

# Cytomegalovirus induced pseudotumor of the colon in a renal transplanted patient

Syed Mudassir Laeeq<sup>1</sup>, Zain Majid<sup>1\*</sup>, Rajesh Mandhwani<sup>1</sup>, Nasir Hasan Luck<sup>1</sup>, Muhammed Mubarak<sup>2</sup>

<sup>1</sup>Department of Hepato-gastroenterology, Sindh Institute of Urology & Transplantation, Karachi, Pakistan

<sup>2</sup>Department of Histopathology, Sindh Institute of Urology & Transplantation, Karachi, Pakistan

## ARTICLE INFO

**Article Type:**  
Case Report

**Article History:**  
Received: 26 December 2016  
Accepted: 14 February 2017  
ePublished: 27 February 2017

**Keywords:**  
Immunocompromised  
Cytomegalovirus  
Pseudotumor  
Ganciclovir  
Renal transplant  
Liver disease

## ABSTRACT

Cytomegalovirus or CMV is a common viral pathogen that infects the gastrointestinal tract and is seen in various forms in immunocompromised individuals. It is often isolated from individuals having weakened or suppressed immune system because of either human immunodeficiency virus (HIV) infection, transplantation, malignancies or immune suppressing medications. Here we describe a case of gastro-intestinal CMV infection in a renal transplant patient that had presented as colonic pseudo tumor. As CMV induced pseudotumors may respond to medical therapy, physicians treating immunosuppressed individuals should be wary of it for better management of the condition.

### *Implication for health policy/practice/research/medical education:*

We present a case of a 42-year-old kidney transplanted male, who was on immunosuppressive therapy and had gastro-intestinal symptoms. Later on during workup he was found to have cytomegalovirus (CMV) induced pseudotumor of his gastrointestinal tract. Physicians involved in the care of immunosuppressed individuals should be aware of CMV related infections particularly CMV induced pseudotumor since it responds medically.

*Please cite this paper as:* Laeeq SM, Majid Z, Mandhwani R, Luck NH, Mubarak M. Cytomegalovirus induced pseudotumor of the colon in a renal transplanted patient. J Nephroarmacol. 2017;6(2):62-64. DOI: 10.15171/npj.2017.05.

## Introduction

As common viral pathogens affecting the digestive tract, the clinical and radiographic findings of CMV related infections, namely esophagitis, gastritis, enteritis, and colitis have been well documented in immunocompromised patients (1,2).

## Case Presentation

A 42-year-old male, diagnosed as end-stage renal disease (ESRD) in 2005 and on renal replacement therapy since the past 4 years, underwent renal transplant in 2009. He was on standard triple drug immunosuppressive medications (prednisolone, azathioprine, cyclosporine). Initially he remained asymptomatic for 2 year after the kidney transplantation but later on was admitted with complaints of loose stools, which occurred more than 5 times per day, were watery in consistency, associated with tenesmus and

containing fresh red colored blood. Significant weight loss of around four kilograms in 5 months was also noted.

His general physical examination was unremarkable except for blood stained finger on digital rectal examination. On abdominal examination, there was mild tenderness in epigastric region. Gut sounds were audible. Pulmonary, cardiovascular and neurological examination was unremarkable.

Lower gastrointestinal endoscopy revealed multiple polyps in distal sigmoid and proximal rectum (Figure 1), showing bleed to touch mucosa. Multiple biopsies were taken and the histological examination of these biopsies revealed granulation tissue formation and mixed inflammatory cell infiltrate. Occasional endothelial cells show enlarged nuclei with inter-nuclear inclusions compatible with CMV (Figure 2).

His treatment consisted of intravenous ganciclovir for

\*Corresponding author: Zain Majid, Email: Zain88@Hotmail.com

5 weeks. Endoscopy was repeated after 6 weeks, which revealed a persistent mass in his distal sigmoid along with slight decrease in its size. Repeated biopsies tested negative for CMV. During the course of illness, he was found to have hepatosplenomegaly and ascites. His HCV RNA became detectable, which was negative at the time of renal transplant in 2009. He later on developed abdominal distention due to ascites. On further investigations, patient was diagnosed as decompensated chronic liver disease secondary to Hepatitis C virus with a Child-Turcotte-Pugh score (CTP class B9). The patient had a protracted course and his paralytic ileus did not settle and he died because of sepsis.

### Discussion

CMV infection of the digestive tract is of often seen in immuno-compromised patients, who either have a history of HIV infection or are on immunosuppressive drugs, consisting post-transplant patients. It can infect any part of the gastrointestinal tract from the esophagus to the rectum, either diffusely or in an isolated form and can cause colitis, esophagitis, and gastritis (3). In our patient lesions were found in sigmoid colon, causing colitis.

Pathogenesis of such CMV induced pseudotumor remain unknown. Bowel wall thickening that is seen in patients having CMV infection is histologically due to submucosal edema, granulation tissue along with fibrosis. The histological characteristics of a pseudotumor are inflammatory infiltration in the mucosa and submucosa layers, inclusion bodies mostly in endothelial cells along with extensive fibrosis, granulation tissue, and chronic inflammation (4). Histological examination of our patient revealed the same findings.

