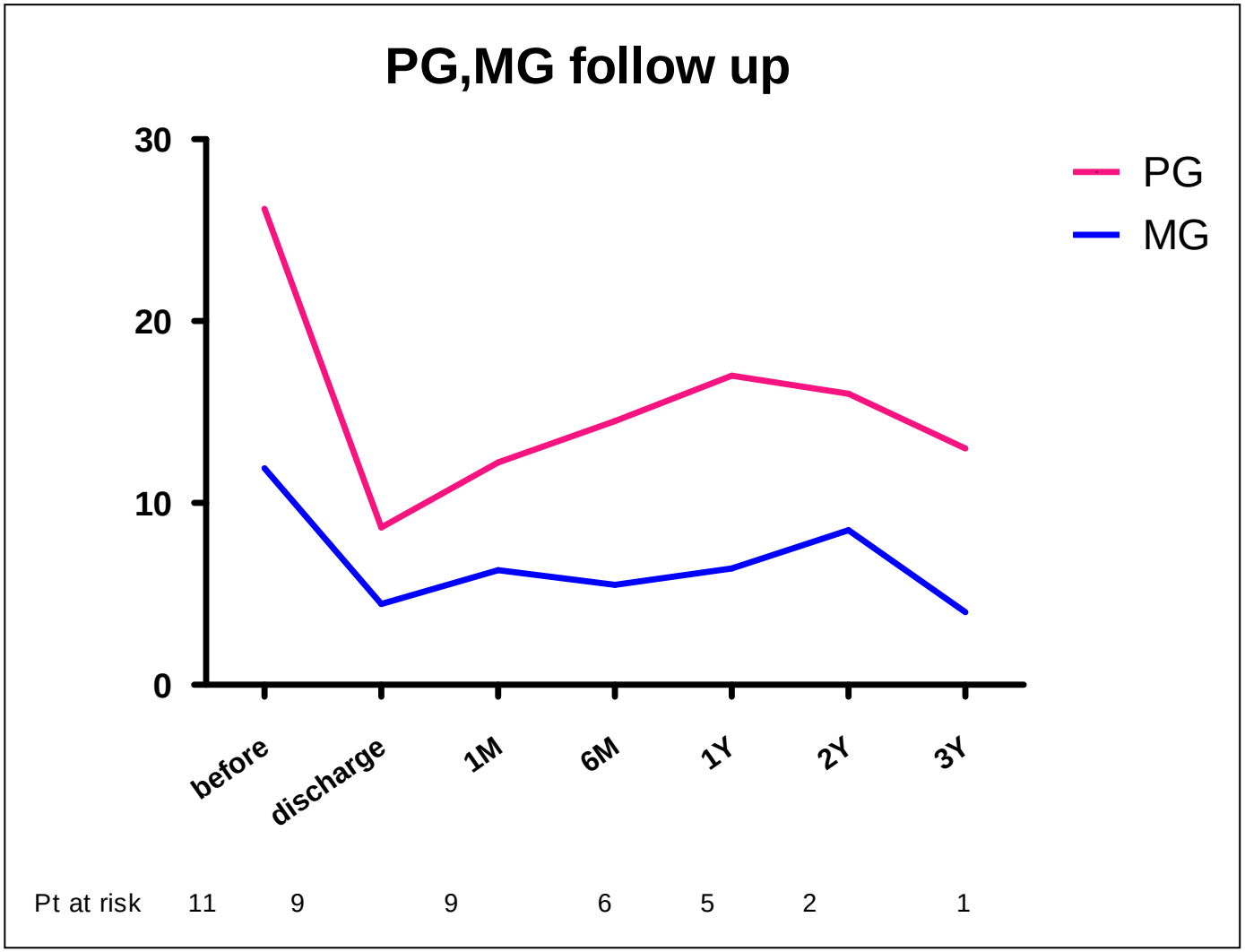
115
1 cm
HR 88

Zmena EF v priebehu follow up



Zmena PG,MG v priebehu follow up



Transcatheter valve-in-ring implantation after failure of surgical mitral repair

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Abstract

OBJECTIVES: Redo surgery after failed mitral valve repair may be high risk, or contraindicated in patients with comorbidities. Because of this high risk, other interventional possibilities like transcatheter valve implantation might be of benefit. We report our experience with transcatheter mitral valve-in-ring implantation (TVIR) in high-risk patients after failure of surgical ring annuloplasty.

