Defining Colonoscopy Quality and Why it Matters

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Disclosures

- Participated in discussions with BCBS of NC in establishing quality parameters for GI. 2010.
- Current participant as physician representative in committee for quality maintenance with BCBS of NC as advisor.
- Current member of MACRA-established Technical Expert Panel (Acumen) for refinement and development of quality and cost measures within MIPS for CMS.

Quality: Where Did it All Begin?

"A prospective study of colonoscopy practice in the UK today: are we adequately prepared for national colorectal cancer screening tomorrow?"

CJA Bowles, R. Leicester, C. Romaya, E Swarbrick, CB Williams, O Epstein

Gut. 2004 Feb; 53(2): 277-283

Quality From the Start

Four month prospective study of colonoscopies done in 68 endoscopy units in UK.

Total of 9223 colonoscopies performed.

- Cecal intubation rates, 76.9%. 56.9% when adjusted for documentation of landmarks.
- Polyps found in 22%
- Cancer found in 3.8%

Quality From the Start

- Hospital admission within 30 days: 1.2%
- Bleeding following colonoscopy: 0.14%
- Perforation rate 1:769 (12 patients)
- 10 deaths within 30 days.

- Of the endoscopists only 17% received supervised training during first 100 cases and only 39.3% attended a training course.

Quality, The Need is Obvious

Many countries began to look at development of quality programs as a result of this and other articles.

DEFINE QUALITY

MEASURE QUALITY

ACT ON YOUR MEASURES

REPORT

Colonoscopy Quality Measures From the Start

- Training standards were already in place for US training programs.
- Credentialing pressures on hospitals and other endoscopy facilities.
- Perhaps the greatest challenge was to establish quality benchmarking and measures within colonoscopy for practical use.

Quality: How Do We Measure It?

Parameters for success

- Measures must be easily identified and measurable.
- Measures must have clinical significance.
- Must be reflective of reasonable quality judgement with successful attainment of targeted established goals.
- Measures must undergo appropriate vetting within the profession and reach agreement on their value.

What Do We Measure?

- There are lots of items that have been looked at but the common denominator in most measures rests with improvement in the adenoma detection rate (ADR).
- For every 1% increase in ADR there is a 3% decrease in the risk of interval cancer. (Corley, et. al., 2014, NEJM)
- ADR is now included in PQRS measures, MIPS reporting, Core Quality Measure Collaborative.
- Results in improved service to patient and possible boost in reimbursement.

Let's Start With the Equipment

- Good quality high-definition optics with appropriate monitors.
- High volume irrigation system for lavage and cleaning of areas when needed.
- Well designed training program for techs and assistants .
- Quality scope reprocessing equipment with appropriate training and periodic reassessment of individuals involved.

Colonoscopy Prep

You can't remove what you can't see

- Large volume lavage prep.
- Split dose. Improves quality of prep as well as patient comfort and compliance.

  Improved polyp as well as adenoma detection rates of 5 percentage points. Also resulted in improved completion rates.

  Guruda, SR et. al. Castrointestinal Endoscopy 2012; 76:603-608 e1.

Colonoscopy Prep

Barriers

- Instructions must be clear and understood.
- Taste.
- Tolerance of large volume.
- Age
- Comorbidities and medicines.

Cecal Intubation Rates

- Has to do with both training and prep.
- Training programs have minimum volume requirements before assessment of endoscopist skill level.
- Frequently used as benchmarking for endoscopy units.

Scope Withdrawal Time

- Has clinical significance but the controversy is mired within the decision of what the appropriate minimum length of time should be (currently >6 min.).

Barriers

- Case load.
- Fatigue level
- Patient comfort and sedation.
- Anatomy of colon.

Other Measures to Improve Visualization

- Position change, especially in the removal of difficult polyp.
- Retroflexion of scope in the right colon has been shown to improve ADR. (Hewett, DG; Rex, DK et. al. 2011 Gastrointestinal Endoscopy)
- Second look also found to improve ADR in right colon. (Kushnir V.M. et. al., 2015 Am. J. Gastroenterology)
- Madhav Desai, et. al. Gastrointestinal Endoscopy, 2018.09.006. Review comparison of retroflexetion and second look.

Scope Technonlogy and Technique

- Wide angle, high-definition imaging combined with wide-screen HD monitor.
- Chromoendoscopy by color filtering. Many variations, all with good claims of increasing ADR.
- Chromoendoscoy by use of injected dye (methylene blue, indigo carmine). Improves detail of visualized mucosa with significant improvement in ADR. (Brown SR, et. al.)

Scope Technology and Technique

- Water immersion/exchange. Improves patient comfort but also shows slight improvement in ADR. (Cochrane, A. et. al.)
- Borders of flax adenomas better defined. Edges tend to float as opposed to lying down with air insufflation. Need for repositioning patient may be a barrier for polyp removal.

The Future

If colonoscopy is the gold standard for colon cancer screening it is up to us to keep it there

The Future

Artificial Intelligence in colonoscopy

Karnes, et. al.

- Provides computer assisted polyp detection along with identification of polyp type with high level of accuracy.
- Computer assisted grading of prep quality, cecum landmarks.
- Most importantly assists in detection of polyps as well as pathology of that polyp.

The Future

- Cost component of screening and surveillance colonoscopy is now a part of MIPS cost component reporting (2018), tied back to colonoscopy quality parameters. Pathology is a part of the overall cost of the colonoscopy.
- In the future may be looking at clip and drop or discard small adenomas and reserving pathology for larger polyps??? Much to be determined by local medico-legal status.

The Future

- With the assistance of AI will we be able to have high quality colonoscopy performed by well trained non-physicians with one gastroenterologist available for polyp removal or decision making for multiple rooms being operated by multiple individuals under the direction of one physician? Already done is some countries without AI.

Yes, There Are Colonoscopy Quality Measures Other Than ADR

- Appropriate surveillance interval measures.
- Immediate adverse events.
- Documentation measures:
  - H&P
  - Consent
  - Discharge Instructions
  - ASA Category
  - Appropriate Indication