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Prospective Study on Peritoneal Wash Cytology Positivity In Patients With Gastric Cancer

Dr. K. Padma[1], Dr. J.Sathish Kumar[2]

[1]*(AssistantProfessor,DepartmentofGeneralSurgery,GovernmentKarurMedicalCollegeHospital)*

[2]*(AssistantProfessor,DepartmentofGeneralSurgery,GovernmentKarurMedicalCollegeHospital)*

Abstract: Aim: *The aim of the study is to analyse the incidence of peritoneal wash cytology positivity in patients with gastric cancer, according to stage. According to AJCC guidelines , peritoneal positive cytology is metastatic disease and is a poor prognostic factor and treatment guidelines need to be evolved.*

Methods*: This is a prospective study conducted at our institution with 50 gastric cancer patients from June 2014 to December 2019. Diagnostic laparoscopy or laparotomy with peritoneal wash cytology was done for all patients and cytological examination was done from the specimen obtained and results mapped accordingly to the test results.*

Results: *Of the 50 patients studied , 6 of the patients were of POC1 and 3 of the patients were P1C1. Cytology positivity was mostly in the diffuse histological group with moderate to poor differentiation. Most of the patients were found to be diagnosed as Stage IIIC disease either T stage 4a or 4b with N3 disease pathologically.*

Conclusion: *Positive peritoneal cytology in gastric cancer is metastatic disease. Hence all patients with locally advanced gastric cancer need a peritoneal wash cytology done by laparoscopy, as a part of staging workup and treatment planning.*

Keywords: *peritoneal cytology, gastric cancer, metastatic.*

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I. Introduction

Carcinoma stomach is the most common cancer in the South East Asia where endoscopic surveillance, is a commonly followed practice. Hence detection of early cancer is at its best. However , majority of our Indian patients present with advanced stage of the disease. Peritoneal metastasis remains the most common type of metastases in advanced stage ,which is a sign of poor prognosis. The median survival in these types of patients is very poor, leading to a short life span of few months. In such a scenario , positive peritoneal wash cytology has shown to predict peritoneal metastasis in absence of gross macroscopic peritoneal disease. It has also shown to predict the chances of post operative recurrences in these patients. According to the AJCC guidelines on gastric carcinoma , positive peritoneal wash cytology has been deemed to be graded as M1 or metastatic disease and the treatment protocol in these types of patients grossly changes from other patients with similar stages of the disease.

Hence peritoneal wash cytology is a definitive step needed in all patients undergoing any intervention in gastric carcinomas. Positive peritoneal wash cytology has shown to imply a better prognosis and survival than in patients with overt and macroscopic intra abdominal metastasis. Hence , the therapeutic strategy for such patients who are diagnosed to have a positive peritoneal wash cytology during intra or post operative period needs to be evolved.

BACKGROUND AND PURPOSE OF THE STUDY:

The main purpose of the study is to analyse the presence or absence of positive peritoneal wash cytology by means of cytological examination in patients who have been diagnosed with carcinoma stomach, by targeted invasive and non invasive investigations.

II. Materials and Methods

Study Area :
Government Karur Medical College and Hospital ,Karur
Study population: Patients admitted in Government Karur Medical College and Hospital, Karur diagnosed to have carcinoma stomach.
Inclusion criteria:

1. **Patients diagnosed to have carcinoma stomach.**

2. Patients above 18years
3. Patients who are willing for operative procedure for carcinomastomach.
4. Patients willing for followup.
5. Patients willing for Neoadjuvant / Postopeartive chemotherapy /radiotherapy.

Exclusion criteria:
1. Stage 4 diseased patients of carcinoma stomach with organmetastasis
2. Patients not willing forintervention.
3. Patients with pre existingcomorbidities.

Study Period:
June 2014-December 2019
Sample Size:50.All patients eligible by inclusion and exclusion criteria were included in the study.
Sudy Design:
This prospective study was conducted on patients admitted in Government Karur Medical College ,Karur after obtaining informed consent from each respondent.

Parameters to be studied: - Positive peritoneal cytology :
1. Differentiation of the tumour
2. Borrmann classification
3. Incidence of Lymphovascularinvasion
4. Status of regional lymphnodes
5. Stage of the disease at the time ofpresentation.
6. Age of thepatients
7. Symptoms atpresentation.

