

THE ROLE OF COMPUTERIZED AXIAL TOMOGRAPHY IN THE FOLLOW-UP OF PATIENTS WITH CARCINOMA OF THE OVARY

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Carcinoma of the ovary is characterized by the intraperitoneal spread of the disease at the first diagnosis; correct treatment requires aggressive surgical staging and accurate clinical control of the response to therapy ⁽¹⁾.

With the advent of computerized axial tomography (CAT), a new, non-invasive method is available that can give images of the entire abdominal cavity, with a high spatial resolution ⁽²⁾. Its use, increasingly widespread in the field of oncology, prompted us to ascertain its accuracy in the examination of the abdomens of patients receiving chemotherapy for epithelial tumors of the ovary.

MATERIAL AND METHODS

Our series comprised 19 patients with carcinoma of the ovary who had received polychemotherapy for at least 6 months and had been submitted to CAT examinations of the abdomen prior to surgery. We performed a retrospective analysis of the results obtained with computerized tomography and compared them with those obtained at second look laparotomy. The interval between the tomographic investigation and surgery ranged from 7 to 60 days, with a mean of 28.7 days. We excluded from the study, patients in whom the second look was performed more than 60 days after the computerized tomography.

The CAT examinations were performed with a tomographic unit Delta 50 FS (Ohio Nuclear), that has a scan time of 18 seconds and simultaneously gives pairs of transverse sections, each 13 mm thick. The scanning was continuous, starting at the diaphragmatic cupola and continuing to the pubis symphysis.

We administered orally about 1.5 l of contrast medium (5% Gastrografin solution) to obtain a complete opaqueness of the gastrointestinal tract.

In many cases, in order to visualize the rectosigmoid, we also used an enema of diluted Gastrografin, and to better delineate the uterine cervix and vagina a tampon was inserted in the vagina. In all cases we administered a rapid intravenous infusion of 300 ml of methylglucamine iohalamate 36% to visualize better the ureters and bladder.

In each case, the second look laparotomy included a cytologic examination of the liquid drawn at various levels after washing of the peritoneal cavity, careful inspection and palpation of the entire peritoneal surface and multiple biopsies.

SUMMARY

In order to assess the accuracy of CAT in the follow-up of the patients affected by ovarian carcinoma, we compared the results of this method to those of second-look laparotomy in 19 patients.

In 16 out of 19 patients the CAT showed the presence or absence of the disease correctly. There were 3 false negatives, caused by small diffuse peritoneal metastases, and no false positives.

The results of this study show that CAT, though useful in studying the evolution of abdominal and pelvic carcinomas, cannot replace the surgical second-look in cases of ovarian cancers, due to the high incidence of false negatives.

RESULTS

Computerized tomography predicted correctly the presence or absence of disease in 16 patients (14 true negatives and 2 true positives). There were no false positives; in the two positives there was a good correspondence between CAT and laparotomy in the localization and assessment of the size of the neoplasms; in one of the two cases there was also an infiltration of the bladder cupola, well demonstrated with CAT and confirmed at the second look.

The reliability of the diagnostic method is, however, indicated by 3 false negatives. In all three patients, multiple metastatic disseminated nodules, with diameters ranging from 5 mm to 1 cm, were found intraoperatively in the peritoneal cavity.

DISCUSSION

In examinations in which peristalsis is adequately inhibited by drug administration and in which the intestine is well injected with oral contrast medium, peritoneal metastases with a diameter of over 1 cm can be well demonstrated with CAT. They are evidenced as small round solid masses, adhering to the serous membrane of the intestinal loops and to the abdominal wall⁽³⁾.

The identification of small peritoneal nodules is further facilitated if they are embedded in the parietal peritoneum so as to face the anterior and lateral facies of the liver, particularly in the presence of a small amount of ascites, as thus there is no danger of confusion being made with other structures, above all with the in-

testinal loops; for this reason metastatic lesions are searched for with particular care in this area⁽⁴⁾.

With CAT, massive diffuse peritoneal carcinomatosis can be recognized on the basis of the apparent thickening of the walls of the intestinal loops, as a type of solid density coat covering the viscera as well as the parietal peritoneum. CAT also has the advantage of allowing the demonstration of small quantities of ascites, that initially collects at the hepato-renal fossa and the pelvic cavity.

However, this method, because of the limitations of the instruments used at present, does not evidence metastases of less than 1 cm in diameter. Even if by using faster instruments the spatial resolution is improved, in this type of disease false negatives will always be an unsurmountable problem⁽⁵⁾.

At present, therefore, CAT, although it can be useful in following the development of the disease in abdominal and pelvic sites, cannot replace the surgical second look in the follow-up of patients with carcinoma of the ovary.

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