

## Video capsule endoscopy findings in subacute superior mesenteric vein thrombosis

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### Abstract

**Background:** Subacute superior mesenteric vein thrombosis is a rare ischemic intestinal disease which is often characterized by delayed diagnosis due to obscure clinical picture.

**Case report:** A 67-year-old woman who presented chronic abdominal pain with mild nausea due to superior mesenteric vein thrombosis was submitted to video capsule endoscopy. We describe, for the first time, the video capsule endoscopy findings in this patient.

**Conclusion:** We emphasize the role of this new technology in the diagnosis of suspected ischemic intestinal diseases. Hippokratia 2011; 15 (3): 275-277

**Key words:** video capsule endoscopy; subacute superior mesenteric vein thrombosis; ischemic intestinal disease

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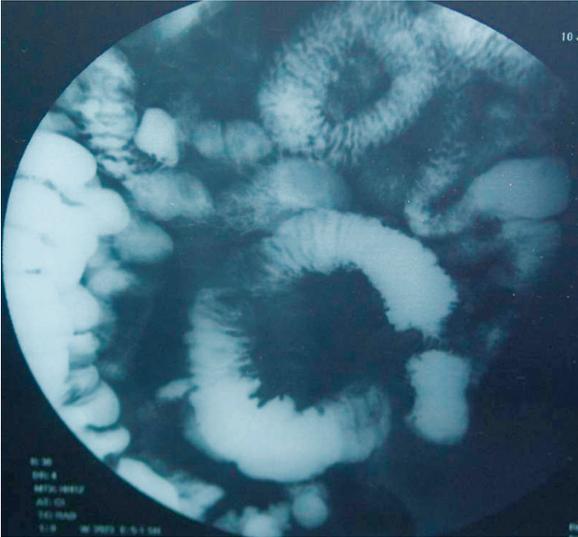
Mesenteric venous thrombosis (MVT) accounts for 5-15% of all intestinal ischemic events<sup>1</sup>. When no etiologic factor is found, patients are said to have idiopathic mesenteric venous thrombosis. Secondary thrombosis is most commonly due to hereditary or acquired hypercoagulation disorders; G20210A prothrombin mutation, homozygous methyl tetrahydrofolate reductase (MTHFR) gene mutation, hyperhomocysteinemia, deficiency of protein C, protein S, anti-thrombin III and factor V Leyden have all been implicated in MVT pathogenesis<sup>1-4</sup>. A variety of malignancies and inflammation disorders, such as inflammatory bowel disease or pancreatitis, should also be considered as secondary causes<sup>1-3</sup>. More recently a mutation in the JAK2 gene, the V617F, has been found in up to 59% of patients with deep splachnic vein thrombosis, many of whom had little other clinical evidence of a chronic myeloproliferative disorder<sup>5</sup>. MVT can also occur postoperatively, as a result of trauma, cirrhosis, portal hypertension, previous endoscopic sclerotherapy for varices or use of oral contraceptives<sup>1</sup>. Clinically, thrombosis can present acutely, subacutely or chronically as a segmental disease, usually affecting the small intestine rather than the colon.

We describe the findings of video capsule endoscopy (VCE) performed on a 65-year-old woman with subacute superior MVT, giving emphasis on the horizons that open with this new diagnostic modality in the diagnosis of intestinal ischemic disorders.

### Case presentation

A 67-year-old woman was referred to our department for capsule endoscopy because small intestine examination with enteroclysis showed thickening of the bowel