III. Methodology:

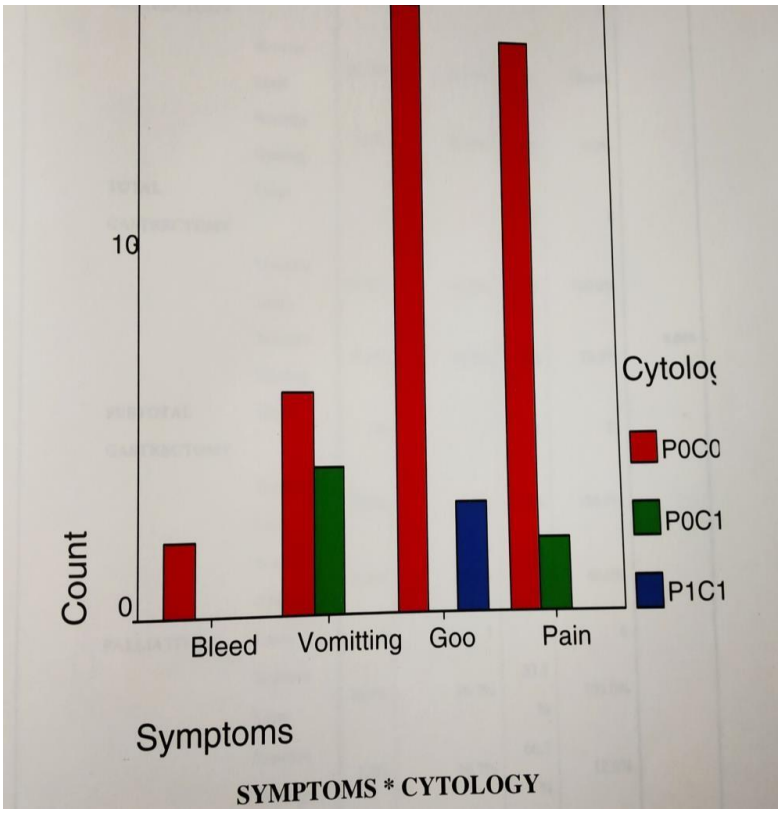
Patients were selected based on the inclusion criteria with meticulous history taking , physical examination and investigations based on the stage of the disease.

This is a prospective study of 50 patients with gastric carcinoma at our institute from 2014 to 2019 who underwent surgery .All biopsy proven cases of carcinoma stomach who underwent surgery with preoperative metastatic workup done, were enrolled. Patients with definitive organ or peritoneal metastases were excluded from the study.

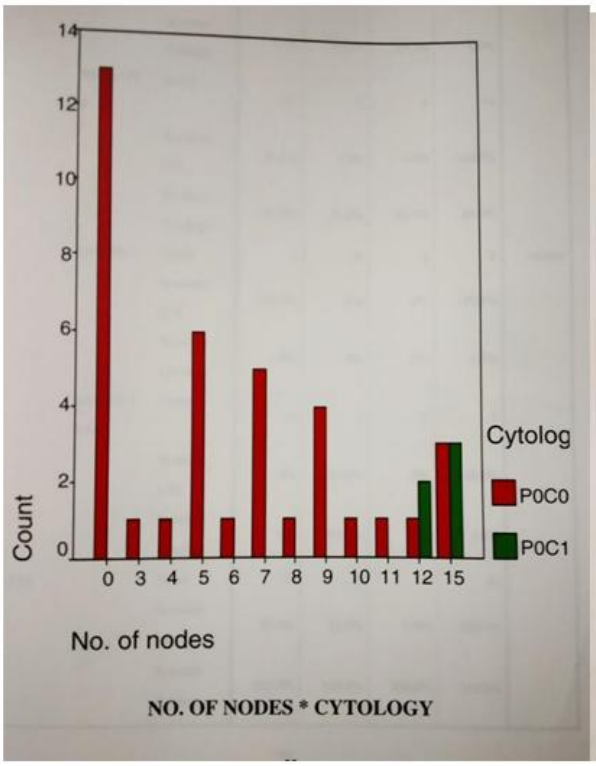
Peritoneal wash cytology was performed during laparotomy or laparoscopic evaluation. About 200ml of sterile saline was instilled into the right and left paracolic gutter , bilateral subphrenic spaces , omentum , pouch of Douglas and was dispersed manually without handling the primary tumour. Washing 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 cytopathologist and the results were tabulated accordingly.

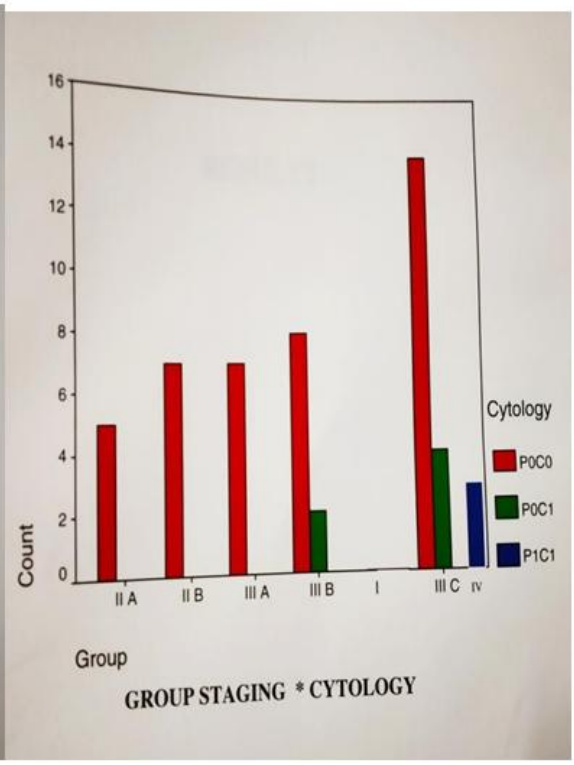
IV. Discussion

Majority of the patients who were enrolled in this study were more than 60 years of age. However,10% of the patients were of 20-40 years of age indicating early disease occurrence , predominantly seen in male gender patients. Gastric outlet obstruction and pain were the dominant clinical presentation in 78% of the patients analysed in this study. Diffuse gastric cancer histological type accounted for 58% of the patients in this study.



