

Clinical features of cytomegalovirus gastritis after heart transplantation

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Background

Cytomegalovirus (CMV) causes significant morbidity in organ transplant recipients. The aim of the study was to describe the endoscopic and clinical features of CMV gastritis after heart transplantation.

Methods

Between 1996 and 2017, 228 patients underwent heart transplantation at our hospital. Among them, 79 patients with gastrointestinal symptoms underwent esophagogastroduodenoscopy.

Results

CMV gastritis was diagnosed pathologically in ten patients (12.6%). CMV gastritis was diagnosed by endoscopic biopsy in patients with gastrointestinal symptoms between 39 and 103 days after heart transplantation. Endoscopic findings included erosion or ulcer. Erosion was observed in four of the ten patients with CMV gastritis and in 24 of the 69 control patients ($P > 0.05$). Ulcer was observed in six of the ten patients with CMV gastritis and in 10 of the 69 control patients ($P = 0.004$). Findings of biopsies from the areas of erythema, nodularity, and atrophy were not associated with CMV gastritis. The rates of CMV antigenemia were not statistically different between the two groups, 40% in patients with CMV gastritis and 23.2% in patients with non-CMV gastritis ($P = 0.468$). Symptoms included epigastric pain or soreness, nausea, and dyspepsia. All patients were treated with ganciclovir, and 90% of these patients had improved symptoms and endoscopic features.

Table 1. Characteristics of patients with and without CMV gastritis

Variables		Patients with CMV gastritis (n = 10)	Patients without CMV gastritis (n = 69)	
Median age (range)		60 (19-72)	52 (5-77)	
Gender	Male/female	5/5	46/23	
Underlying disease	DCMP	7	48	
	ICMP	1	9	
	RCMP	1	3	
	HCMP	0	3	
	Valvular disease	1	4	
	Myocarditis	0	1	
	Pulmonary hypertension	0	1	
Gastrointestinal symptoms on EGD	Epigastric pain	1	17	
	Epigastric soreness	2	8	
	Nausea/Vomiting	2	8	
	Diarrhea	1	1	
	Abdominal discomfort	2	3	
	Dyspepsia	2	6	
	Melena	0	3	
	Dysphasia	0	4	
	Others	0	19	
	Median onset of CMV gastritis	Days (range)	59 (39-103)	NA
	CMV antigenemia on EGD	Positive/negative/not done	4/6/0	16/52/1
	Involved organ in CMV disease	Esophagitis/duodenitis/colitis/pneumonia/retinitis	0/0/0/1/0	2/0/0/0/0

