

Transient Wall Motion Abnormality and Prolonged Impairment of Sympathetic Nervous System in Patients with Ampulla Cardiomyopathy; Assessment of Myocardial Perfusion Using Myocardial Contrast Echo and Cardiac Nuclear Imaging

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Background. So-called stress induced cardiomyopathy which resulted in focal myocardial stunning have been reported. The etiology of stress induced cardiomyopathy, that is ampulla cardiomyopathy (AC) has not been fully investigated. The clinical features of AC are as follows, 1) most patients (pts) are elderly women, 2) characterized by a reversible, regional ampulla-shaped asynergy, mostly akinesis, in the apical lesion of the LV with transient ST-T change, 3) wall motion abnormality improves rapidly within a few weeks, 4) minimal increase in cardiac enzyme, 5) without significant coronary artery stenosis.

The aim of this study was to investigate intramyocardial perfusion using myocardial contrast echocardiography (MCE) and ²⁰¹thallium single-photon emission computed tomography (SPECT) and sympathetic nervous system using ¹²³I-meta-iodobenzylguanidine scintigraphy (MIBG) in pts with AC.

Methods. We investigated ten pts (70 +/- 10 y.o, 9 females and 1 male) who experienced chest oppression following severe mental stress with ST-T change. All pts showed ampulla-like asynergy in the apical lesion of the LV by either echocardiogram and/or left ventriculogram. Coronary angiogram revealed neither significant coronary stenosis nor vasospasm in the epicardial coronary artery. The SPECT in 6 pts, the MIBG in 5 pts were performed both in acute (mean 4.7, 5.0 days) and late stage (mean 63.5, 40.6 days) . Intracoronary MCE (IC-MCE) in 4 pts and intravenous MCE (IV-MCE) using Levovist in 4 pts were performed in acute (mean 2.0, 6.2 days) and late stage (mean 30.5, 29.0 days) .

Results. In acute stage, IC-MCE and SPECT showed perfusion abnormality in the apical lesion of the LV in concordance with ampulla-shaped asynergy, which remarkably improved in the late stage. IV-MCE showed fair contrast enhancement in the asynergic legion. Images of MIBG, however, revealed marked persistent defect in the apical lesion at late stage even without persistent wall motion abnormality of LV.

Conclusions. These results suggested that ampulla cardiomyopathy may have focal and disseminated myocardial damage originating mental stress resulting transient myocardial microcirculatory disturbance and persistent impairment of sympathetic nerve system.

タコ壺心筋症における一過性壁運動障害と交感神経機能障害の影響；コントラスト心エコー図法と心筋シンチによる心筋灌流の検討

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【背景】タコ壺心筋症の報告が見られるが、病態は十分検討されていない。【目的】心筋コントラストエコー図法 (MCE) と TL SPECT (SPECT) による心筋灌流と MIBG による交感神経機能評価をタコ壺症例に施行した。【方法】強い精神的ストレス後、ST-T 変化を伴う胸痛を訴えた連続 10 例で検討した。全例で心エコー図法又は左心室造影で心尖部に壁運動異常を認めた。SPECT MIBG、MCE は冠注法 (IC-MCE) ならびに静注法 (IV-MCE) を急性期と慢性期で施行した。【成績】急性期に IC-MCE と SPECT では壁運動異常に一致した心筋灌流障害を認め、慢性期に改善した。IV-MCE では軽度の心筋造影低下を心尖部に認めた。MIBG は著明な遷延性の欠損像を認め、壁運動異常が改善した慢性期も残存した。【結論】タコ壺心筋症の心筋障害は一過性の微小循環障害と遷延性の交感神経機能障害が伴うと推察された。

質疑応答

質問 1 Ampulla Cardiomyopathy の日本語の病名はなにか？

応答 いわゆるタコツボ心筋症のことで心尖部の膨瘤状の asynergy を形容する。英訳で、心尖部形状の表現として Ampulla Cardiomyopathy を用いた。Tsuchihashi らは ‘transient left ventricular apical ballooning without coronary artery stenosis’ としている。名称が形態と病因の両方からつけられており、統一にはより多くの症例検討が必要である。

質問 2 冠動脈攣縮とどのように違うのか？

応答 本研究で冠動脈造影施行例では、エルゴノビン負荷し、心外膜の冠攣縮は除外された。microspasm は病因の一部とも考えられ除外されない。検討では心筋内 microcirculation の障害も示唆される。