The Bormann's type of tumor examined and confirmed bycytopathological examination were of types 3 and 4 combined, accounting for 60% of the cases. Mostly differentiation of the tumor was 58% moderately differentiated and 34% accounting to poorly differentiation characteristics. Positive peritoneal cytology was found in 9 of the total cases studied and 6 of the patients were of P0C1 category with Stage IIIc(T4N3M0) if without cytology.





Statistical significance was noted in male sex in all age groups. Margin postitivity and nodal recurrence was statistically significant with p values of less than 0.001 and 0.025 respectively. Lymphovascular invasion was of much significance along with nodal and group staging. Based on our study, cytological positivity was more common in patients with stage IIIc disease.

V. Conclusion

Based on our study , patients evaluated radiologically were upstaged intraoperatively and still more pathologically. Hence laparoscopic evaluation becomes an essential tool in all cases of locally advanced gastric carcinoma. This is to rule out positive peritoneal cytology which becomes a metastatic disease by AJCC guidelines.

This will be helpful in planning neoadjuvantchemoradiotherapy for inoperable tumours and favour R0 resections. Also the role of intraperitoneal chemotherapy in positive peritoneal wash cytology patients can be tested and the survival benefit in N0-2 versus N3 cytology positive patients, can also be studied.

To conclude , peritoneal wash cytology is a must and definitive step in all patients undergoing any planned interventions for carcinoma stomach .It should be made an integral part of staging work up in locally advanced gastric cancer patients. As evident from this study ,it can subcategorize metastatic from the actual locally advanced diseased ,to aid in correct treatment planning.

References

[1]. HOLZKNECHT G : Die Rontgendiagnostik des Magens, **Jahreskurse f. ärtzl. Fortb.**, August 1911, p. 88.
[2]. EUSTERMANGB:Gastriccarcinomamasqueradingasbenignulcer,**LibmanAnniversaryVolumes**,1932,i,385.
[3]. SCHINDLER R : **Gastroscopy: the endoscopic study of gastric pathology**, 1937, Univ. of Chicago Press,Chicago.
[4]. HOLZKNECHT G and LUGER A : ZurPathologie und Diagnostik des Gastrospasms, **Mitt. a. d. Grenzgeb. d. Med. u. Chir.**, 1913, xxvi,669-694.
[5]. WILSON LB and MCCARTY WC : The pathological relationships of gastric ulcer and gastric carcinoma, **Am. Jr. Med. Sci.**, 1909, cxxxviii,846-852.
[6]. ASCHOFF L : **Deutsch. med. Wchnschr.**, 1912, xxxviii,494.
[7]. Curtis JL, Burns RC, Wang L, et al.: Primary gastric tumors of infancy and childhood: 54-year experience at a single institution. J PediatrSurg 43 (8): 1487-93,2008.
[8]. Subbiah V, Varadhachary G, Herzog CE, et al.: Gastric adenocarcinoma in children and adolescents. Pediatr Blood Cancer 57 (3): 524-7, 2011.
[9]. American Cancer Society: Cancer Facts and Figures-2000. Atlanta, Ga: American Cancer Society,2000.
[10]. GuilfordP,HopkinsJ,HarrawayJ,etal.: E-cadheringermline mutationsinfamilialgastriccancer. Nature392(6674):402-5,1998.
[11]. YooCH,NohSH,ShinDW,ChoiSH,MinJS.Recurrencefollowingcurativeresectionforgastriccarcinoma.BrJSurg.2000;87:236-42
[12]. Quero L, Guillerm S, Hennequin C. Neoadjuvant or adjuvant therapy for gastric cancer. World journal of gastrointestinal oncology.2015;7:102-10
[13]. AgolliL,MauriziEnriciR,OstiMF.Adjuvantradiochemotherapyforgastriccancer:Shouldweuseprognosticfactorstoselect patients?. World J Gastroenterol.2016;22:1131-8
[14]. Macdonald JS, Smalley SR, Benedetti J, Hundahl SA, Estes NC, Stemmermann GN. et al. Chemoradiotherapy after surgery compared with surgery alone for adenocarcinoma of the stomach or gastroesophageal junction. N Engl J Med.2001;345:725-30
[15]. Smalley SR, Benedetti JK, Haller DG. et al. Updated analysis of SWOG-directed intergroup study 0116: a phase III trial of adjuvant radiochemotherapyversusobservationaftercurativegastriccancerresection.Journalofclinicaloncology:officialjournaloftheAmerican Society of Clinical Oncology.2012;30:2327-33
[16]. NoreroE,BustosM,HerreraME.etal.Postoperativeadjuvanttreatmentforgastriccancerimproveslong-termsurvivalaftercurative resection and D2 lymphadenectomy. Results from a Latin American Center. European journal of surgical oncology: the journal of the European Society of Surgical Oncology and the British Association of Surgical Oncology.2016;42:94-102

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