Figure 2. Prevalence of CMV gastritis after cardiac transplantation

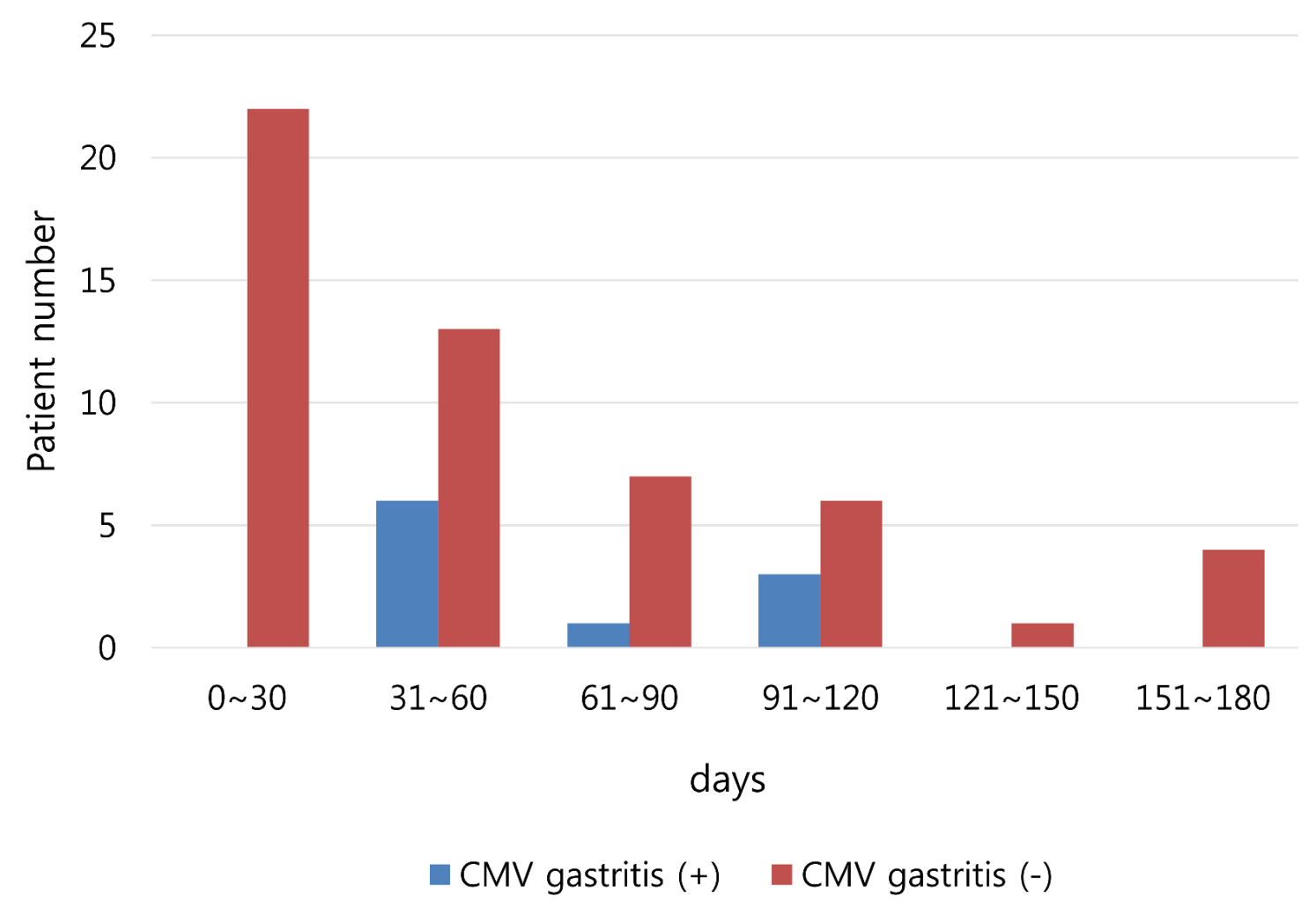


Figure 3. A representative case with CMV gastritis after heart transplantation (case 2)

