C-arm Cone Beam Computed Tomography: A New Tool in the Interventional Suite
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Abstract

Introduction: C-arm Cone Beam CT (CBCT) is a technology that is being integrated into many of the newer angiography systems in the interventional suite. Due to its ability to provide cross sectional imaging, it has opened a myriad of opportunities for creating new clinical applications. We review the technical aspects, current reported clinical applications and potential benefits of this technology. Materials and Methods: Searches were made via PubMed using the string “CBCT”, “Cone Beam CT”, “Cone Beam Computed Tomography” and “C-arm Cone Beam Computed Tomography”. All relevant articles in the results were reviewed. Results: CBCT clinical applications have been reported in both vascular and non-vascular interventions. They encompass many aspects of a procedure including preprocedural planning, intraprocedural guidance and postprocedural assessment. As a result, they have allowed the interventionalist to be safer and more accurate in performing image guided procedures. There are however several technical limitations. The quality of images produced is not comparable to conventional computed tomography (CT). Radiation doses are also difficult to quantify when compared to CT and fluoroscopy. Conclusion: CBCT technology in the interventional suite has contributed significant benefits to the patient despite its current limitations. It is a tool that will evolve and potentially become an integral part of imaging guidance for intervention.


Key words: Angiogram, Biopsy, Embolisation, Intervention, Stenting, Vascular