

## **Gastric Ulcer with Cytomegalovirus Gastritis and Dieulafoy Lesion in an Immunocompetent Patient**

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**Abstract:** Cytomegalovirus infection is a common pathogen which rarely cause symptomatic disease in an immunocompetent patient. We present an immunocompetent 55 year old male with complaints of pain abdomen and loss of appetite. Upper gastrointestinal endoscopy and radiologic features were suggestive of malignancy and partial gastrectomy was performed. Histopathologic findings were diagnostic of cytomegalovirus infection. Incidentally, submucosa of the stomach showed Dieulafoy lesion. This case suggests that gastric ulcer with cytomegalovirus gastritis can mimic malignancy radiologically and on endoscopic evaluation.

**Keywords:** Cytomegalovirus, Malignancy, Immunocompetence, Dieulafoy's lesion.

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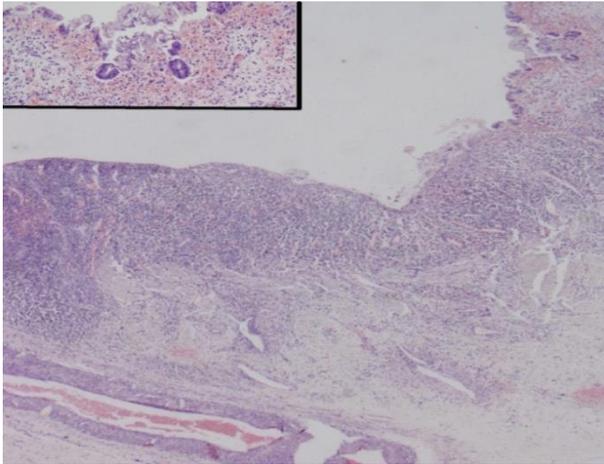
### **INTRODUCTION**

Cytomegalovirus (CMV) is a common human pathogen. Infection is frequently asymptomatic. Clinically significantly CMV infection usually occurs in immunodeficiency states. The authors report an apparently immunocompetent patient with signs of gastric ulceration and mucosal thickening clinically mimicking malignancy. Histology showed CMV gastritis with ulceration and underlying Dieulafoy lesion.

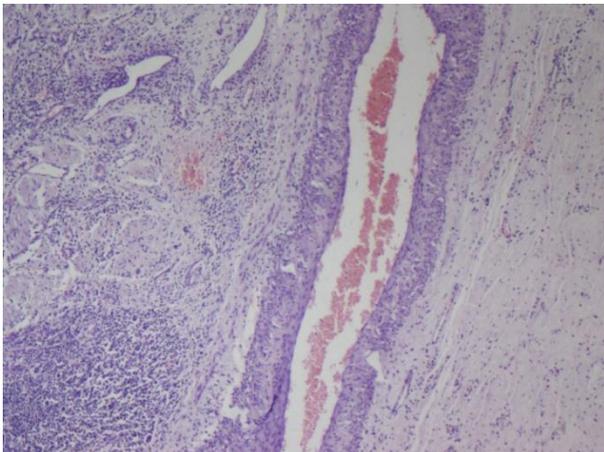
### **CASE REPORT**

A 55 year old male presented to the hospital with complaints of pain abdomen and loss of appetite since four months. Abdominal examination revealed tenderness in epigastrium. No organomegaly was noted. Examination of other systems were within normal limits. The patient was retrovirus negative and was not on any immunosuppressive medications. No comorbid illness including diabetes mellitus, inflammatory bowel disease or chronic kidney disease was identified. Upper gastrointestinal endoscopy showed thickening of pylorus. Contrast enhanced computed tomography of the abdomen showed wall thickening involving cardia and body of stomach along the greater and lesser curvature up to pylorus with regional lymphadenopathy which was suggestive of a neoplastic process. Intraoperatively, wall thickening was noted along the lesser and greater curvature of stomach. Partial gastrectomy along with gastro-jejunostomy and jejunostomy

