Use of a novel “Polyp Ruler Snare” to improve assessment of colon polyp size.

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Hypothesis

• Use of polyp ruler snare would enable endoscopists to more accurately measure colorectal polyps.

• Characteristics of endoscopists influence the accuracy of polyp size determination.
  – Number of Years
  – Specialty
  – Procedures/week
Background

- Initial Screening colonoscopy
- Polyp size?
- Low vs. High risk
- Determine Surveillance interval
Surveillance Intervals

Initial Screening Colonoscopy

- Hyperplastic polyps: 10 years
- 1-2 < 1cm tubular adenomas: 5-10 years
- 3-10 adenomas or any adenoma > 1 cm or any adenoma with villous features or high-grade dysplasia: 3 years
Background

• Studies have shown that endoscopic estimation of polyp size is highly unreliable
  – Operator dependent
  – May vary from session to session for the same endoscopist
• Most endoscopists tend to underestimate the polyp size
Which method is the best?

- Polyp size is commonly measured by:
  - Open biopsy forceps
  - “Cold snare” technique
- Estimation of size by linear probe was found to be the most accurate and the open biopsy forceps method was the least accurate.
- Linear probes are not practical for routine clinical use.
- Pathologists' measurements of polyp size were found to be more accurate than endoscopic estimation.
Problems

• Overestimation/underestimation of polyp size => inappropriately prescribed surveillance intervals.
• Both gastroenterologists and PCPs have been shown to prescribe repeat colonoscopy at shorter intervals than the current guidelines which can leads to both an increase in cost and harm.
• This combined with inability to accurately estimate polyp size can have a huge impact on the utilization of already limited resources.
Why this study?

• Studies have repeatedly demonstrated the need for better and more accurate ways for determining polyp size.
The “Polyp Ruler Snare” is a simple modification of standard snare devices.

While the wire portion and handle of the snare are unchanged, the distal aspect of the plastic sheath is altered to add ruler markings at 5-10mm intervals from the distal end of the sheath.

These markings are continued for 3 cm in total length.
Subjects

• We are in the process of enrolling at least 30 endoscopists from:
  – VAPSHCS
  – UWMC
  – HMC
  – Virginia Mason
  – Fred Hutchinson Cancer Research Center
  – Polyclinic
  – Minor and James
  – Northwest Gastroenterology Associates
  – Swedish Hospital
  – Tacoma Digestive Disease Specialists
  – Other endoscopy groups in the Seattle and Tacoma area.
Method

- Type of training (e.g. GI vs. surgery)
- Board certification
- Years of experience doing colonoscopy
- Average number of procedures/week
- University based or a private practice

Anonymized questionnaire
Method

• Simulated colonoscopy using an artificial colon model.
• Contains 10 artificial polyps made from plastic beads.
• Beads are a different color and size (2mm - 3 cm).
• Endoscopists are asked to determine the artificial polyp size during colonoscopy with equipment that they are familiar with (i.e. their own colonoscope) and a standard polypectomy snare.
• Repeat the procedure using the “Polyp Ruler Snare”.
Analysis

• Determine the absolute difference between estimated size and true size for each polyp using the standard snare.
• Same analysis will be performed using the ruler snare.
• Calculate the average difference between the estimate and the true size for each method and see whether the use of a polyp ruler snare results in a significant improvement in the accuracy of determining polyp size.
• Determine the impact of polyp size estimates upon clinical recommendations (i.e. is the polyp 1 cm or larger, 6-9 mm or < 6 mm in size?). This will help determine if the ruler snare would have a clinically meaningful impact upon patient care.
Limitation

• This study is limited through the use of an artificial colon model, though this is the only ethical way to determine a known polyp size (i.e. it would be unethical to put a foreign body in a patient for the purposes of a study).
References


5. Schoen RE, Gerber LD, Margulies C. The pathologic measurement of polyp size is preferable to the endoscopic estimate. Gastrointest Endosc. 1997 Dec;46(6):492-6


