4D Echocardiography course

Lecture 1 : Physics of 4D echo, from 2D to historical 3D and nowdays 4D technology. full understanding of : Band width,

1. duty factor,
2. Quality factor ,
3. single crystal technology,
4. harmonic imaging, phassed array,
5. microautarization, analouge to digital-digital to analouge converter
6. , interference , summation&delays.

Lecture 2: - Image resoluion:

axial, lateral, elevation

temporal; how they are affected and manipulated.

4D echo views; apical and parasternal

Lecture 3: mid transesophageal views.

Lecture 4: - Various 4D modalities;

surfuce rendering,

volume rendering,

X-plane, MPR.

Lecture 5: - different aquisition modes; a)live 4D,

b)multibeat ECG aquisition mode,

c) full volume "how to be applicated".

Lecture 6: valvular lesions

Assessment of tricuspid valve

Assessment of mitral valve

Assessment of aortic valve
Assessment of mitral valve
Mitral valve anatomy and echo anatomy
Scallops of mitral valve

Lecture 7:

Assessment of systolic function of the heart using 4D echo
Left atrial volume
Right atrial volume
Strain and strain rate
Displacement curves

Lecture 8: - basics of mitral valve navigator:

Finding end systole,

Placing the reference points

Forming the mitral valve 4 D model.

Lecture 9 :- Softwear Of The Machine

Lectures:- 10 , 11, 12, 13: hands on