

3D Echo

Ultrasound of the heart (echo) is essential for diagnosis of valve disease, heart failure and many more conditions

3D echo is the latest development, it allows us to build an image closer than ever before to the real structures inside the heart.

Most top-spec echo machines now have 3D capability.

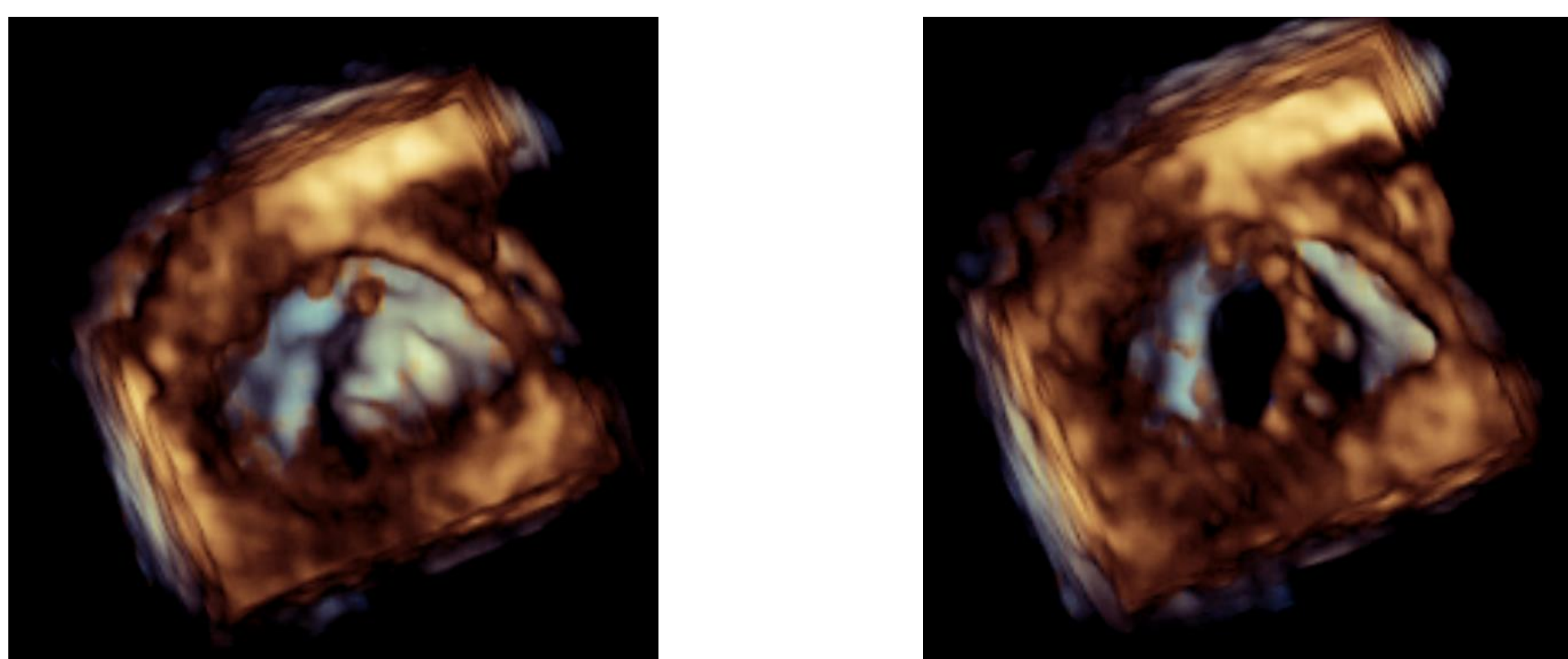
There are very few Physiologist led 3D echo services in the UK. At QEUH, 3D echo was previously done by Cardiologists only.

