

2D Strain Speckle Tracking Analysis in Acute Peri-myocarditis

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Background. Echocardiographic changes in acute peri-myocarditis vary from obvious regional LV dysfunction to apparently normal heart. Modified 2D strain speckle tracking method permits measurement of strain in 3 myocardial layers. We measured strain in 3 myocardial layers pre-strech, postsystolic index and torsion in the patients with acute peri-myocarditis.

Methods. 4 patients with acute peri-myocarditis and 8 normal subjects underwent echocardiographic examination. Short axis and apical views were stored and analysed with Modified 2D strain speckle tracking method capable of measurement of strain in 3 myocardial layers.

Results. Longitudinal strain in the patients with peri-myocarditis in each myocardial level was significantly lower than in control subjects. Postsystolic index in patients with peri-myocarditis was higher than in normals (Table 1). Circumferential strain (Table 2) in the patients with peri-myocarditis was also lower than in controls. Pre-strech index in the patients with peri-myocarditis was higher than in normals. Torsion in the patients with peri-myocarditis was lower than in control.

Conclusion. Longitudinal and circumferential strain in patients with peri-myocarditis is lower than in normal subjects. Torsion in peri-myocarditis is lower than in controls. Pre-strech index and postsystolic longitudinal index are higher peri-myocarditis than in normals. Further studies with larger groups of patients with and without wall motion abnormalities a required.

LONG	B A S A L				
	Endo	Mid	Epi	PSI L	prestretch
Abn	-17.9	-16.8	-16	11.8	2.33
N	-20.3	-19.6	-18.9	2	3
p	0.03	0.01	0.008	0.06	0.58
LONG	M I D V E N T R I C L E				
	Endo	Mid	Epi	PSI L	prestretch
Abn	-19.6	-17.8	-16.4	3.3	1.2
N	-23	-20.6	-18.7	0.59	0.76
p	0.005	0.007	0.02	0.017	0.69
LONG	A P E X				
	Endo	Mid	Epi	PSI L	prestretch
Abn	-24	-16.9	-12.4	13.1	2
N	-31.3	-22.6	-16.7	2.5	1.8
p	0.005	0.007	0.01	0.037	0.89

SHORT	B A S A L						
	Endo	Mid	Epi	PSI R	PSI C	PRE	
Abn	-24.9	-17.1	-11.6	10.2	5.2	5.2	
N	-30.5	-21.4	-15.3	9.9	5	4.8	
p	0.006	0.02	0.02	0.7	0.85	0.02	
SHORT	M I D V E N T R I C L e						
	Endo	Mid	Epi	PSI R	PSI C	PRE	
Abn	-28.1	-20	-13.9	6	5.8	5.9	
N	-36.2	-26.2	-18.9	6	0.04	1.23	
p	7.3X10(-5)	0.003	0.006	0.006	0.06	0.05	
SHORT	A P E X						
	Endo	Mid	Epi	PSI R	PSI C	PRE	Torsion
Abn	-28.5	-22	-17.4	22.9	2.4	3.6	4.4
N	-48.1	-36.4	-28.3	34.1	0.4	0.3	16.3
p	0.6x10(-12)	2.5x10(-15)	5.6x10(-6)	0.21	0.11	0.06	0.03