Extensive small-bowel Crohn’s disease detected by the newly introduced 360° panoramic viewing capsule endoscopy system

Chronic, nonbloody diarrhea may represent a diagnostic challenge in patients with inconclusive findings after standard clinical work-up [1]. In this setting, small-bowel capsule endoscopy (SBCE) has high sensitivity and a favorable clinical impact in assessing the presence of small-bowel mucosal lesions in patients with suspected Crohn’s disease and no obstructive symptoms [1–3]. Very recently, the CapsoCam SV-1 (CapsoVision, Inc. Saratoga, California, USA) has been introduced as a new standard in SBCE. The system allows lateral panoramic 360° viewing with wire-free technology, long-lasting battery life, and 12–20 frames per second captured by four high-resolution cameras located on the capsule sides and facing the four quadrants of the digestive wall [4,5]. To the best of our knowledge, there is no published report on the use of this new technique in patients with suspected small-bowel Crohn’s disease. Here, the case of a 51-year-old woman with a 2-year history of chronic, nonbloody diarrhea is presented. Physical examination was unremarkable and laboratory parameters were within the reference ranges, with the exception...
of a low albumin level (3 g/dL). Nonsteroidal
anti-inflammatory drug use, infectious
disorders, and gluten intolerance were ruled out. Previous upper
and lower endoscopy with biopsies and abdominal cross-sectional imaging did not
reveal any lesions. A second ileocolonoscopy showed subtle ileal erosions with
histopathological evaluation that was inconclusive for Crohn’s disease. It was
decided that SBCE with CapsoCam
SV-1 should be performed.

The patient swallowed the capsule as
directed and retrieved it 52 hours later.
The wire-free capsule system was then in-
serted into the bench storage device and
the on-board data were downloaded
using a standard computer. The SBCE
video record provided high quality, four-

Video 1

\[\text{CapsoCam SV-1 short video of the distal ileum,}
\text{characterized by several ulcers of different sizes}
\text{and depths in a patient with suspected Crohn's disease.}\]

Figs. 1 – 4; Video 1). All lesions oc-
curred among normal-appearing mucosa,
with no trace of strictures. The 360° pa-
noramic view, together with the high rate
of recorded frames, allowed for a clear
characterization of each lesion. A remark-
able number of frames were recorded per
erosion or ulcer (mean 7 frames [range 2 –
14] per erosion, 9 frames [range 3 – 33]
per ulcer), and distinct perspectives of
lesions were captured by each camera
(mean number of cameras capturing the
lesion, 1.5 [range 1 – 3]). This feature
represents a tangible improvement in le-
sion classification and differential diagno-
sis (i.e. for classification of the lesion type
or distinction between different or redun-
dant findings). Based on these findings,
the diagnosis of extensive small-bowel
Crohn’s disease was made and the patient
improved with specific therapy.

This case is interesting for several reasons.
First, an unusual case of extensive luminal
small-bowel Crohn’s disease was identi-
fied in a patient with a long history of
chronic, nonbloody diarrhea. Second, the
report adds to the growing literature on
advanced endoscopic imaging techniques
for the small bowel [1 – 3]. Finally, the per-
formance of a new standard for SBCE has
been described, providing multiple, high
resolution images and visualizing differ-
ent aspects of each lesion, which have the
potential to improve both the diagnostic
yield and the confidence of the operator
in assessing the diagnosis and the differen-
tial diagnosis.

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Corresponding author
Gian Eugenio Tontini, MD, PhD
Gastroenterology and Digestive Endoscopy Unit
IRCCS Policlinico San Donato
Via Morandi 30
20097, San Donato Milanese (MI)
Italy
Fax: +39-02-52774655
gianeugeniotontini@libero.it

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