Project aims

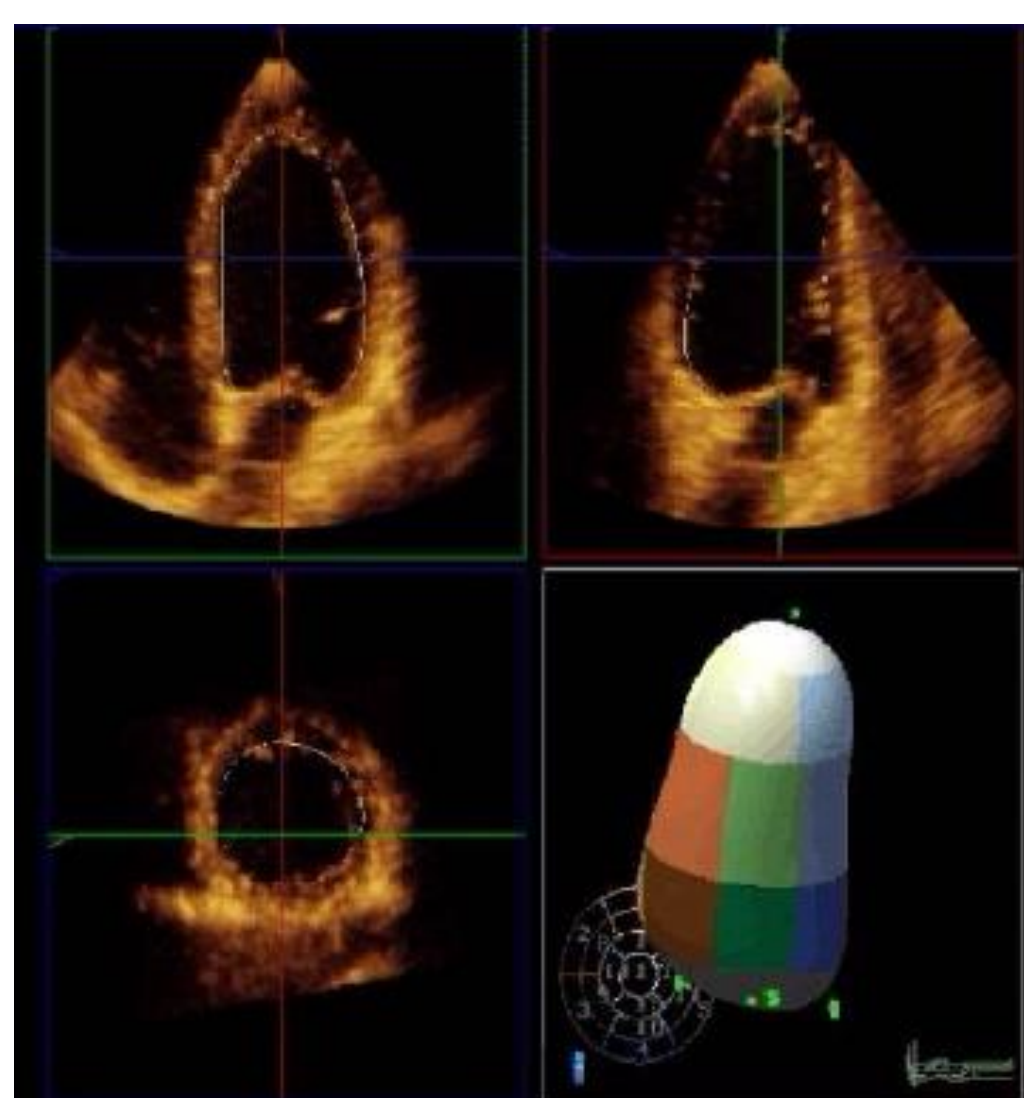
- Train Cardiac Physiologists to use 3D echo.
 - 3D echo course
 - Physiologist cover for 3D training sessions
- Fully utilise the 3D echo machine in the department.
- Apply 3D echo in line with current clinical guidelines
- Remove the need to attend for a second appointment for 3D echo by a Cardiologist or Transoesophageal echo (an invasive test) in some patients.

Current guidelines for use of 3D echo

Assessment of mitral valve disease for suitability for surgical intervention



Assessment of LV volumes and ejection fraction where high accuracy and intra-operator comparability is required



Project timeline

Attendance at a 3D echo course by three sonographers



Weekly practice sessions (3D images taken at the end of routine 2D scans)



3D echo service planned and piloted. Extra training put in place.



Service launch June 2019

Challenges

Developing and publicising a new referral pathway.

Sourcing cover for training sessions in current shortage of Cardiac Physiologists.

Developing a training pathway and timeline for this completely new technology.

Introducing a reporting method and format for 3D echo.

Initial results

- Cover was sourced for 50% of the sessions required.
- A referral pathway was put in place, 3D echo sessions have gone ahead as planned.
- A 3D trained Cardiologist is assisting the 3D sonographers with image rendering and reporting initially.

Conclusion

A Physiologist led 3D echo service has been initiated.

Two of the patients scanned with 3D in the pilot period avoided invasive testing due to high quality 3D imaging.

References

1. European Association for Echocardiography and American Society for Echocardiography guidelines on 3D echocardiography
2. British Society of Echocardiography: Clinical Indications for Echocardiography