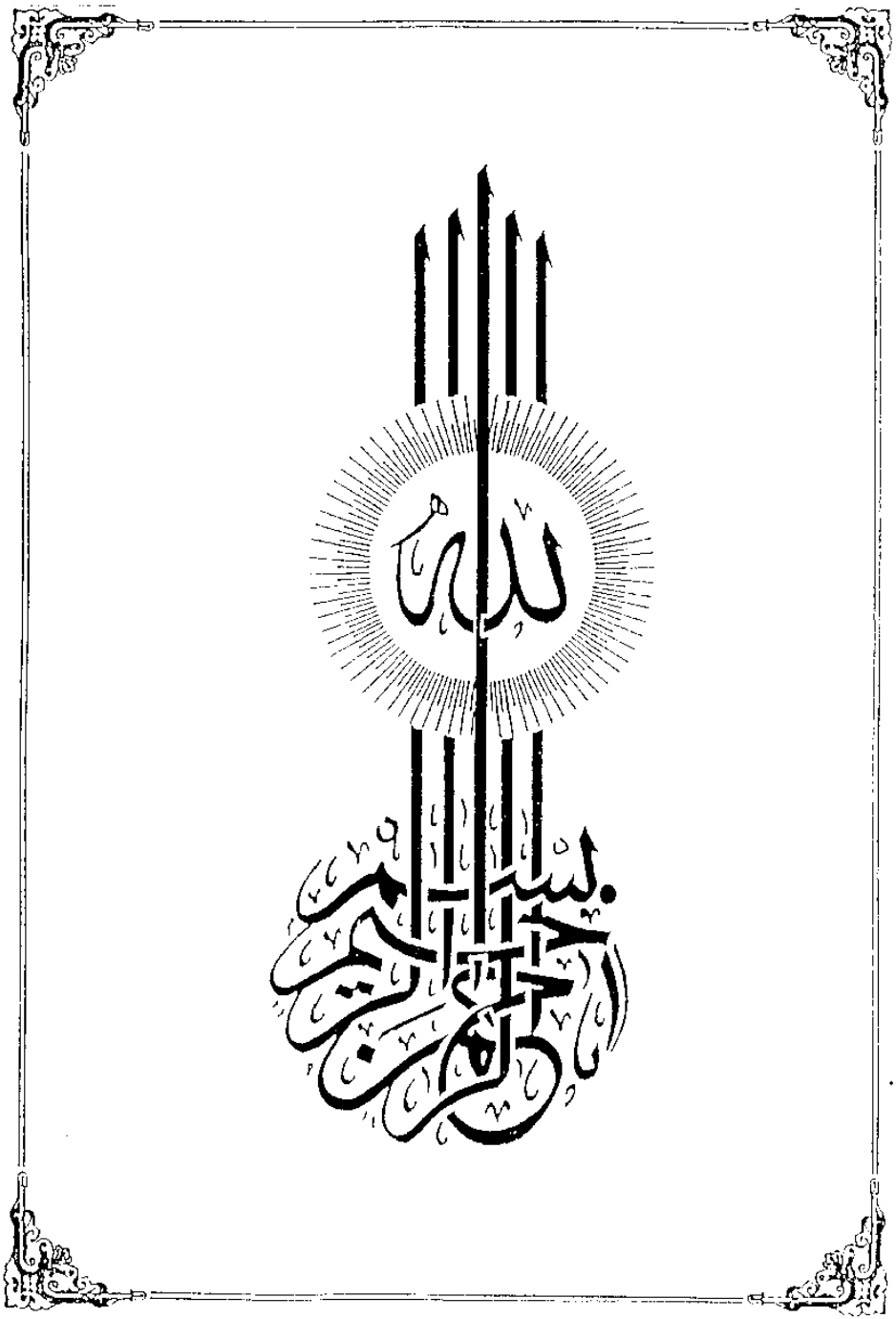

The Role Of The Helical (Spiral) CT Of The Chest In Diagnosis Of Intrathoracic Major Vascular Abnormalities.

Essay

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INTRODUCTION AND AIM OF THE WORK

INTRODUCTION

There are a variety of acquired and congenital conditions which affect the major intrathoracic vessels ; nainely the thoracic aorta, S.V.C. and pulmonary artery. Such major thoracic vascular diseases are of great importance in our medical field due to its high frequency wid fatality rate if not probably diagnosed .

Thus , the suspicion of such diseases necessitates the use of an imaging technique capable of its definitive detection or exclusion and, if detected , able to offer a complete description. The optimal technique for this purpose elucidates efficiently , safely and accurably the pathophysiological elements necessary to establish a diagnostic and prognostic profile for directing proper therapy .

The traditional approach to the diagnosis of thoracic vascular diseases has been considered angiography . Although angiography has been considered to be the definitive imaging technique , it is some what limited in its diagnostic capability ; only the intra vascular regions that become opacified with contrast material are demonstrated on a projective fashion. In addition, angiography may be technicaly difficult in the setting of tortuous or stenosed vesselsand it comes with it the risk of catheterization and contrast reaction ***(Petasnick, 1991)*** .

The techniques for CT have undergone many changes since its clinical introduction in the mid 1970 s ; these changes have dramatically altered how CT scans are obtained.

Helical (spiral) CT is a recently developed technique that allows rapid data acquisition duough an entire anatomic region during a single breath -hold . High quality spiral CT scans of the thoracic region can be obtained with voltunes of contrast material that are small relative to those used with conventional CT. Consequently the over all nawre and the extent of thoracic vascular diseases can often be more accurately determined by this tomographic technique ***(Brown & Husband, 1993)*** .

Helical acquisition of CT data is rapidly becoming the state of the art in thoracic CT. Its speed, flexibility in location of slice reconstruction, and usefulness for rendering three dimensions models will make it the dominant CT technology for the mid 1990s.

Aim of the work

This essay will review the technical principles that govern helical CT and its potential advantages and disadvantages. We will also illustrate the various intrathoracic vascular diseases as seen on spiral CT with low volumes of contrast material.