

## 11. Usefulness of Dynamic SPECT to Takotsubo Cardiomyopathy

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**【Introduction】** By Myocardial SPECT, this patient has non-viable myocardium of apex wall. The coronary arteries were normal. Takotsubo Cardiomyopathy by LVG. (Fig.1) The timing of the SPECT start was from 30min after MIBI injection. It is thought that this timing is too late. In SPECT of Takotsubo Cardiomyopathy, necessary to acquisition SPECT start immediately after MIBI injection. We tried Dynamic SPECT to Takotsubo Cardiomyopathy.



Fig.1 Myocardial SPECT after 30min with  $^{99m}\text{Tc}$ -MIBI IV and CAG and LVG

**【Result】** Takotsubo Cardiomyopathy.

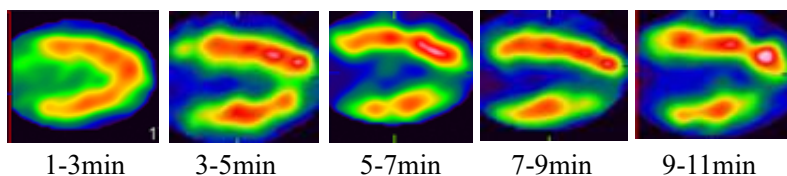


Fig.2 Dynamic SPECT with  $^{99m}\text{Tc}$ -MIBI

In Takotsubo Cardiomyopathy, MIBI enhanced washout from the early stage of injection. It is considered that the retention ability of MIBI to the mitochondria of a myocardial cell is decreasing. In this patient, MIBI washout rate of the timing of the usual SPECT is higher than normal. This patient's MIBI washout rate is 28% > normal ( $14.3 \pm 6.8\%$ ). This patient's cardiac function: Ejection Fraction=66% > 50%, Peak Ejection Rate = 3.06 > 2.9. Peak Filling Rate = 2.79 > 1.7 These are all normal. But Bandwidth is 180 > 60 (normal). (Fig.3) This phenomenon means Dyssynchrony.

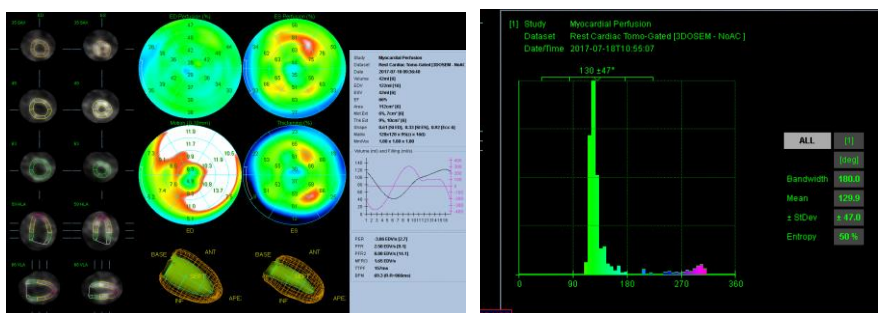


Fig.3 Cardiac Function and Bandwidth by QGS

**【Discussion】**

. By the timing of the usual SPECT start (30min after injection with  $^{99m}\text{Tc}$ -MIBI), there is a possibility of underestimating viability. In Takotsubo Cardiomyopathy, in order to evaluate viability accurately, it is necessary to start SPECT immediately from  $^{99m}\text{Tc}$ -MIBI injection.

**【Conclusion】**

In Takotsubo Cardiomyopathy, In order to evaluate accurately viability, Dynamic SPECT is useful.