

Editorial

CT IMAGING OF RENAL CANCERS

Computed tomography (CT) imaging has been shown to be a useful imaging modality for diagnosis of a variety of diseases across various anatomical organ-systems, including the urinary system. The exquisite high-resolution, multiplanar and isotropic capabilities of CT, makes this imaging modality the examination of choice for diagnosis of a wide range of renal diseases. Renal cancers can affect different parts of the kidney including the renal parenchyma (viz, cortex and medulla), renal calyces and renal pelvis. This special edition of *The South African Radiographer* covers a comprehensive description of a diverse spectrum of common benign and malignant renal cancers. The discussion of these cancers is further supplemented with an illustrative pictorial display of these renal cancers and renal cysts seen in adults. This article, however, excludes congenital renal cancers in adults and renal cancers in children.

Renal cancers can assume different appearances on CT imaging which is dependent on the tumour characteristics and growth patterns. This article provides a detail description of the different CT appearances of these benign and malignant renal cancers. Contrast enhanced CT is ideal to demonstrate the extent of tumour involvement within the kidney and peri-renal tissue, as well as distant spread of metastasis. The role of using Hounsfield units, to measure tumour density and thus confirming the type of cancer, is also highlighted.

Various experts advocate the use of multiphase CT for diagnosis of certain renal cancers. This approach does raise concerns around radiation dose especially four-phase CT studies for renal cancers. However, the need for employing multi-phasic studies must be case dependent, clinical justified and the benefit to each patient must outweigh the risk.

This article further provides some expert advice for interpreting CT images using a systematic approach that will be useful for all radiographers. In addition to the above mentioned concepts, this article further provides a succinct overview of other imaging modalities such as conventional diagnostic imaging, diagnostic ultrasound, magnetic resonance imaging and nuclear medicine studies in terms of the diagnosis of renal cancers.

Given that CT imaging of the abdomen forms a significant component of the daily workload of diagnostic radiographers, and the fairly common occurrence of renal cancers, it is important that radiographers be aware of the imaging appearance of these cancers. This article will go a long way in enhancing radiographers' understanding on this topic. CT imaging will remain an essential diagnostic imaging tool for the diagnosis of renal cancers and regular reviews, such as highlighted in this article, is beneficial for all radiographers.

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