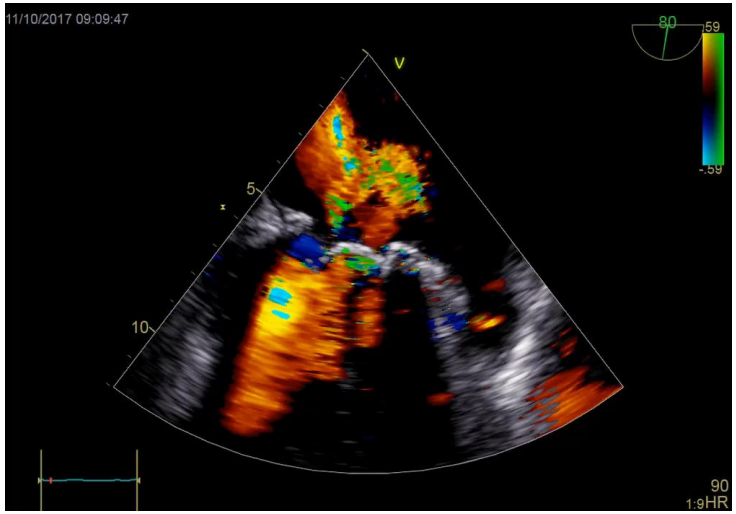
METHODS: From January 2010 to February 2012, following a multidisciplinary discussion, 17 high-risk patients underwent TVIR using Edwards SAPIEN XT prostheses, via either a transvenous transseptal ($n = 8$), or a transapical approach ($n = 9$).

RESULTS: Patients were aged 70 ± 16 years, in New York Association classes III/IV. Their mean logistic EuroSCORE was 36 ± 17% and mean Society of Thoracic Surgeons risk score 13 ± 9%. The mean time interval between surgery and repair failure was 7 ± 3 years. Annuloplasty rings were semi-rigid in 14 cases, flexible in 2, and rigid in 1. Manufacturers ring diameters were 26 mm in 4 patients, 27 mm in 1, 28 mm in 9, 30 mm, 31 mm and 34 mm in 1. The predominant failure mode was regurgitation in 12 cases and stenosis in 5. SAPIEN XT diameters were 26 mm in 15 patients, 23 mm and 29 mm in 1. Procedural success rate was 88% (15/17). Emergency surgery was needed in 1 patient due to acute dislodgement of the ring. The degree of mitral regurgitation was reduced to none or mild in all but 2 patients; final mean gradient was 7 ± 3 mmHg. Thirty-day survival was 82% (14/17 patients). At last follow-up (13 ± 5 months), survival rate was 71% (12/17).

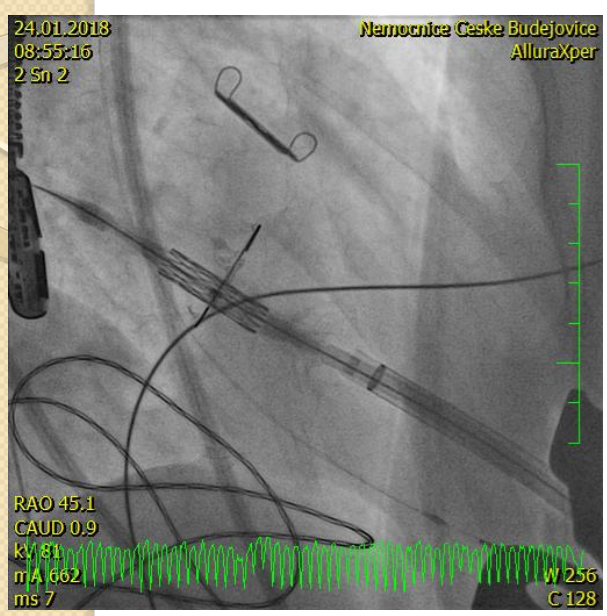
CONCLUSIONS: These preliminary results suggest that TVIR is feasible, with low operative risk, and may provide short-term clinical and haemodynamic improvement in selected high-risk patients with failure of mitral ring annuloplasty.