wall, probably due to edema, with separation of loops (Figure 1), findings suggesting lymphoma. The patient was suffering from a dull abdominal pain associated with mild nausea during the last three months. Upper and lower bowel endoscopy was unremarkable. Laboratory examination was prominent for C-reactive protein (7.8mg; normal value <0.5mg/dl) and erythrocyte sedimentation rate (63mm/h; normal value <20mm/h). VCE showed a diffuse edematous and swollen mucosa with indistinct villi (Figure 2) and in some segments of the jejunum and upper ileum purple colored edematous mucosa (Figure 3). Abdominal computed tomography (CT) revealed dilatation of the superior mesenteric vein with surrounding edema, leading to suspicion of an old thrombus (Figure 4). Doppler sonography confirmed CT findings with the thrombus to be considered old due to the presence of high echodensity. There was no family history of peripheral thrombophlebitis, pulmonary embolism or thrombosis. A search for a precipitating condition did not reveal any evidence of presence of an acquired or hereditary hypercoagulopathy. Specifically, investigation for factor V Leyden and prothrombin mutations, antithrombin III, protein C and S deficiencies, hyperfibrinogenemia, von-Willebrand factor (vWF), lupus anticoagulant, anti-2-microglobulin, anti-cardiolipin and antiphosphatidylserin antibodies, hyperhomocysteinuria and postmenopausal hormone replacement therapy was negative. Also Ham test and sucrose lysis test for paroxysmal nocturnal hemoglobinuria were both negative. The patient refused surgical intervention and started coumarin therapy, presenting gradual improvement of her clinical picture. Thereafter the patient was referred to the haematologic department for further investigation and surveillance.



**Figure 1:** Enteroclysis showing thickening of the small intestinal wall with separation of loops.



**Figure 2:** Video capsule endoscopy showing a diffuse edematous and swollen jejunal mucosa with indistinct villi



**Figure 3:** Video capsule endoscopy showing a purple colored edematous mucosa in the upper ileum.



**Figure 4:** Abdominal computed tomography demonstrating an old thrombus (arrow) in the superior mesenteric vein.

### Discussion

MVT can be acute, subacute or chronic. Acute MVT is diagnosed in patients whose symptoms begin suddenly, subacute in those who have abdominal pain for days or weeks without bowel infarction, as in our patient, and the chronic form in those who present with complications of portal vein or splenic vein thrombosis such as esophageal variceal hemorrhage<sup>1</sup>.

Clinical manifestations depend largely on the extent of the thrombus, the size of the vessel or vessels involved and the depth of bowel-wall ischemia<sup>3</sup>. When ischemia is restricted to the mucosa, the manifestations consist of abdominal pain and diarrhea, while transmural ischemia leads to necrosis with gastrointestinal bleeding, perforation and peritonitis<sup>3</sup>. Diagnosis of subacute superior

MVT is often delayed because the symptoms are nonspecific. Moreover, when no known predisposing factors are present, the diagnosis may become even more difficult and therefore delayed, which results in significant morbidity and mortality<sup>1</sup>. During the last decade the availability of advanced imaging procedures such as Doppler ultrasound, CT and magnetic resonance imaging (MRI) allowed prompt diagnosis of MVT in a large number of clinical settings, ranging from fortuitous asymptomatic occlusions to acute abdomen<sup>6,7</sup>. The possibility of diagnosing MVT earlier results in a more prompt and effective therapy that translates in decreasing morbidity and mortality<sup>1,3</sup>.

Our case is very intriguing due to the demonstration, for the first time, of endoscopic findings by VCE in suba-

cute superior MVT. VCE represents a major advance in the investigation of small bowel diseases, allowing non-invasive visualization of the small intestine<sup>8</sup>. The indications for VCE are constantly expanding and evolving and currently include, among others, obscure gastrointestinal bleeding, iron deficiency anemia, non-stricturing Crohn's disease, celiac disease, polyposis syndromes, suspicion of small bowel tumors<sup>9</sup> and abnormal small bowel radiology<sup>8</sup>. We believe that VCE might occupy a preferential place in the diagnosis of ischemic intestinal disorders, though the current evidence is insufficient to establish whether it could be used as the diagnostic test of first choice. The endoscopic spectrum of intestinal ischemia presentation includes edema, ulcers with segmental, circumferential or "snail-track" like appearance during the healing process and bleeding<sup>10</sup>. Although VCE suffers from some drawbacks, i.e. a long time is required for the examination, it does not permit precise localization of the lesion, biopsies cannot be taken, treatment cannot be applied and it is contraindicated in patients with stenosis, we believe that additional studies should be called to verify the role of VCE in ischemic intestinal disorders.

### Conclusion

In conclusion, the VCE findings of our case emphasize the new horizons that open with the introduction of this new technology in clinical practice and especially in the diagnosis and probably in the management of ischemic intestinal disorders.

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