



# HerbClip™

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**FILE: ■Peppermint (*Mentha x piperita*) oil  
■Antispasmodic  
■ Double-contrast Barium Meal Examination**

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**RE: Peppermint Oil Found Effective Antispasmodic in Double-contrast Barium Meal Examination**

Mizuno S, Kato K, Ono Y, et al. Oral peppermint oil is a useful antispasmodic for double-contrast barium meal examination. *J Gastroenterol Hepatol.* August, 2006;21(8):1297-1301.

Double contrast barium meal examination (DCBM) is a common technique for diagnosing diseases of the upper intestinal tract such as stomach cancer and ulcers. Many people in Japan undergo DCBM because of the high incidence of stomach cancer in the population. Antispasmodic drugs are frequently used during radiology and endoscopy procedures, and antispasmodics increase the diagnostic quality of DCBM. However, these drugs must be given by injection, they cause side effects, and they cannot be used in patients with heart disease, glaucoma, diabetes, and other conditions. Peppermint oil (*Mentha x piperita*) has antispasmodic effects in the intestinal tract and it has been used successfully in similar types of diagnostic procedures. The purpose of this study was to evaluate the effectiveness of peppermint oil as an antispasmodic during DCBM.

This case-control study was conducted at the Nihon University School of Medicine in Tokyo, Japan. The subjects were men and women who were undergoing the DCBM procedure as part of a medical examination. DCBM is usually performed without the use of antispasmodics because of the risk of side effects. Subjects in the peppermint oil group drank 10 ml of a 3.2% peppermint oil solution mixed with an equal amount of the barium suspension. Subjects in the control group drank water mixed with an equal portion of the barium suspension instead of peppermint oil. Subjects were then given the remainder of the barium suspension to drink and the standard DCBM procedure was performed. The gastroenterologists and radiologist were blinded to the treatment groups.

After the procedure, the subjects completed written questionnaires asking about previous experience with DCBM and acceptability of the test liquid. The subjects were asked about their discomfort and any unexpected reactions within one hour after completing the DCBM. The subjects were also asked to report any side effects experienced two days after completing

the DCBM. The results of the DCBM were evaluated by a group of gastroenterologists and radiologists who did not know if the subjects were in the PO group or the control group. The radiology images were rated for spasms, quality of the barium coating of the intestinal tract, and overall diagnostic quality for the esophagus, upper stomach, middle stomach, lower stomach, and duodenal bulb.

The peppermint oil group contained 205 subjects and the control group contained 215 subjects ranging in age from 24 to 80 years. There were no significant differences between the groups in terms of age, gender, or number of previous DCBM procedures. According to results of the questionnaires, the acceptability of the barium suspension, overall pain experienced during the procedure, and side effects 1 hour after the procedure were similar between the 2 groups. No side effects were reported up to 2 days after the procedure in either group. The spasm scores for the esophagus, lower stomach, and duodenal bulb were significantly lower in the peppermint oil group than in the control group, indicating a reduction in spasm with peppermint oil ( $P < 0.001$  for all 3 sites). The overall diagnostic quality at the esophagus, lower stomach, and duodenal bulb was rated as higher for the peppermint oil group than the control group ( $P < 0.001$  for all 3 sites). There was no difference in the quality of the barium coating between the 2 groups.

The authors conclude that orally administered peppermint oil reduced spasms of the esophagus, lower stomach, and duodenal bulb and improved overall DCBM diagnostic quality in this study. They suggest that oral peppermint oil is a safe and effective antispasmodic that is easier to administer and less costly than injection of antispasmodic drugs. Because peppermint oil reduces image quality problems related to motion in the intestinal tract, oral peppermint oil might also be useful as an antispasmodic for more advanced types of diagnostic imaging, such as computed tomography (CT), magnetic resonance imaging (MRI), and virtual endoscopy.

—*Heather S. Oliff, PhD*

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