Ectopic Varices in Colonic Stoma: MDCT Findings

Ectopic stomal varices are an unusual cause of gastrointestinal hemorrhage. The term “ectopic stomal varices” means abnormally dilated veins that have developed in the stomal mucosa. We describe the 2D reformatted and 3D volume rendered images by MDCT in a patient with an episode of acute bleeding from the colonic stoma. This case indicates that the 2D reformatted and 3D volume rendered images are useful to detect this rare complication of portal hypertension, and they help to tailor adequate treatment for the patients with bleeding from stomal varices.

Varices are most commonly noted in the esophagus and gastric fundus, and they may have ectopic locations such as duodenum, jejunum, ileum, colon, anorectum, retroperitoneum and rarely at the site of colostomy or ileostomy. Ectopic varices are an uncommon cause of gastrointestinal hemorrhage, but they account for up to 5% of all variceal bleedings (1).

Bleeding from stomal varices has been reported in up to 20% of the patients suffering with chronic liver failure with permanent stoma (2). However, the diagnosis of stomal varices is difficult because bleeding from stoma may also be associated with lower gastrointestinal bleeding.

The purpose of this report is to describe the 2D reformatted and 3D volume rendered images of a patient with an episode of acute bleeding from stomal varices. To the best of our knowledge, the 2D reformatted and 3D volume rendered images by MDCT for visualization of ectopic stomal varices have not been previously reported in the medical literature.

CASE REPORT

A 66-year-old man was admitted to our hospital for evaluation of hematochezia into his colostomy bag. He had a history of abdominoperineal resection for rectal cancer that was performed seven years earlier and he also had alcoholic liver cirrhosis (Child class C). On the physical examination, the conjunctivae were anemic, but the abdomen was flat. The pulse was 104 beats per minute and it was regular, the temperature was normal and the blood pressure was 90/50 mmHg. The laboratory values revealed decreased hemoglobin levels (7.2 g/dl), a decreased hematocrit (19.9%) and a decreased platelet count (61,000 /µl). The focus of bleeding was thought to be in the superior area of the peristomal skin. Gastroscopy and colonoscopy were performed to exclude that the focus of bleeding was of an intraluminal origin, and the examinations did not reveal any sign of acute bleeding.

The computed tomography images of the abdomen and pelvis were acquired using a...
16 detector multislice helical scanner (Sensation 16; Siemens, Germany). The patient was placed in a supine position, and intravenous contrast was infused at a rate of 3 cc/sec, and the imaging performed after a 75 second delay. The study was performed using 120 kV, 140 mA, 0.75 mm beam collimation and a 10 mm per rotation table speed. The images were obtained from the region between just above the level of the diaphragm and immediately below the pelvis.

All the images were stored in the DICOM (Digital Imaging and Communications in Medicine) format. The digital data were sent to a PACS server (z view; Infinitt, Seoul, Korea), and the transverse source images were transferred to a computer workstation that used commercially available

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**Fig. 1.** A 66-year-old-man with ectopic varices in the colonic stoma.
**A, B.** The 2D reformatted axial and sagittal images through the abdomen show thickening of the peristomal skin (arrows) with the adjacent rich collateral vessels (arrowheads).
**C, D.** Frontal 3D volume rendering images illustrate stomal varices (double white arrows) and the tortuous collateral vessels (white arrows). The collateral vessels drain into the inferior mesenteric vein (black arrow) and the left inferior epigastric vein (arrowhead).
software (Rapidia, Infiniti, Seoul, Korea) for 2D multiplanar
reformations and 3D volume rendering images.

On the 2D reformatted axial and sagittal images, the
stoma and the peristomal skin were thickened with the
adjacent collateral vessels filled (Figs. 1A, B). The tortuous
collateral vessels that drained into the portal vein through
the inferior mesenteric vein were well demonstrated on the
3D volume rendering images (thick slab coronal view, Figs.
1C, D). Other collateral vessels were also observed inferiorly,
and these vessels drained to the left inferior epigastric
vein.

Suture ligation of the tortuous engorged mesocolonic
vessels was performed at the superior aspect of the colonic
stoma. The bleeding stopped after the procedure, and the
patient showed stable vital signs. Although further
procedures such as Transjugular Intrahepatic Portosystemic
Shunt (TIPS) were needed to manage the recurrent
bleeding, the patient and his family refused this procedure.
Therefore, the patient was discharged with a warning that
rebleeding could occur.

DISCUSSION

Ectopic varices account for between 1% and 5% of all
variceal bleedings (1). Typically, they are associated with
portal hypertension, and the varices can develop almost
anywhere in the gastrointestinal tract. Although ectopic
varices can occur at several sites, bleeding from ectopic
varices is most commonly found in the duodenum and at
sites of previous bowel surgery, including the stoma (3).

Bleeding from stomal varices has been noted in up to
25% of patients with chronic liver disease (liver cirrhosis)
with permanent stoma (2). However, the diagnosis of
stomal varices is difficult because stomal bleeding cannot
be distinguished from gastrointestinal bleeding. Stomal
varices are most commonly encountered in patients with
history of colostomy or ileostomy for treating inflamma-
tory bowel disease or cancer, and particularly in patients
who had proctocolectomy preformed for chronic ulcerative
colitis in association with primary sclerosing cholangitis (4).
Less often, stomal varices occur in association with ileal
dividuit (5). Ectopic varices typically develop gradually
after the initial operation (6). Stomal varices are character-
ized by a purplish hue around the stoma.

The management of ectopic stomal variceal bleeding
varies widely from simple local measures such as direct
pressure dressing, sclerotherapy, epinephrine-soaked gauze,
gel foam or suture ligation to surgical interventions such as
revision of the stoma, portosystemic shunts or liver
transplantation. Moreover, the application of radiological
interventions for the treatment of esophageal varices has
been extended in recent years to symptomatic stomal
varices (3). The use of TIPS to treat ectopic varices was
first reported in 1994 for patients with intestinal varices.
TIPS is currently considered to be the treatment of choice
when dealing with stomal varices in patients with liver
cirrhosis and portal hypertension (7). Moreover, because
many patients with stomal varices are candidates for liver
transplantation, TIPS is preferred to surgical portosystemic
shunt.

In our case, the stomal varices were easily detected by
the contrast enhanced 2D reformatted and 3D volume
rendering images during the portal venous and equilibrium
phases of contrast administration. The postprocessing time
required for the 2D reformatted and 3D volume rendering
images is minimal. Once the axial slices become available
at the workstation, a skilled operator can produce the 2D
reformatted and 3D volume rendering images in approxi-
mately 10 minutes, with commercially available software
and using the preset protocols.

Considering the incidence of ectopic stomal varices, the
stoma should be included in the CT evaluation of liver
cirrhosis patients with permanent stoma. Knowledge of this
entity is important when providing care for patients with
portal hypertension, because the diagnosis and manage-
ment of ectopic varices differ from those of esophagoga-
stric varices. Therefore, the 2D reformatted and 3D volume
rendering images by MDCT are a useful modality for the
evaluation of ectopic stomal varices because MDCT
provides good quality images and it is a promising
noninvasive imaging tool for the morphologic assessment
of abdominal vasculature, including the arterial system as
well as the portal vein and its tributaries.

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