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A Case of Mucinous Adenocarcinoma of As Cending Colon Presenting As Parietal Wall Mass-A Case Report and Review

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ABSTRACT: Colorectalcancerintheyounghasapoor prognosiscomparedwithadultCRCmainly due to delayed diagnosis. Hence, early diagnosis based on a high degree of suspicion could be the most important factor in a more favorable prognosis, particularly in patients with risk factors. CRC is one of the predominant causes of malignancy related death worldwide. The common histological subtype of colorectal malignancy is adenocarcinoma, of which mucinous adenocarcinoma is a discrete subtype and is described by presence of abundant mucinous components that comprise at least 50% of the tumourvolume.
Wereportacaseof23yearoldfemalewiththecomplaint sofabdominalpainandloose stools for 6months with a firm mass of size 6*6cm with ill-defined margins in the right iliac fossa which was reported in CECT as diffuse circumferential wall thickening noted in ascending colon extending to hepatic flexure. Colonoscopy was done and biopsy was taken which showed features of high grade dysplasia. Exploratory laparotomy was done for the patient and was found to have a growth of 8*7cm in ascending colon extending to the peritoneumwith 5*5cm mucinous collection present in the peritoneum extending to lateral wall along paracolic gutter. It confirmed to be mucinous adenocarcinoma of ascending colon of stage $T_4N_0M_0$ by histopathologyreport.

I. INTRODUCTION:

Mucinous CRC varies from other adenocarcinoma in terms of clinical and histopathological characteristics. Mucinous CRC is found in 10%–20% of CRC patients and younger individuals are more common affected. Additionally, mucinous colorectal malignancy is frequently located intheproximalcolonthaninthedistalcolon.Furthermor e,mucinous CRC is frequently diagnosed when it is already in stage III and IV advanced stages, and usually presents with poor prognosis.

We present a report of a case study of a 25-year-old female with a right-sidedColonic Cancermucinoustype.Thiscase reporthasalso analyzed and reviewedtheparticularsoftheliteratureregarding Differentcharacteristics of the disease in the general population and particularly inpediatricpopulation

II. CASE PRESENTATION:

A 25year old female came with the complaints of abdominal pain and loose stools for a duration of 6months. The patient denied the history of vomiting, fever, abdominal distension, hematemesis,Melena.
Shehadnocomorbidityandnopasthistoryofchronicill nessordrugintake.Shehadhistoryofcaesareansection done6monthsback.Shehadfamilyhistory of uterine cancer in her mother. No other significant history. Her vitals were as follows: blood pressure: 110/70mmHg, pulse rate: 98 beats per minute, oxygen saturation: 99% and Temperature: 37.5Celcius. On examination, she was alert, pale and malnourished. Examination of the abdomen showed a firm mass of size 6*6cm with ill-defined margins, not mobile, palpable in the right iliac fossa. The mass was dull on percussion with surrounding area being resonant. Per rectal examination revealed normal sphincter tone and yellow fecal staining of the finger. Her basic blood investigations are as follows: haemoglobin-5.0gm/dl, total count- 9200cells/cubic millimeter, platelet-2.30lakh, haematocrit-19, blood sugar-86mg/dl, and urea- 28mg/dl, and creatinine-0.9 mg/dl, electrolytes Na-138mEq/L, and potassium-3.8mEq/L. X-ray abdomen showed no significant abnormality. Ultra sonogram of abdomen shows a focal dilated bowel loop in right iliac fossa with wall thickness measuring 9millimeter and adjacent echogenic collection measuring 4*2.2cm with features suggestive of intussusception/Tuberculosis. Contrast Enhanced Computed Tomography showed diffuse

