Case report

Cytomegalovirus (CMV) as a rare cause of gastritis in a renal Transplant Recipient-A case study from Pakistan

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Abstract:

Cytomegalovirus (CMV) can cause wide spectrum of the diseases with large bowel been most commonly affected. However, it rarely effects the upper part of the alimentary canal including the esophagus and stomach. Here, we present to you a case of renal transplanted recipient with a post-transplant history of non-Hodgkin lymphoma evaluated for dyspepsia and was diagnosed to have CMV gastritis on histopathology.

Keywords: CMV,gastritis,renal transplant

Introduction:

Cytomegalovirus belongs to Herpes viridae family and is a double standard DNA virus less often seen in immunocompetent host.[1] It is mostly found in an immunocompromised individuals (solid organ transplantation,pregnancy,who are under chemotherapy,aging,those receiving high dose of steroids, and human immunodeficiency virus.[2] CMV can infect the gastrointestinal tract from mouth to anus. However the most common site involved by CMV in gastrointestinal tract is colon.Clinical features of CMV gastritis are epigastric pain, bleeding, fever and nausea.[3] Endoscopic features includes ulcers, nodules, diffuse erythema and erosions. CMV infection

manifests pathologically as an enlarged cell with viral inclusion bodies giving an owl's eye appearance microscopically.[4]

Gastrointestinal lymphomas account for 5-20% for extranodal lymphomas, [5, 6] with stomach been the most common site affected in approximately 90%, followed by ileum in 60-65%, jejunum in 20-25% and large bowel in 6-8 % respectively. Most of the lymphomas are histologically classified as non-Hodgkin diffuse B cell lymphoma.

Here, we present to you a case of a rare presentation of CMV as a cause of gastritis in a young male with a history of live-related renal transplantation and non-hodgkin B cell lymphoma post transplantation. This case has been submitted after an informed consent from the patient.

Case discussion:

A 34 years old male, with a history of end stage renal disease secondary to unknown cause underwent live related renal transplant in 2008.Post transplant he received induction therapy with steroids and was kept on maintenance immunosuppression in the form of cyclosporine 50 mg twice daily and azathiopurine 50 mg once at night.

Three years post-transplant, he presented with a history of epigastric pain and weight loss and subsequently underwent cross-sectional imaging in the form of CT scan abdomen which revealed a neoplastic lesion circumferentially involving the stomach, predominantly pylorus and body of stomach and extending up to the first part of duodenum resulting in intra luminal narrowing with loss of fat planes with the left lobe of liver. Multiple enlarged perilesional, paraaortic and aortocaval lymphnodes were also seen. Upper GI endoscopy done at that time showed a whitish, nodular, edematous growth extending from the body to the antrum through

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which scope gastroscope was negotiated with slight difficulty. Biopsy of the lesion revealed solid sheets of large sized atypical cells with atypical cells with scanty cytoplasm along with pleomorphic and hyperchromic nuclei. Immuno histochemical markers were applied which showed diffuse positivity of CD20,CD79a in atypical cells with CD3 positivity in the background. Features were suggestive of diffuse large B cell lymohoma.He received R-CHOP chemotherapy and was symptom free for six years.

Six years later, he again presented with similar complaints of epigastric pain, which was gradual in onset, localized, non -radiating, mild to moderate in intensity,aggrevated by meal intake and was associated with nausea. On examination there were no tenderness and gut sounds were audible. For these symptoms he had his upper gastrointestinal endoscopy done. Endoscopic examination revealed multiple erosions in the gastric body and antrum. The histopathological examination of the lesion showed epithelial cells with characteristic owl's eye esinophillic intranuclear inclusion bodies(**Figure-1**). Features were compatible with CMV infection. He received injection ganciclovir for 21 days and his symptoms improved there after.

Discussion:

Cytomegalovirus a double standard DNA virus had a high seroprevalnce of 40 to 100% in several populations.[5]It is transmitted via blood transfusions,saliva contaminated urine and sexual contact.[6] The spectrum of the disease caused by CMV is wide, with retinitis, gastrointestinal disease, or encephalitis been the most common manifestation.[7]Mostly, CMV infects immunosuppressed population such as those suffering from HIV [8,9] or with history of organ transplantation,[10] chronic steroids usage, or history of chemotherapy.

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CMV gastrointestinal disease can affect the gastrointestinal tract from the oral cavity to anal canal with colon been the most common site involved by CMV.[11] However, invasion of the esophagus and stomach is rarely reported. Previously, there are few cases of CMV gastritis which have been reported in immunocompetent patients.[12] To the best of our knowledge, this is the first case, South Asia, particularly from Pakistan, reporting the CMV as a cause of gastritis in an immunosuppressed population i.e. in a renal transplanted patient.

