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Role of Peritoneal Cytology in Locally Advanced Gastric CA

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I. INTRODUCTION

Gastric cancer is most common in South Korea, south east Asia and the third most common in South Korea -south east Asia and the third most frequent cause of cancer death in western countries.[1] By early endoscopic surveillance, survival has improved in western countries and East Asia[2]. Also, advancements in medical and surgical fields,have led to improved detection of early stage cancers. However, majority of our Indian patients present with advanced stage disease.

Peritoneal metastases remains the most common type of metastasis in advanced stage cancers with poor prognosis. The median survival here in only a few months. In such a scenario, positive peritoneal wash cytology has shown to predict peritoneal metastases and recurrence and the current American Joint Committee on Cancer (AJCC)[3, 4] has included it under metastatic disease.

Hence, peritoneal wash cytology is a must in all cases of gastric cancer. Positive cytology has shown a better survival than overt metastases and therapeutic strategy for such a condition needs to be evolved.

II. OBJECTIVE

To study the incidence of peritoneal wash cytology in patients with gastric cancer according to stage.

III. METHODOLOGY

A prospective study of 50 patients at Rajiv Gandhi Government General hospital, Chennai with gastric cancer who underwent surgery, was conducted.

All biopsy proven cases of carcinoma stomach who underwent surgery, with preoperative metastatic workup done were enrolled. Patients with definitive organ metastases or peritoneal metastases were excluded from the study.

Peritoneal wash cytology was performed during laparotomy or laparoscopic evaluation. About 200ml of sterile saline was instilled into the right and left paracolic gutters, bilateral subphrenic space, omentum, douglas pouch, and dispersed manually without touching the primary tumour. Washing sample was then aspirated. Cytology specimen were concentrated by centrifugation, fixed in 95 percent ethanol and mounted on slides and stained using papanicalou technique. All the slides were examined by an experienced onco-cytopathologist.

IV. STATISTICAL ANALYSIS

Clinical and pathological variables were analysed using the Chi-square test. Variables were found to be statistically significant if they had a p value of less than 0.050. SPSS software was used for the analysis.

V. OBSERVATIONS

By frequency table,number of cases were the same between age groups of 40-60 years and >60 years. There were 10% cases in the 20-40 years age group indicating early occurrence of the disease. Male sex dominated the clinical picture with 78%. Gastric outlet obstruction and pain were the most common clinical symptom noticed and most of them were distal gastric cancers. Diffuse carcinomas were of 58% and Bormann's type[5, 6] 3&4 together accounted for about 60%. Most of them were moderately differentiated (58% of study group) and poorly differentiated carcinomas were of 34% in this study. Margins were positive in only 4% of the cases operated. Half of the resected specimens had more than 7 nodes with a lympho-vascular invasion in 6%. Cytology was positive in 9 of the total cases studied. 6 of them were p0c1 category belonging to stage IIIC(T4N3M0).

By cross table analysis,peritoneal wash cytology was compared with each of the variables. With regard to age, it was not statistically significant as peritoneal cytology positivity was noted in both the age groups of 40-60years and >60 years. Similarly, sex had no prognostic significance in the present study.

Histologically, Bormann's classification was close to statistical significance with a p value of 0.055 unlike Lauren's with value of 0.074. positive margins and number of nodes in the resected specimen were statistically significant with a p value of <0.001 for margins and 0.025 for the nodes. Lympho-vascular invasion

was also of much statistical significance with a p value <0.001. Symptomatology was significant and not the type of surgery,whereby anatomical location of the tumour was not of significance as evident in this study. Nodal staging (p value of 0.040) and group staging was very significant statistically with a value of <0.001, showing that a higher T staging alone was of much less significant statistically. This can be explained by the present study that cytology positive cases were more common in patients with stage IIIC disease.

VI. RESULTS

Of the total 50 patients studied,41 (82%) had a negative peritoneal cytology. 9(18%) had positive peritoneal cytology. Of those 9, only 6 of them had microscopic evidence of peritoneal disease. Three of them had macroscopic peritoneal disease and positive peritoneal cytology. Total cytology positivity is about 18% of the study population of which 12% had microscopic evidence of peritoneal disease (p0c1) and 6% of p1c1 category. Most of the cases of positive cytology belonged to stage IIIC category with T4&N3 disease.

VII. DISCUSSION

Based on our study, patients evaluated radiologically were upstaged intraoperatively and still more pathologically[8]. Hence,laparoscopic evaluation becomes essential in all cases of locally advanced gastric cancers to rule out positive peritoneal cytology,as it is metastatic by the current AJCC recommendations. This will help in planning neoadjuvant chemoradiotherapy for inoperable tumour and favour R0 resections.[9, 10] Also, the role of intraperitoneal chemotherapy in peritoneal wash cytology positive patients can be tested. Though positive peritoneal cytology is metastatic disease (M1) a subset of patients with N0-2 disease have a better survival when compared to patients with N3 disease,which can be studied.

To conclude, peritoneal wash cytology positivity is considered metastatic by the current AJCC guidelines. Hence, peritoneal wash cytology by laparoscopy, if neoadjuvant treatment is planned or by laparotomy,should be an integral part of evaluation of all patients with locally advanced gastric cancers as evident from this study.

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