

**OMED 2005 Colorectal Session:
CT Colonography**

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Overview:

CT colonography (CTC) continues to rapidly evolve in image acquisition and 3D image display techniques, which have great influence on image quality and reader performance. Amid the changes of improvement is the need to begin the process of standardization. The first effort of standardization by radiology has been directed towards the structured reporting of lesions detected at CTC. A final topic will be the issues of current reimbursement at local coverage decisions for specific types of clinical vignettes.

Technical Advances of CTC:

CT Image Acquisition: As CT scanners have advanced from 4DCT to 64DCT scanners, the ability to acquire thinner collimation data with potentially improved dose efficiency continues to improve. The high contrast interface of a polyp within the air filled colon allows CT to exploit very low dose parameters of 10-50 effective mAs (typical abdomen CT can range from 150-200 effective mAs). However this needs to balance the need to also evaluate the low contrast extra-colonic structures, such as the liver and kidney.

Patient related parameters: The bowel preparation and insufflation at CT are two critical patient related parameters which influence image quality. Stool tagging and/or electronic subtraction have varied in techniques. Pickhardt et al (NEJM 2003) used rigorous tagging of 500 cc of 2% barium and 120 cc of Gastrograffin. Since this study, Pickhardt has used and evaluated half the doses of tagging agents, along with single dose Phospho-soda, with reported good success (SGR 2005). Iannaccone et al recently published a single tagging study of Gastrograffin 200 cc over 2 days, with elimination of catharsis and ultra low dose techniques (Gastroenterology 2005). The current trends are to decrease the dietary restriction and catharsis, with efficient use of tagging agents. Patient insufflation can be performed with either room air or CO₂, however automated insufflation of CO₂ is gaining in popularity.

Standardization of reporting of CTC (C-RADS):

A radiology manuscript representing a consensus statement of the working group of virtual colonoscopy is currently in press (Zalis et al, Radiology 2005). This effort introduces the concept of “C-RADS” to provide a template of structured reporting of describing colorectal findings (size, morphology) with selected images and extra-colonic findings. This effort also begins to address possible surveillance intervals, which will require an on-going multi-disciplinary process of evaluation.

Reimbursement by ACR:

As of July 2004, two Category III codes were created for CT colonography: 0066T (screening) and 0067T (diagnostic). Category III codes are mainly for tracking purposes and do not have global reimbursement established, however reimbursement at individual and local levels can be determined. Currently nine states have achieved local coverage decisions within the Medicare network (CAC) mainly for the clinical vignette of patients who have had incomplete colonoscopy. Additional coverage limited to patients who are at risk to undergo colonoscopy (e.g. anesthesia risk, anti-coagulated) is being sought.

Summary:

As CT colonography evolves from performance during validation studies to practice in communities, key influences will be important. The effective multi-disciplinary collaboration among gastroenterologists, radiologists, internal medicine and colorectal surgery will be critical to achieve enduring relationships and clinical service which promote patient care. The proper selection of patients for CTC as an adjunct to colonoscopy will be needed to either help select those patients who will benefit from therapeutic colonoscopy or provide for patients who are not candidates for colonoscopy. In today’s growing consumerism of medical health care, “shared medical decision” making between patients and doctors may provide an effective balance. Finally, as technologies continue to evolve, on-going quality assurance of use, quality and costs will be needed.