Apically directed post-systolic motion of the non-ischemic myocardium.


Background: An apically directed post systolic motion (PSM) of the non-ischemic left ventricle (LV) was observed in elderly patients with hypertensive LV hypertrophy (LVH). It is, however, not known whether age or hypertensive LVH is a determinant of this phenomenon.

Methods: 30 patients (pts) referred for a standard echocardiogram were included: 10 pts without obvious heart disease younger than 30 years (gr 1); 10 pts without obvious heart disease older than 60 years (gr 2); 10 pts older than 60 years with hypertensive LVH (gr 3). Color-coded tissue Doppler imaging (CTDI) of the LV in the apical long axis view was obtained with a Vingmed System V at breathhold during hypotensive LVH (gr 3). Color coded and transmit complete echocardiograms, with reduction of the dimensions of a representative exam (20 3" video clips + 10 still frames) from 2,500 MB to 2.5 MB, and resultant minimum delay in exam transmission time (between acquisition + transmission and reception + playback), which was kept within 1 video clip clinical compression and acquisition times.

Conclusion: Integration of low-cost low bandwidth ISDN lines and MPEG-4 video compression technology has the potential to provide immediate feasibility of "near-realtime" tele-echocardiography for remote access, overcoming economic barriers. To this end, reliability in echocardiography of different MPEG-4 lossy compression algorithms remains to be established.

Conclusions: Two distinct apically directed PSM's are present along the longitudinal axis in the non-ischemic basal anteroseptal wall. Neither PSM I nor PSM II can be attributed to hypertensive LVH. PSM II seems to be an age-related phenomenon.