

Accuracy of water-enema multidetector computed tomography (WE-MDCT) in colon cancer staging: a prospective study

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Purpose

To assess the accuracy of water-enema multidetector computed tomography (WE-MDCT) in extra-rectal colon cancer staging.

Materials and methods

Fifty-three patients (mean age 70 years) with extra-rectal colon cancer proven by colonoscopy and biopsy were prospectively evaluated by preoperative WE-MDCT. CT scans were both intraluminal (water enema or WE) and intravenous (iodinated) contrast enhanced (CE). All patients underwent surgery. Tumors were classified with the TNM staging system. Noted CT features were: tumor size and location; tumor form and edges; spread to the pericolic fat or neighboring organs; thickening of retroperitoneal fascia; number, size, and enhancement of the peritumoral lymph nodes. Tumors were classified on CT into 3 T-stage groups: T1/T2, T3, and T4. Lymph nodes were classified by their density after injection [positive over 100 Hounsfield units (HU)].

Results

Tumor localization to the specific colon segment was correct in all the cases. The agreement between WE-MDCT staging and histopathology staging was good ($k = 0.64$). An irregular and bowl-shaped aspect of the external edges of tumor provided excellent sensitivity for T3/T4 inclusion (Se 97.7%, NPV 85.7%). Thickening of a fascia or the abdominal wall provided good specificity for T4 stage (Sp 88.1%, NPV 94.9%). Enhancement over 100 HU of at least one peritumoral lymph node was the best criterion of N+ staging (Sp 67.7%, NPV 87.5%).

Conclusion

WE-MDCT permits good staging of colon cancer based on objective features.

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