中文題目：右心功能對退化性二尖瓣膜逆流患者接受二尖瓣手術後之影響

英文題目：The impact of mitral valve surgery on right ventricular performance in patients with degenerative mitral regurgitation

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Background: Right ventricular (RV) impairment is not only common but a predictor of cardiovascular outcomes in patients with degenerative mitral regurgitation (MR). Nevertheless, the time course of RV functional changes post mitral valve (MV) surgery remains largely unknown. Herein, using RV focused echocardiography, we aimed to investigate the RV recovery and its impact on cardiovascular events after mitral valve surgery.

Methods: We prospectively enrolled 69 patients who prepared for surgeries for degenerative MR. The echocardiography including speckle tracking imaging were performed prior to, post one month and post six months of MV surgeries. Also, mortality and major adverse cardiovascular events (MACE) including myocardial infarction, heart failure requiring admission were recorded.

Results: In addition to the improvements of MV regurgitation volume and left atrial function, our findings also indicated significant reductions of left ventricular volume and mass index post MV surgeries. Despite the similar left ventricular (LV) ejection fraction, there was a transient decline of LV longitudinal strain at one month and recovered post six months of MV surgeries. Regarding RV, different from traditional RV parameters including RV S', fractional are change (FAC) and tricuspid annular plane systolic excursion (TAPSE) which improved at six months post surgeries, RV strains at one month predicted the subsequent myocardial recovery. Notably, patients with impaired RV strains at the early stage had worse cardiovascular outcomes compared with those with preserved RV strains.

Conclusion: The early changes of RV strains can predict the subsequent changes of RV function and the cardiovascular outcomes in patients with degenerative MR and received MV surgeries.

Key words: Degenerative MR, MV surgery, RV strain, MACE

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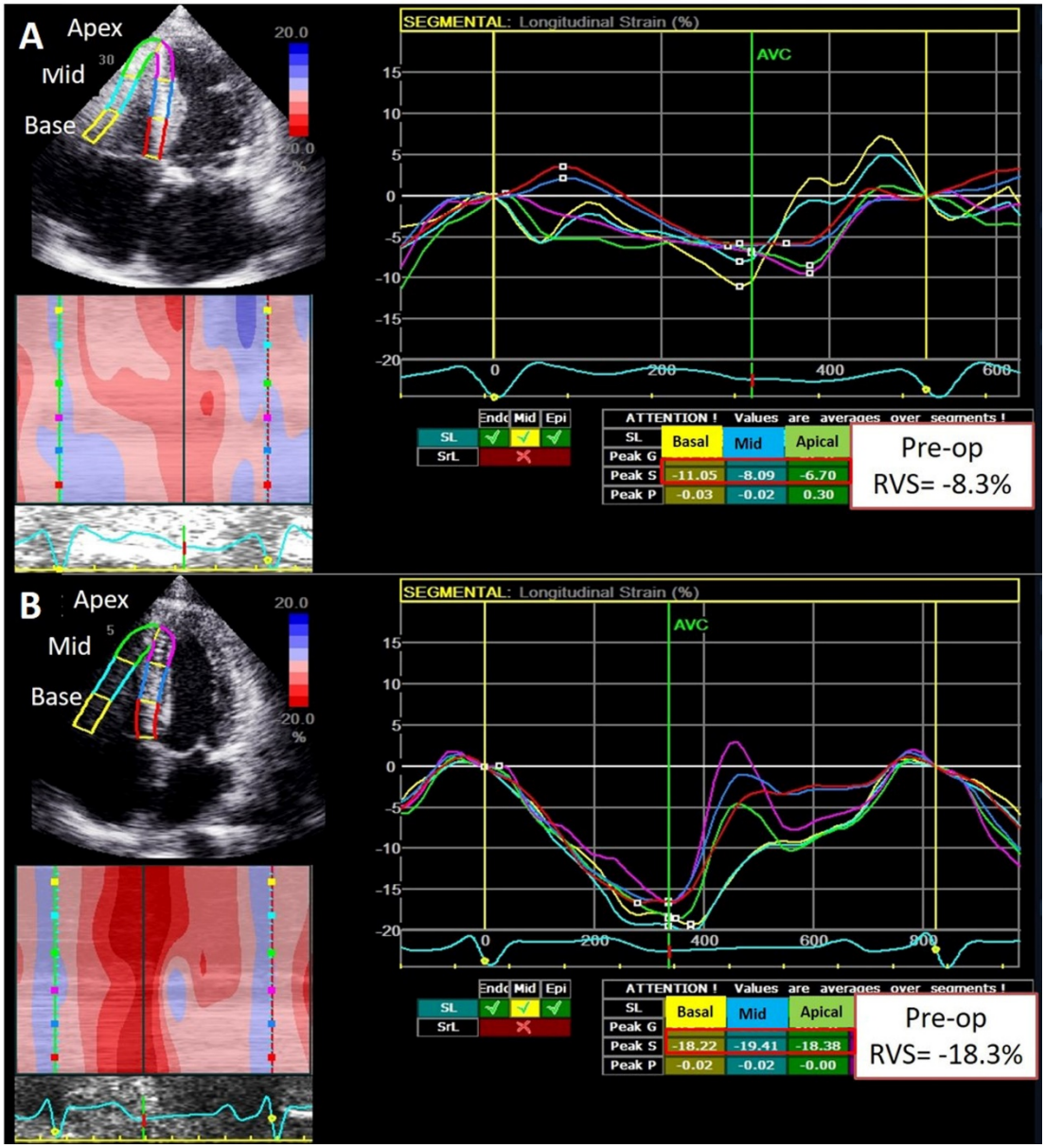
A
Apex
Mid
Base
20.0
-20.0
%
SEGMENTAL: Longitudinal Strain (%)
AVC
15
10
5
0
-5
-10
-15
-20
0
200
400
600
Endo
Mid
Epi
SL
SrL
ATTENTION ! Values are averages over segments !
SL
Basal
Mid
Apical
Peak G
Peak S
-11.05
-8.09
-6.70
Peak P
-0.03
-0.02
0.30
Pre-op
RVS= -8.3%
B
Apex
Mid
Base
20.0
-20.0
%
SEGMENTAL: Longitudinal Strain (%)
AVC
15
10
5
0
-5
-10
-15
-20
0
200
400
600
800
Endo
Mid
Epi
SL
SrL
ATTENTION ! Values are averages over segments !
SL
Basal
Mid
Apical
Peak G
Peak S
-18.22
-19.41
-18.38
Peak P
-0.02
-0.02
-0.00
Pre-op
RVS= -18.3%