Abstract

The main objective of this research is to classify the intracardiac masses in echocardiograms. Intracardiac masses are hazardous in cardiovascular disease. Generally, they are abnormal structures within or immediately adjacent to the heart, which must be distinguished for diagnosis. Two main types of intracardiac masses are tumor and thrombus. Identification of intracardiac masses in echocardiograms is one important task in cardiac disease diagnosis. In most hospitals, echocardiographic identifications are carried out by cardiologists manually. The diagnosis is time consuming. Recognition depends on the image quality and techniques, as well as the cardiologist's experience. To improve the diagnosis accuracy, a novel fully automatic classification method is required and to guide which case should be recommended for a surgery. The various steps involved in classifying the intracardiac masses are collecting the intracardiac videos, frame decomposition, mass area ROI detection, denoising to eliminate the speckle to have better noise attenuation and edge enhancement, segmentation of intracardiac mass, feature extraction, and finally classification of intracardiac mass . This research work aims to develop an automated, efficient system to classify the intracardiac masses with effective techniques in order to improve the diagnosis accuracy to aid the medical field.