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NON-CONTRAST MRI FOR ASSESSMENT OF THORACIC AORTA DIMENSION

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10.1136/heartjnl-2021-BCS.174

Introduction Multi-modality imaging plays a significant role in evaluating and interval monitoring of patients with aortopathies. Echocardiogram is the first screening test followed by Computerised Tomography (CT) and/or Magnetic Resonance Imaging (MRI). Most patients require repeated scans at interval. Both CT and MRI require contrast administration and furthermore, radiation exposure in CT. Locally, we have adopted surveillance scanning with non-contrast MR to overcome the above limitations. This is not widely practised.

Aim The aim of the study is to compare inter-modality agreement between CT (gold standard) and non-contrast MRI measurements of ascending aortic dimensions.

Methods 126 consecutive patients underwent non-contrast MRI thoracic aorta our hospitals between 2017 and 2021. Thirty-eight patients (61% males, age 61 ± 14 years) have had both CT and MRI. A retrospective analysis was conducted to assess the inter-modality agreement of ascending aorta measurements. Statistical analysis was done using R programme (R studio). A Bland-Altman graph was used to assess inter-modality agreement of ascending aorta measurements. Differences in measurements of the two modalities were reported as mean and 95% confidence interval.

Results There is good linear correlation (Pearson's $R=0.86$, $p<0.05$) between CT and MRI measurements. Mean difference between CT and MRI measurements was 2.39mm, 95% confidence interval 6.5mm to 8.4mm, see figure 1.

Conclusion There is good inter-modality agreement of ascending aorta measurements between CT non contrast MRI in our experience. Non contrast MRI has the advantage of requiring no radiation and no need for contrast. This is desirable particularly in young patients requiring long term surveillance.

Conflict of Interest Nil

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IMPLEMENTING AN ENDOCARDITIS MULTIDISCIPLINARY TEAM AND WEEKLY MEETING IN A NON-SURGICAL CENTRE: A HEALTHCARE MODEL TO MAKE THE COMPLEX MORE SIMPLE

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10.1136/heartjnl-2021-BCS.175

Introduction Infective endocarditis is a complex area of cardiology, with a highly variable clinical history and frequent atypical presentations. Despite advances in management it remains associated with a high mortality and severe complications. Most patients are diagnosed and managed outside cardiothoracic centres, either for medical management only, or prior to surgical treatment. These patients may still benefit from a co-ordinated approach to their care, and early input from a surgical team. ESC guidelines recommend the formation of an endocarditis team in reference centres to manage complex cases and advise on non-complicated cases in other centres. This multidisciplinary approach has been shown to significantly reduce 1 year mortality. We created an endocarditis team within a non-surgical centre, with remote input from a Cardiothoracic Surgeon, to aim to improve levels of patient care and outcomes.

Abstract 177 Figure 1

Methods A weekly multidisciplinary meeting (MDM) for review of patients with presumed endocarditis was created. Attendees were invited from cardiology, microbiology, elderly care and acute medicine, with cardiothoracic input from the regional surgical centre. Meetings were held via Microsoft Teams to allow input between the hospital sites involved. Imaging studies could be viewed by all. Attendance was open to the cardiology directorate including junior doctors, cardiac physiologists and nurses for on-going education and multidisciplinary input.

An electronic referral form ensured documentation of patient history, Duke score, imaging and microbiology investigations and current treatment. This was updated weekly with outcomes and recommendations from the MDM and appeared on the electronic patient record.

After 3 months, a questionnaire was circulated to assess attendees' feelings about the meeting and areas for improvement.

Results Over 3 months, 16 patients were referred to the meeting for review. Eleven were treated as endocarditis; after review the remaining 5 were felt to have an alternative diagnosis. Five patients were transferred for surgery or device explant. Others were either not suitable for surgical intervention or did not require surgery. In 11 (68%) cases the MDM added to the patient management plan or changed diagnosis. Meetings had an average of 18 attendees across specialties and grades (figure 1). The majority felt very satisfied with the workings of the MDM (figure 2). Positive aspects highlighted

MDM Attendees

Abstract 178 Figure 1 Attendees represented the multidisciplinary nature of endocarditis care, and the opportunities for education in its management

OVERALL SATISFACTION WITH MDM

Abstract 178 Figure 2 Overall satisfaction with the MDM was high

Abstract 178 Table 1 Attendees were asked their opinions on the impact of MDM on patient

In your opinion, the MDM has improved the following...	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Clinical Decision Making	12 (71%)	5 (30%)			
Co-ordinated Patient Care	12 (71%)	5 (30%)			
Evidence based/guideline directed decision making	11 (65%)	5 (30%)	1 (6%)		
Timeliness of tests and treatments	5 (29%)	5 (30%)	6 (35%)		
Overall quality of treatment decisions	11 (59%)	6 (35%)			
Knowledge of imaging findings	10 (59%)	5 (30%)	1 (6%)		
Knowledge of antimicrobial findings	10 (59%)	6 (35%)	1 (6%)		
Knowledge of need for surgical intervention	12 (71%)	3 (18%)	2 (12%)		
Confidence in individual IE patient management	11 (65%)	5 (30%)	1 (6%)		

included the multidisciplinary input and educational aspects of the MDM. The meeting was felt to improve knowledge of, and confidence in, management of the condition (table 1). Comments for changes or improvements were predominantly related to time (2) and duration (3) of the meeting.

Conclusion We have successfully introduced an effective, well-attended, weekly MDM for the management of endocarditis, resulting in increased confidence in patient management, and the ability to coordinate investigation and on-going care for these patients.

Conflict of Interest na

179 CT-VISIBLE MICROSPHERES ENABLE IN VIVO TRACKING OF BIOMATERIAL DISTRIBUTION AFTER ULTRASOUND-GUIDED INTRAMYOCARDIAL INJECTION

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10.1136/heartjnl-2021-BCS.176

Efficacy of cell therapies are often diminished by low cell retention. A method to visualise the location of grafted cells and biomaterials after delivery could be used to optimise therapies by verifying injection success, retention of the therapeutic and distribution of the product. To address these challenges an injectable cell-substrate consisting of highly porous microspheres containing the computed tomography (CT) contrast agent barium sulphate (BaSO₄) was developed. Porous microspheres (<250 µm) were fabricated via Thermally Induced Phase Separation (TIPS) using a 2% (w/v) 75:25 poly (DL-lactide-co-glycolide) polymer solution containing a 20% (w/v) colloidal suspension of particulate BaSO₄. Culture media conditioned with BaSO₄-loaded microspheres (46.87 mg/ml) showed no significant toxicity when cultured with L929 fibroblasts for up to 7 days (maximum toxicity 12% vs 5% matched control media, n=4, p<0.01). Suspensions of BaSO₄-