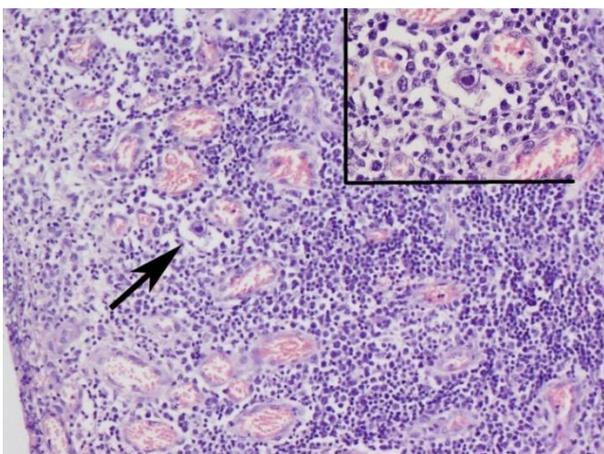
was done with a working diagnosis of gastric adenocarcinoma. The specimen was sent for histopathological examination. On gross morphologic examination, an ulcer was found along the greater curvature of stomach measuring 5X3 cm and was covered with necrotic material. Microscopy showed a large ulcer containing granulation tissue with dense lymphoplasmacytic infiltrate, oedema, and haemorrhage. Underlying submucosa showed a thick walled artery in the ulcer base (Fig. 1 & 2). Some endothelial and stromal cells in the granulation tissue showed karyomegaly and intranuclear eosinophilic inclusions suggestive of CMV inclusions (Fig. 3). Mesenteric lymph node showed reactive changes. No malignancy was identified. Post-operative period was uneventful. Patient was discharged on request. No further follow up was available.



**Fig. 1: Ulcerated gastric mucosa with granulation tissue and submucosal thick walled artery (H&E, X20) Inset: Gastric epithelium showing reparative changes (H&E, X200)**



**Fig. 2: Dieulafoy's lesion characterised by presence of thick walled artery in submucosa (H & E, X40)**



**Fig. 3: Stromal cell CMV inclusion (arrow) surrounded by granulation tissue (H & E, X200). Inset: (H&E, X400)**

## DISCUSSION

Cytomegalovirus infection commonly affects immunocompromised patients such as those with acquired immunodeficiency syndrome, malignancies, following transplantation and immunosuppressive therapy. It is rare in immunocompetent individuals [1]. The present case had no features suggestive of immunodeficient status.

Patients with CMV infection are usually asymptomatic or present with generalized systemic symptoms. Various organs that can be involved are eyes, lungs, brain, liver, spleen and the gastrointestinal tract. Gastric CMV can be asymptomatic without endoscopic abnormality or tissue destruction. The only evidence of CMV infection in such patients is the presence of intranuclear inclusions in the glandular epithelium. CMV infection in the stomach can also manifest as epigastric pain with hypertrophic and erosive gastritis and ulcerations [1-4]. These ulcers are usually shallow, uncommon complications being perforation, fistula formation and bleeding [1, 3]. The increased affinity of CMV to endothelial cells leading to vasculitis have been proposed in the pathogenesis of ulceration.

CMV intranuclear inclusions may be found in swollen endothelial and stromal cells in the vicinity of the ulcers, in highly vascularized granulation tissue and in the intact mucosa. Infected cells are found to get enlarged and contain large eosinophilic intranuclear inclusions. They are often, but not always surrounded by a clear halo. More basophilic intracytoplasmic inclusions are also found to be present but the former are much more conspicuous [5].

Radiologic and endoscopic features in these cases may also mimic malignancy [6]. The clinical diagnosis proffered the present case was malignancy and was corroborated by radiological features.

Dieulafoy lesion or caliber persistent artery is an uncommon but potentially life threatening cause of upper GI bleeding with high mortality rates. This lesion is under recognized due to lack of awareness. It is characterized by a submucosal, tortuous, histologically normal blood vessel with a large diameter ranging from 1-3 mm. The typical gross or endoscopic appearance consists of a 2 to 5 mm mucosal defect with a protruding vessel [7-9]. These lesions can be present anywhere in the gastrointestinal tract, stomach being the most common site. The aetiology of Dieulafoy lesion is still unclear, however, majority of these patients are elderly, with multiple comorbidities and on drugs like warfarin and non steroidal anti inflammatory drugs. They usually present with massive upper GI bleeding without preceding symptoms. The diagnosis can be made on endoscopy by visualization of a protruding

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vessel, arterial spurting or densely adherent clot to a small mucosal defect [9].

## CONCLUSION

In the present case, the vascular anomaly was an incidental finding in the gastrectomy specimen. No association between CMV infection and Dieulafoy lesion has been reported in literature till date.

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