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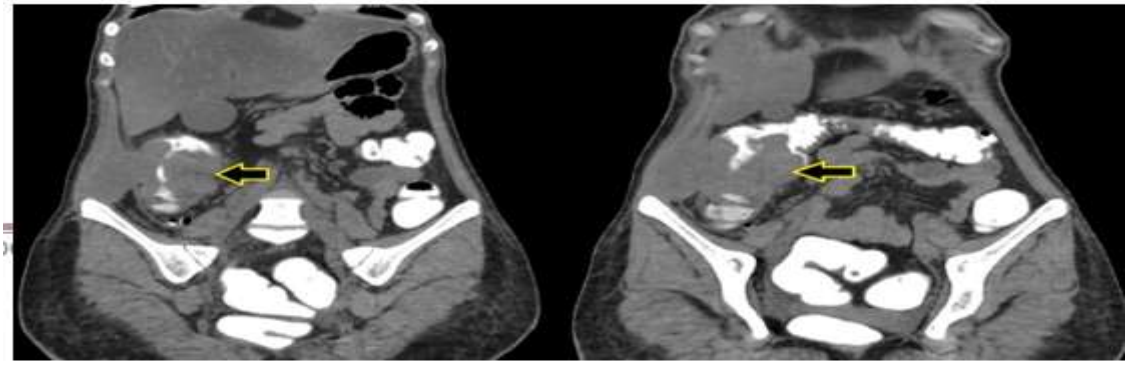
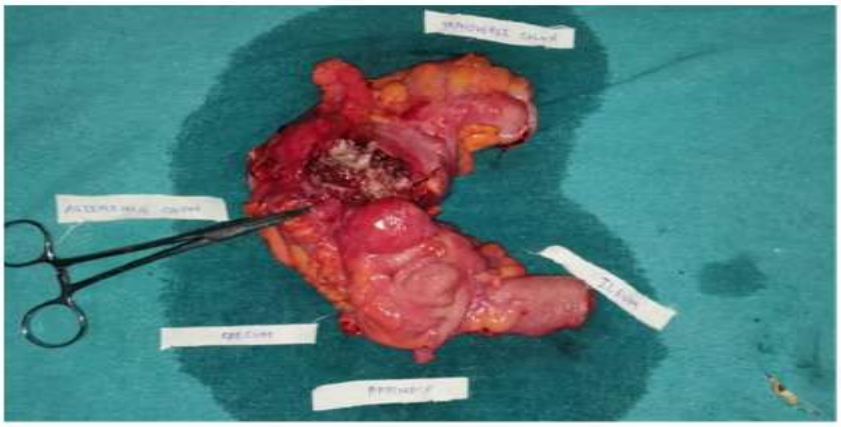
circumferential wall thickening noted in ascending colon with multiple enhancing and non-enhancing areas with maximum thickness of 1.3cm in ascending colon extending to hepatic flexure. Well defined peripherally enhancing collection measuring 5.7*4.1cm noted in the parietal wall abutting the thickened ascending colon. On Colonoscopy examination growth in the hepaticflexureextendingtoascendingcolonscopecouldnotbepassed beyondbecause of surrounding inflammation. Biopsy report proven out to be features in favor of high grade dysplasia.

Basedontheclinicalhistory,physicalexamination and radiological evaluation, ascendingcolongrowthwithhighgradedysplasiawasgivenasprovisionaldiagnosisand



Exploratory laparotomy was planned for the patient and biopsy. Intra-operatively growth of 8*7cm extending from ascending colon to parietal peritoneum and about 5*5cm mucinous collection present over parietal peritoneum extending to lateral wall.



Histopathologicalreportwas7*6*4cmtumorofmucinousadenocarcinomawithtumourinvadingtheserosaintopericolicsofttissuesandproximalanddistalmarginsfree of tumour with 24 regional lymph nodes free of tumour deposits. Stage:T4N0M0.

III. DISCUSSION:

Mucinouscancerisadiscreteformofcolorectalcancer(CRC)least common in colorectal malignancy patients.Mucinouscancervariesfromadenocarcinomaintermsofclinical and histopathological characteristics. It is extensively related to a poor response to treatment compared withadenocarcinoma.

Mucinous cancer lot often found in patients with colon malignancy than in those with rectal malignancy.

Mucinous cancer is well-known as a subtype of colorectal carcinoma more predominantly found in female patients and is mainly, but not absolutely, located in the proximal colon. Predisposing factors for mucinous cancer of colon is notclearly outlined.

Additionally, mucinous cancer associated in patients with inflammatory bowel diseases (IBD), such as Crohn's disease or ulcerative colitis, and in patients with an h/o pelvic or abdominal radiotherapy, patients are also more likely diagnosed with mucinous cancer.

