

A study of missed lesions on pre- & post-operative MDCT in patients with advanced ovarian cancer

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PURPOSE: To illustrate the patterns of erroneous interpretation of pre- & post-operative MDCT for detection of peritoneal lesions in patients with advanced ovarian cancer.

MATERIALS AND METHODS: Between 2007 and 2011, Pre-operative MDCT of 148 FIGO stage IIIC-IV ovarian cancer patients, who underwent MDCT before primary cytoreduction, were reviewed and compared with the surgical findings from the operation records, in relation to the anatomic location of the peritoneal lesions. For the discrepant cases, we re-evaluated the MDCT after the surgical findings became known, and categorized the cases as either absence of lesion or presence of lesion (missed case). We reviewed follow up MDCT or PET-CT of 64 image based recurrent cases after primary cytoreduction. We re-evaluated the MDCT taken just before recurrence was found and the case was categorized and analyzed same way to pre-operative cases.

RESULTS: On Pre-operative CT review, 63% (43/68) of false negative cases showed lesions on re-evaluation. The most common discrepant regions were the small bowel mesentery (21%), sub-diaphragmatic space (19%) and porta hepatis (16%). On post-operative follow up CT review, 67.2% (43/64) of recurrent cases (22 of 35 recurred cases on CT and 21 of 29 on PET-CT) were missed in previous follow-up on re-evaluation. The most common missed sites were the porta hepatis (10/43) and abdominal Lymph nodes.

CONCLUSION: The most commonly missed locations of peritoneal implants were the same as preoperative imaging criteria that could predict suboptimal primary cytoreduction. Familiarity with these imaging features may aid in prediction of resectability and facilitate appropriate management.