

InvenioIP - Technology Details

Institution: University of Maryland, Baltimore

Docket: DV-2008-022

Title: Automated Colon Enema and Insufflation Device for Use in Virtual Colonoscopy

Summary: The invention is a device and method for administering a colon enema followed by gas insufflation of a patient's colon for use in virtual colonoscopy examinations. Currently, tagging agents are administered orally requiring a 2 to 48 hour interval between administration and procedure. Tagging agent delivery via colon enema eliminates the need for the prolonged bowel transit interval, the poorly tolerated exposure of the stomach and small bowel to the agent and increases exposure of the agent to the colon compared with oral administration. This device provides the technician with a means to safely administer, retrieve and dispose of the enema solution. The invention consolidates multiple manual steps into a single automated process improving a time consuming and unsanitary manual procedure.

Applications: This invention is generally applied to the field enema delivery in conjunction with imaging of the colon.

Advantages:

- Automated rectal enema administration and gas insufflation of colon.
- Single catheter assembly.
- Automatic, hands-free controlled rectal catheter retention balloon inflator.
- Controlled mixing of contrast agent in order to achieve a specific enema concentration.
- Controlled warming of the enema solution to a specified temperature.
- Vacuum for removing excess enema fluid immediately after the administration of the enema and for removing enema and insufflation gas at the conclusion of the VC procedure.
- Enclosed system to facilitate biohazard disposal.

State of Development:

- Prototype catheter has been developed.

R and D Required:

- Device prototype development and testing required.

Licensing Potential:

- UM seeks to develop and commercialize by an exclusive or non-exclusive license agreement with a company active in the application field.

Patent Status:

- International Patent Application [WO/2009/64718](#) Filed November 11, 2008; pending.

Related Publications:

- [More providers offer virtual colonoscopy, anticipating CMS coverage.](#) Health Imaging.com Wednesday, October 29, 2008
- Johnson CD, Chen MH, Toledano AY, Heiken JP, Dachman A, Kuo MD, Menias CO, Siewert B, Cheema JI, Obregon RG, Fidler JL, Zimmerman P, Horton KM, Coakley K, Iyer RB, Hara AK, Halvorsen RA Jr, Casola G, Yee J, Herman BA, Burgart LJ, Limburg PJ. [Accuracy of CT colonography](#)

[for detection of large adenomas and cancers.](#) N Engl J Med. 2008 Sep 18;359(12):1207-17.

- Kimberly JR, Phillips KC, Santago P, Perumpillichira J, Bechtold R, Pineau B, Vining D, Bloomfeld RS. [Extracolonic Findings at Virtual Colonoscopy: An Important Consideration in Asymptomatic Colorectal Cancer Screening.](#) J Gen Intern Med. 2008 Oct 29. [Epub ahead of print].
- Cotton PB, Durkalski VL, Pineau BC, Palesch YY, Mauldin PD, Hoffman B, Vining DJ, Small WC, Affronti J, Rex D, Kopecky KK, Ackerman S, Burdick JS, Brewington C, Turner MA, Zfass A, Wright AR, Iyer RB, Lynch P, Sivak MV, Butler H. [Computed tomographic colonography \(virtual colonoscopy\): a multicenter comparison with standard colonoscopy for detection of colorectal neoplasia.](#) JAMA. 2004 Apr 14;291(14):1713-9.

Files:  [International Patent Application Publication Number WO/2009/64718](#)

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