Salient feature of Mucinous adenocarcinoma is the presence ofcopious mucous secretion involvingat least 50% of the tumour bulk. Mucinous cancer is a poorly differentiated advanced disease but still, grading varies subjectively, with or without a few defined criteria. The degree to which histopathological characteristics, such as growth pattern, tumour border aspect, location of mucous, and tumour cell: mucous ratio, influence outcomes is currently unfamiliar. Mucinous cancer has been associated with poor prognosisdue to the presence of a signet-ring cell component, but the thorough clinical significance of this factor needs to be evaluated.

Mucinous cancer mostly presents at an advanced stage of disease. A few possible explanations for this phenomenon are mucinous cancer more common in the proximal colon and mucinous cancers are of a fewer firm in consistency than adenocarcinomas, causing noticeable symptoms to arise only when the disease extents a more-advanced stage and also molecular pattern of mucinous carcinoma differs from adenocarcinoma of colon with more microsatellite instability.

However, mucinous cancers characterized by a markedly reduced rate of copy-number aberrations when compared with adenocarcinoma. In patients with mucinous cancer usually associated with BRAF mutation and are associated with an infiltrative pattern of tumour growth. KRAS and PIK3CA mutations also been found in patients with mucinous cancer in increased number. The MUC2 gene, which encodes mucin-2 (MUC-2), a protein that coats the epithelia of the intestines, airways and other mucous-membrane-containing organs is frequently overexpressed in patients with mucinous cancer, although this molecular feature is not exclusive to this form of disease. Overexpression of MUC-2 might protect against antitumor immune effectors by forming a mucous layer, thus promoting tumour development.

Mucinous cancers have tumour characteristics that may explain resistance to systemic therapy especially in the setting of advanced-stage disease, including microsatellite instability, less favorable intrinsic tumour characteristics and the formation of multiple metastases when compared with adenocarcinoma, not other specified (NOS). The effects of differences in tumour microenvironment (including in the mucous layer and vasculature) are currentlyhypothetical.

Mucinous cancer can be diagnosed preoperatively and high-resolution MRI, being more accurate than analysis of initial biopsy samples, has an important role in this regard. Documenting mucinous cancer using findings of both imaging and analysis of pathological specimens is important and has direct clinical implications.

Established mechanisms exist that might justify the relative resistance to chemotherapy and irradiation of patients with mucinous cancer compared with those with adenocarcinoma. This resistance to treatment is may be caused by a combination of a different molecular signature and therefore the markedly different physical properties of mucin-containing tumors compared with adenocarcinomas, which gives rise to distinct patterns of metastasis and substantially different patterns of vascularity and tumor growth.

Future enhancement in adjuvant and neoadjuvant therapy could be doable by different approaches that take into considerationof the unique physical properties. Furthermoreas molecular profiles of these tumors. Advances in tumour characterization will also have a vital role in the future, and can probablymodify the treatment approach.

When mucinous cancer diagnosed in the metastatic setting, the prognosis of the patients is generally worse than that of patients diagnosed with metastatic adenocarcinoma

A multidisciplinary approach become the quality to be taken care for the management of patients with CRC, and interdepartmental meetings should aim to raise awareness of the importance of histological subtypes where patients are managed using such an approach. For mucinous colorectal cancers, next considerations for different members of the multidisciplinary team have been suggested.

IV. CONCLUSION

Mucinous adenocarcinoma is a discrete subtype of colorectal cancer with the presence of mucinous secretion. Accounts for about 10- 20% of colorectal cancer. More common in young female, frequently located in proximal colon and diagnosed at advanced stage. More frequently diagnosed in patients with inflammatory bowel disease (Ulcerative Colitis and Crohn’s) and in patients

with history of pelvic or abdominal radiotherapy. It is considered poorly differentiated cancer. Associated with overexpression of mucin2 (MUC2) and mucin (MUC5AC) proteins. The prognosis of mucinous adenocarcinoma is very poor. Mucinous adenocarcinoma poorly responds to palliative or adjuvant chemotherapy. Presence of signet ring cell pattern in mucinous carcinoma has been associated with poor outcome.

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