ROLE OF MULTISLICE COMPUTED TOMOGRAPHY IN EVALUATION OF BOWEL DISEASES

Thesis

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دور الفحص بالأشعة المقطعية متعددة المقاطع في تقييم أمراض الأمعاء

رسالة

توطئة للحصول علي درجة الدكتوراة
في الأشعة التشخيصية

مقدمة من

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Introduction

Imaging the small bowel is challenging technically. Because the organ is long and serpentine, a large field of view and a large volume are needed to display in entirety. Another problem for imaging is motion, both intrinsic motion of peristalsis and the positional changes caused by breathing. These two motion patterns can be additive and lead to a complex movement of individual bowel loops, making their tracing very difficult. In addition, because small bowel diseases have a low incidence, their appearance is less well known and there is an increased risk of missing them. Ever most of the common diseases in the small bowel, early changes are subtle making their diagnoses difficult *(Patak et al., 2005).*

Small bowel follow through (SBFT) and enteroclysis are widely used for small bowel imaging and barium enema for large bowel imaging; however, these examinations provide only indirect information about the bowel wall and surrounding structures and prone to problems caused by overlapping bowel loops. Although computed tomography enteroclysis (CT E) profits from excellent distension of the entire small bowel and precise evaluation of the entire small bowel and precise evaluation of the extent of extraluminal disease, it has the major drawbacks of invasiveness and high radiation exposure. Recently, the role of wireless capsule endoscopy to assess small bowel diseases has been reported. However problems with technique include capsule obstruction by bowel strictures and battery failure in prolonged transit and also the false negative results if there is rapid peristalsis at the lesion site or if there is bowel angulation at a lesion that impairs the camera view *(Hong et al., 2006 a).*

Conventional colonoscopy potentially permits total colon evaluation but sometimes fails to show the entire colon in about 5% of cases owing to difficulties in reaching the right side; moreover, it does not allow evaluation of the liver and other organs outside the colon *(Neri et al., 2002).*