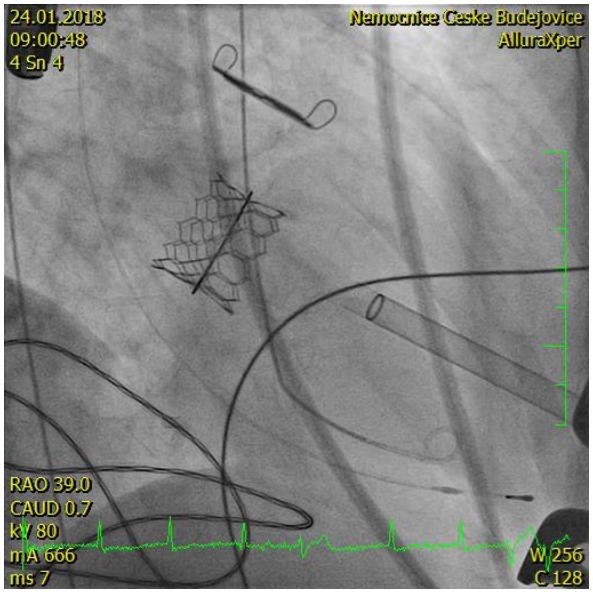
Valve in ring 24.1.2018

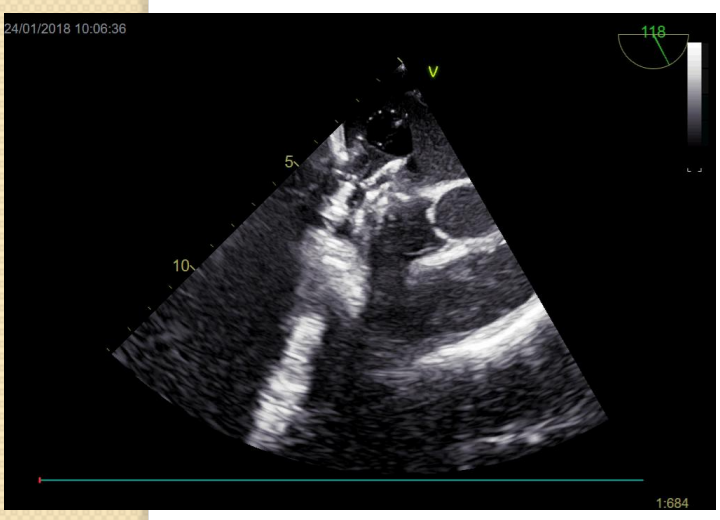
- Žena, 68 rokov
- Stp MVP 27.8.2014
  (Medtronic Future 30 mm)
- MiR III.st
- PG/MG 20/7 mmHg
- AVAi 0.51 cm^2/m^2
- EF 58%, log EuroScore 17.55



Valve in ring







Take home message

- katerizačná implantácia balón expandabil. chlopne do degenerovanej mitrálnej bioprotézy či ringu je technicky možná s velmi dobrými krátkodobými výsledkami

- Nezaznamenali sme migráciu, dislokáciu alebo iný technický problém

- Trained team - viac ako 150 TA-TAVI- bezpečný - krátka manipulačná vzdialenosť, veľká skúsenosť teamu

Take home message

- Výber veľkosti chlopne na základe kalkulátora s prihliadnutím na pre a periprocedurálne meranie pomocou TTE/TEE
- Bez štandardnej predilatácie
- **Pozícia 80% komora, 20% predsieň (nižšie riziko PVR a snáď i trombózy? – antikoagulačná liečba)**

Záver

- TMVI rozširuje spektrum možností REDO intervencii v selektívnej skupine rizikových pc s dysfunkčnou bioprotézou či ringom v mitrálnej pozícii

Ďakujem za pozornosť