TEE ESSENTIALS

Assessment of the left ventricle: Anatomy of the left ventricle

The anatomy of the left ventricle (e.g., left ventricular size, wall thickness, morphology, and function) can be assessed using several different mid-esophageal and transgastric TEE views. However, bear in mind the following caveats:

For most TEE views, the left ventricular apex is in the far field (i.e., distant from the TEE probe). This means that image quality at the apex can be poor, and this can sometimes make it difficult to rule out apical abnormalities (e.g., apical thrombus).

When TEE is performed during anesthesia, the hemodynamic effects of anesthetic drugs can affect left ventricular function.

Linear measurements of the left ventricle are generally more accurate when made using transgastric views (in preference to mid-esophageal views).

If short-axis views are used to make left ventricular measurements, take care to ensure that the short-axis view is perpendicular to the axis of the chamber.
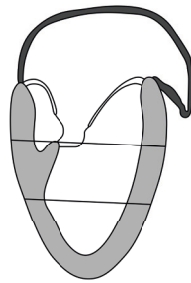
Regional wall motion

Assess regional wall motion in all sixteen myocardial segments:
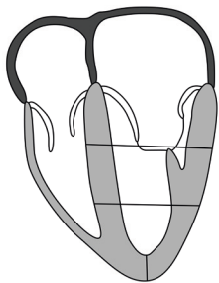
Four-chamber view
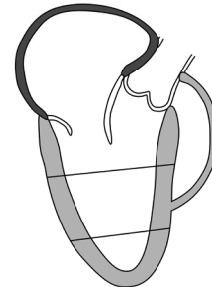
Mid-esophageal: 0–10°
Transgastric: not seen

- Basal and mid inferoseptum
- Apical septum
- Basal and mid anterolateral
- Apical lateral

Two-chamber view

Mid-esophageal: 80–100°
Transgastric: 90–110°

- Basal, mid, and apical anterior
- Basal, mid, and apical inferior

Long-axis (three chamber) view

Mid-esophageal: 120–140°
Transgastric: 120–140°

- Basal and mid anteroseptal
- Apical anterior
- Basal and mid inferolateral
- Apical lateral

Measurements

Measure the left ventricular internal diameter at the junction of the basal and mid thirds of the chamber, at end-diastole (LVIDd) and at end-systole (LVIDs).

Further reading

Hahn RT, Abraham T, Adams MS, et al. 2013. Guidelines for performing a comprehensive transesophageal echocardiographic examination: Recommendations from the American Society of Echocardiography and the Society of Cardiovascular Anesthesiologists. *J Am Soc Echocardiogr*. **26**: 921–964.