Summary and Conclusion

Coronary arteries disease is a leading cause of death for both men and women in developed countries, about 50% of CAD patients die after an acute myocardial infarction without prior symptoms. CAD is the symptomatic presentation of coronary atherosclerosis, which causes narrowing of the coronary vessel lumen which is in order cause a reduction in blood and oxygen supply induce ischemia in the myocardium.

Surgical revascularization for atherosclerotic heart disease is one of the great success stories in medicine. Relief of angina after revascularization, improvement in exercise tolerance, and the realization of survival benefit have attended the operation since the early stages of development.

Coronary artery bypass graft (CABG) surgery is the standard of care in the treatment of advanced coronary artery disease at this operation various conduits are used and could be divided into arterial and venous grafts. Venous grafts have demonstrated a tendency to develop partial or complete occlusions with time, whereas arterial grafts have shown relative resistance to plaque formation and obstruction. However, arterial conduits are more limited in their availability and ease of procurement compared with venous grafts, specifically the saphenous vein. Therefore, saphenous vein grafts (SVGs) remain the most commonly used conduit. So the occurrence of coronary artery bypass graft (CABG) disease and occlusion is common and increases over the years.

Therefore, the gold standard to evaluate bypass grafts after coronary revascularization is the coronary angiography. However, coronary angiography is invasive and costly, and it carries procedure-related risks. Because of this, alternative less invasive methods have been investigated for imaging venous and arterial conduits. These tests are less risky than coronary angiography, but they have many drawbacks such as breathing motion artifacts, which reduce image quality, and the consequent need for lengthy breath-holds. Also, new lesions in the coronary arteries are a potential culprit and must be detectable for imaging procedure to play a significant role in the workup of such patients. Technical improvements in MDCT have enabled this technique to be used for monitoring patency after CABG.

Multislice computed tomography has good image quality due to short scanning time and slice thickness, and it is faster than other noninvasive methods. With the improved spatial and temporal resolution of new generations of multidetector spiral CT (64,128,256……) assessment of the distal anastomosis sites, as well as evaluation of severely calcified coronary arteries, was made possible with greater accuracy.

MDCT is a reliable diagnostic tool and less invasive than coronary angiography Moreover, the equipment and methods involved in MDCT are rapidly progressing such that MDCT might in the near future challenge the superiority of coronary angiography in the evaluation of patients with coronary artery disease.