Abstract

A semi-automatic motion-tracking method for local myocardial tissue on M-mode echocardiograms is proposed in this paper. The proposed method is applicable to estimating myocardial performance in clinics. The M-mode echocardiogram is a type of echocardiogram used in clinics to measure diagnostic indexes. Such as the thickening and thinning of myocardial muscle layers. In order to measure such indexes, doctors are required to manually track myocardial motion. However, tracking myocardial motion by hand is a very tedious and time-consuming process. The proposed method for tracking the motion of myocardial tissue is based on Dynamic Programming (DP). A Myocardial Elastic (ME) Model is employed to reduce the accumulation of velocity error. The experiment has 3 parts: visual inspection, statistical estimation and the analysis of systematic error. The results of these three evaluations indicate
that the proposed method can provide more accurate motion tracking and can replace the manual tracking method for doctors in clinics.

References


Index Terms

Computer Science

Image Processing

Keywords

Myocardial Motion Tracking  Ultrasonic Imaging  M-mode Echocardiogram
Dynamic Programming
Elastic Model