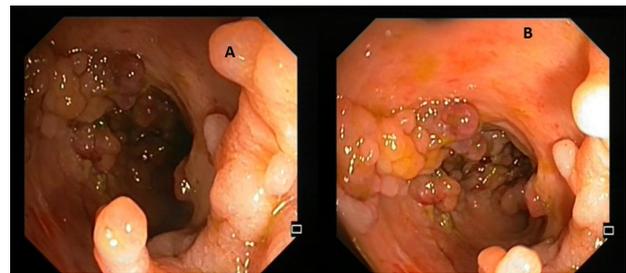
All these changes may cause a gastrointestinal inflammatory mass that might cause obstruction of the bowel, mimicking an exophytic neoplastic luminal mass lesions on barium studies (5). In our case, no such obstruction was seen however bleeding from rectum was noted, which is a rarity with these type of lesions. For gastrointestinal mass lesions in the transplant population, CMV induced pseudotumor should be included in the list of possible differential diagnosis (6). These tumors often responds to antiviral therapy. In our case with the treatment of the patient, the CMV infection did resolve, however the pseudotumor persisted. Surgery's role as a treatment option for CMV-induced mass is still not clear and the role of immune reconstitution in this group of patients is still under investigation (7,8). Larger studies are needed to further enhance our knowledge about this entity and to outline treatment guidelines.

### Conclusion

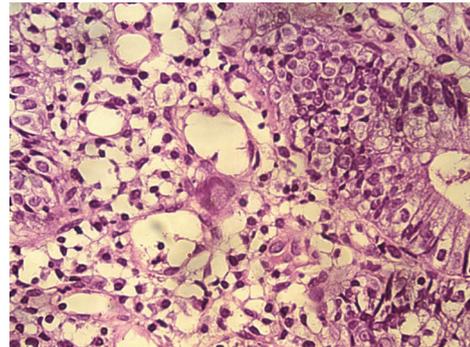
Gastrointestinal mass lesions in transplanted individuals should include CMV induced pseudotumor in the list of possible differential diagnosis.

### Authors' contribution

SML and NHL; managed the patient. ZM and RM; wrote



**Figure 1.** Endoscopic images showing multiple polyps in the sigmoid colon.



**Figure 2.** Photomicrograph of sigmoid biopsy high power view showing inclusion bodies suggestive of CMV colitis ( $\times 400$ , PAS).

the report. MM; responsible for histological diagnosis and images.

### Conflicts of interest

The authors declare no conflict of interest.

### Ethical consideration

Informed consent was obtained from the patient.

### Funding/Support

None.

### References

- de Andrade LG, Rodrigues MA, Romeiro FG, Carvalho MF. Gastrointestinal cytomegalovirus disease in renal transplant recipients: a case series. *Clin Transplant*. 2012;26:345-50. doi: 10.1111/j.1399-0012.2011.01514.x.
- Kaul A, Bhaduria D, Agarwal V, Ruhela V, Kumar A, Mohendra S, et al. Seronegative invasive gastrointestinal cytomegalovirus disease in renal allograft recipients a diagnostic dilemma! - Tissue PCR the saviour? *J Med Microbiol*. 2015;33:447-52. doi: 10.4103/0255-0857.158596.
- Ishaque M, Rashid R, Mubarak M. Gastrointestinal complications in renal transplant recipients detected by endoscopic biopsies in a developing country. *Indian J Gastroenterol*. 2015;34:51-7. doi: 10.1007/s12664-015-0537-8.

4. Jacob S, Zayyani NR. Cytomegalovirus colitis masquerading as rectal malignancy in an immunocompetent patient. *Indian J Pathol Microbiol.* 2015;58:80-2. doi: 10.4103/0377-4929.151195.
5. Teixidor HS, Honig CL, Norsoph E, Albert S, Mouradian JA, Whalen JP. Cytomegalovirus infection of the alimentary canal: radiologic findings with pathologic correlation. *Radiology.* 1987;163:317-23.
6. Reggiani Bonetti L, Barresi V, Bertani A, Maccio L, Palmiere C. Human cytomegalovirus induced pseudotumor of upper gastrointestinal tract mucosa: effects of long-term chronic disease? *J Med Virol.* 2015;87:1041-5. doi: 10.1002/jmv.24152.
7. Kotton CN, Kumar D, Caliendo AM, Asberg A, Chou S, Danziger-Isakov L, et al. Transplantation Society International CMV Consensus Group. Updated international consensus guidelines on the management of cytomegalovirus in solid-organ transplantation. *Transplantation.* 2013;96:333-60. doi: 10.1097/TP.0b013e31829df29d.
8. Hodson EM, Ladhani M, Webster AC, Strippoli GF, Craig JC. Antiviral medications for preventing cytomegalovirus disease in solid organ transplant recipients. *Cochrane Database Syst Rev.* 2013:CD003774. doi: 10.1002/14651858.CD003774.pub4.

**Copyright** © 2017 The Author(s); Published by Society of Diabetic Nephropathy Prevention. This is an open-access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.