The most common reported sites of involvement in CMV gastritis are antrum,[11,13] fundus [14] and distal stomach.[15] The endoscopic patterns of CMV gastritis are variable, and include diffuse erythema, erosions, nodules, plaques, and ulcerations.[16,17] In our patient, endoscopy revealed multiple erosions noted in the gastric body and antrum.

The hallmark of CMV gastritis is presence of large cells containing the intra-nuclear and intra-cytoplasmic inclusions,surrounded by a clear halo(owl's eye) in biopsy .The other diagnostic test are monoclonal antibodies and Flouresence in –situ DNA hybridization(FISH). Our patient had characteristic histopathologcial findings consistent with CMV gastritis. The treatment of choice for the CMV infection is intravenous ganciclovir or oral valgancyclovir.[18] Our patient received intravenous gancyclovir therapy for 3 weeks and his symptoms improved.

Conclusion:

Gastritis is the rare manifestation of CMV infection and should be kept in mind while evaluating an immunosuppressed patient for epigastric pain and dyspepsia, especially transplanted population or those on high dose immunosuppression. Further evaluation should be performed

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by upper GI endoscopic examination and biopsies should be taken from the effected sites to establish the diagnosis.

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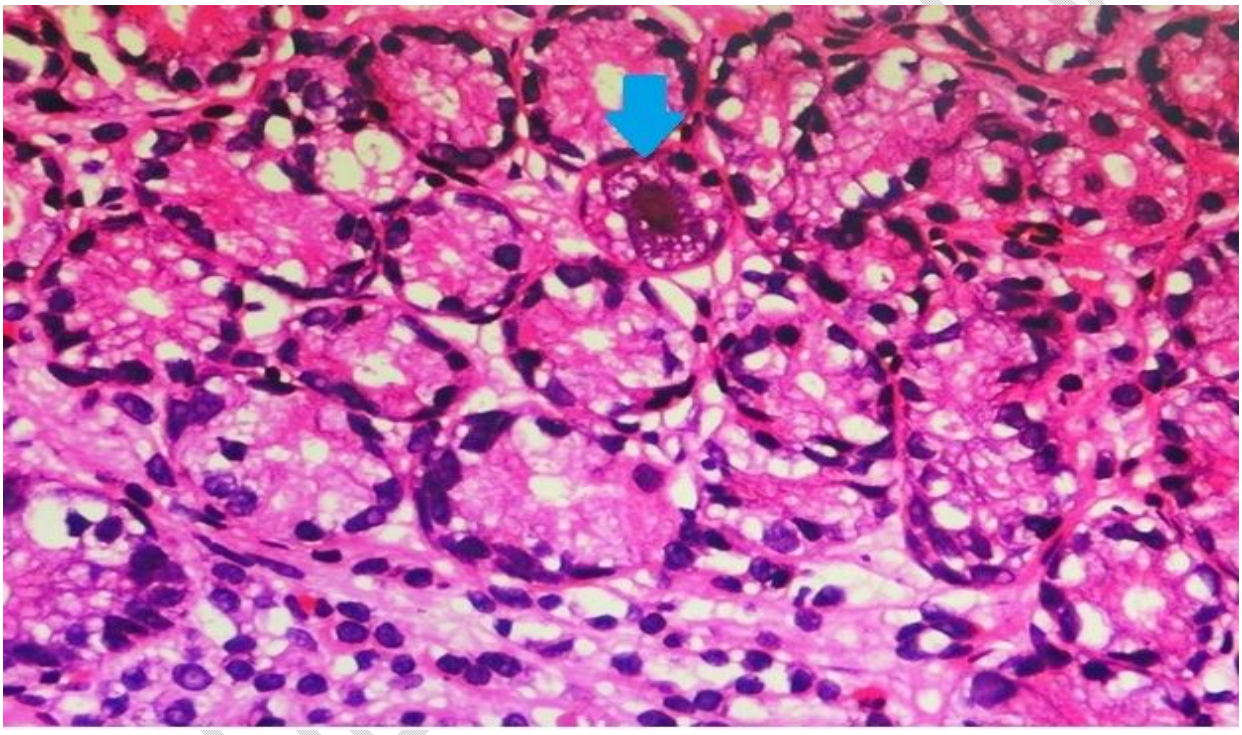

Figure-1: Hematoxylin and eosin (H&E) staining of gastric antral biopsy showing chronic inflammatory cells within the mucosa along with an enlarged cell with prominent intranuclear inclusion body (arrow)