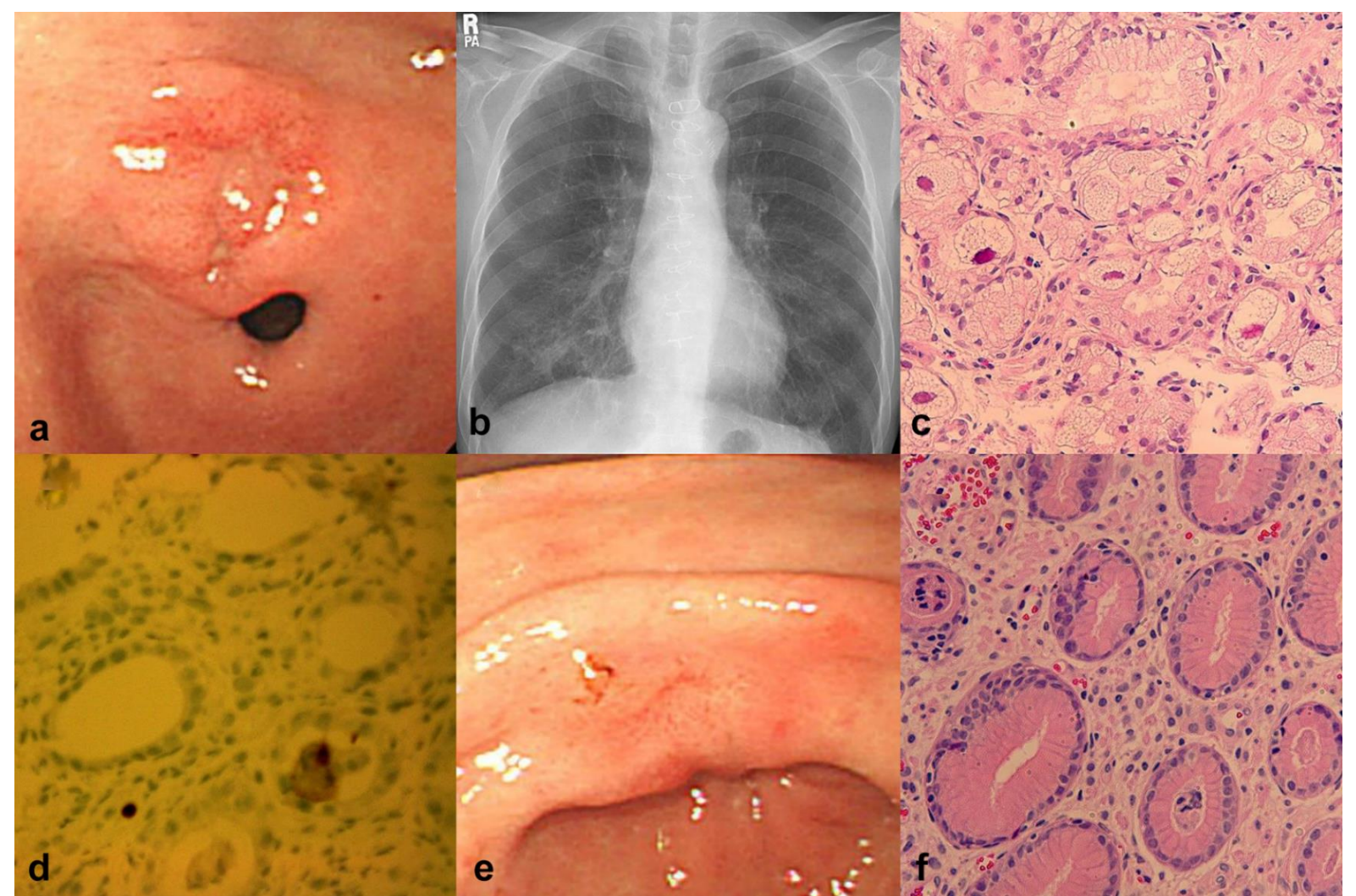


Figure 1. Endoscopic appearance of CMV gastritis after heart transplantation

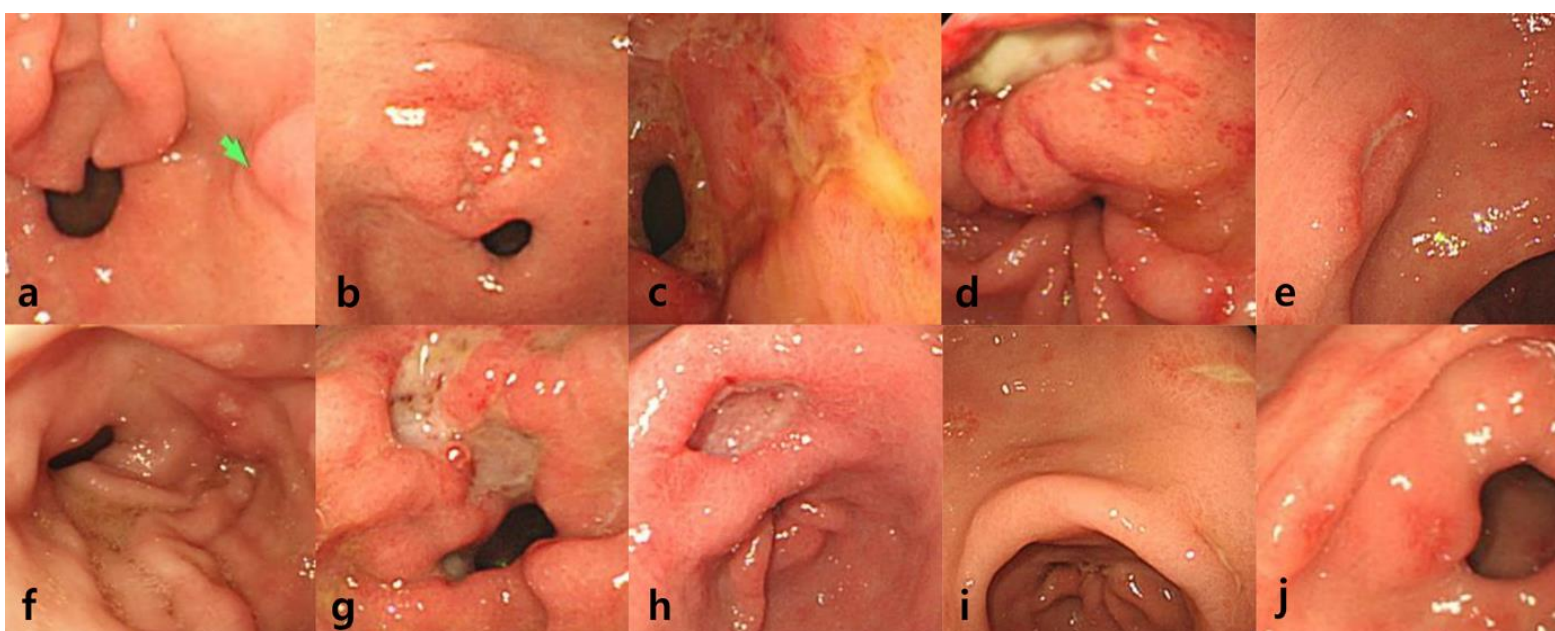


Table 2. Clinical features of CMV gastritis

	Demographics	Onset (d)	Gastrointestinal symptoms	Endoscopic feature	CMV antigenemia on EGD	Response to ganciclovir			Outcome	
	Age (yr), gender, diagnosis					Symptoms	Endoscopic response	CMV antigenemia assay	Outcome	Cause of death
Case 1	37, female, DCMP	96	nausea/vomiting	erosion	negative	continued	none	NA	alive	NA
Case 2	60, male, valvular disease	100	abdominal discomfort	erosion	negative	improved	improved	NA	death	pneumonia
Case 3	68, female, DCMP	44	epigastric soreness	ulcer	positive	improved	improved	turned negative	alive	NA
Case 4	56, female, RCMP	42	nausea/vomiting	ulcer	negative	improved	improved	NA	alive	NA
Case 5	72, female, DCMP	70	epigastric soreness	ulcer	negative	improved	improved	NA	alive	NA
Case 6	66, male, ICMP	49	dyspepsia	erosion	negative	improved	improved	NA	alive	NA
Case 7	42, male, DCMP	39	abdominal discomfort	ulcer	positive	improved	improved	turned negative	alive	NA
Case 8	59, male, DCMP	103	dyspepsia	ulcer	negative	improved	improved	NA	alive	NA
Case 9	64, female, DCMP	58	epigastric pain	ulcer	positive	improved	improved	turned negative	alive	NA
Case 10	19, male, DCMP	60	diarrhea	erosion	positive	improved	improved	turned negative	alive	NA

Conclusions

CMV gastritis occurred between one month and four months after heart transplantation. Erosion and ulcer are useful indicators for the diagnosis of CMV gastritis following heart transplantation.