Impact of a Collaborative Small Bowel Obstruction Imaging and Care Protocol with the General Surgery Service on Radiation Exposure and Resource Utilization

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Introduction:

Small bowel obstruction (SBO) is a common cause of diagnostic imaging, hospital admission, and surgical consultation. At our institution, following initial CT imaging without oral contrast demonstrating SBO, a second CT with oral contrast was typically obtained. A new protocol has been implemented in a collaboration between the department of surgery to eliminate the second CT, using oral Gastrografin® and serial abdominal radiographs for further assessment of SBO in clinically stable patients. This study aims to assess the impact of this protocol on radiation exposure and resource utilization.

Methods:

A retrospective cohort study was conducted on patients with SBO diagnosed on initial abdominopelvic CT for whom the general surgery service was consulted. Patients who underwent two abdominopelvic CT scans within 24 hours, one after the administration of oral contrast and one without, prior to implementation of the new protocol were selected for the control group. Ionizing radiation exposure, contrast media utilization, and CT technologist time were recorded for both groups.

Results:

Eighteen patients were included in the experimental group and 38 patients were included in the control group. Total effective dose (mSv) and CT technologist time were significantly less with the new protocol ($p=0.02$ and $p<0.001$, respectively). There was decreased use of intravenous contrast media in the experimental group relative to the control group, although this was not statistically significant ($p=0.06$).

Conclusion:

The implementation of a collaborative SBO imaging and care algorithm between general surgery and radiology resulted in reduced radiation exposure to patients and decreased CT technologist time.


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