Endoscopic Ampullectomy Of Adenoma Of The Major Duodenal Papilla: Long-term Outcome

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Introduction
- Ampullary tumors are more frequently identified, are usually adenomas, and have a malignant potential.
- Local surgical resection with pancreaticoduodenectomy has been the gold standard treatment.
- Reports of endoscopic removal are increasing and provide a surgical option in the correct setting.
- Guidelines are needed for endoscopists.

Issues for Endoscopists
- What is the optimal polypectomy technique?
- What are the complications and how can they be avoided?
- What is the role of stents and thermal coagulation?
- What is the recurrence rate and how should recurrence be managed?
- What is the surveillance interval and duration?

Aim of Study
- Determine efficacy of endoscopic removal of ampullary adenomas.
- Determine role of adjunctive thermal ablation following removal.
- Determine optimal surveillance interval and duration following ampullary adenoma removal.

Selection Criteria for Endoscopic Removal
- Previously untreated ampullary tumor
- Endoscopically benign features:
  - Yellow/green, not necrotic, soft
  - No malignant features found, indurated, ulcerated, hemorrhagic
- No direct spread into ducts on EUS or imaging
- CT, EUS, and/or imaging biopsy to evaluate for invasion (CA when suspected)

Technique of Polypectomy
- Sphincterotomy (Early)
- Sino-polypectomy (Coagulation current)
- Single-gang tip or sequential removal
- PD stent placement: (non-modified)
- Aggressive polyp fragment recovery

Histopathology
- Benign tubulovillous/villous: 47
- Low or high grade dysplasia: 8
- Focal invasive cancer within TVA (n=17)

Results
- Complete removal after 1 or more ERCP's (n=58)
- Length of FU: 8 – 74 (mean-23)
- Endoscopic success: 34/58 (59%)

Results Parameters
- Complications of removal:
  - Early: pancreatitis, bleeding, perforation, late: abscess, stenosis
- Endoscopic success:
  - Complete removal regardless number of sessions
  - No recurrence, or an easily treatable recurrence on long-term follow-up
- Endoscopic failure:
  - Instability to channels, complexity
  - Discovery of T2 cancer
- Recurrence treated surgically

Complications (n=4)
- Pancreatitis: 2
- Bleeding: 1
- Late papillary stenosis: 1

Impact of PD Stents on Acute Pancreatitis and Papillary Stenosis

<table>
<thead>
<tr>
<th>Complication</th>
<th>With PD Stent</th>
<th>Without PD Stent</th>
<th>Total</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pancreatitis</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>0.2</td>
</tr>
<tr>
<td>Papillary Stenosis</td>
<td>1</td>
<td>1</td>
<td>2</td>
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</tbody>
</table>

* P=0.046

Results of Endoscopic Ampullectomy Based on Genetic Influence

<table>
<thead>
<tr>
<th>Genetics</th>
<th>Initial Failure</th>
<th>Recurrence</th>
<th>Resection</th>
<th>Overall Success</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A/Gardner's</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>FAP/Gardner's</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>100%</td>
</tr>
</tbody>
</table>

Results II
- Endoscopic failure: 6 (10%)
- Initial failure:
  - Too extensive or migrated up ducts: 4
  - Unexpected advanced cancer: 2
- Recurrence treated surgically: 2

Effects of Thermal Ablation

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<thead>
<tr>
<th>Therapeutic Ablation</th>
<th>Initial Failure</th>
<th>Recurrence</th>
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<tr>
<td>APC</td>
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<td>11</td>
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<tr>
<td>BICAP</td>
<td>15</td>
<td>12</td>
</tr>
</tbody>
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*5% or more: 2 cases, <5%: 1 case

Guidelines
- Use PD stents in all cases possible.
- After failed attempt, attempt re-ERCP with complete removal documented. Typically 2-3 years.
- Thermal ablation (especially APC) if residual is noted on follow-up ERCP's.
- After complete removal, repeat ERCP every 6 months for 2-years before suspending follow-up.
- In sporadic cases or lengthening follow-up in FAP patients.

Conclusion
- Endoscopic removal of ampullary adenomas in selected patients in expert hands was 65% successful with only 4% complication rate.
- Incomplete removal after initial polypectomy was common but repeat treatments achieved success, unless the polyp was:
  - Very extensive
  - Contained focal advanced carcinoma
  - Extended up the ducts
- Patients undergoing thermal ablation therapy as an adjunct to snare ampullectomy had a lower rate of recurrence.
- PD stents prevents pancreatitis and late ampullary stenosis.
- Patients with a genetic predisposition have lower rate of recurrence following initial resection.

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- PD stents prevents pancreatitis and late ampullary stenosis.
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Introduction

- Colorectal cancer (CRC) is the fourth most common cancer in the United States.
- There is a 5% lifetime risk of developing CRC in the USA.
- Colorectoscopy is the mainstay of screening, as well as a useful tool in diagnosis.
- Family history of colon cancer increases risk of developing colon cancer.
- Involvement of one first degree relative with CRC at age 45 or younger increases risk of developing CRC by 15%.

Methods I

- Asymptomatic patients referred for first screening colonoscopy were included in this study.
- Patients with hereditary CRC syndromes, IBD that increase risk of CRC were excluded.
- Charts of these patients were reviewed to assess if polyps or cancer were detected on initial colonoscopy and also the pathology results were reviewed.

Methods II

- High risk group included 82 asymptomatic patients who were referred to us for colonoscopy because of family history of colon cancer.
- <40 yrs - 32 patients
- 40-50 yrs - 50 patients
- Race, smoking history, degree of relative with cancer and pathology of polyps were considered.
- Control group included 82 asymptomatic patients between 50-52 years of age who underwent average risk colonoscopy.

Demographic data of patients presenting for colon cancer screening

<table>
<thead>
<tr>
<th>Group</th>
<th>Gender</th>
<th>Race</th>
<th>Smoking History</th>
<th>Family History of colon cancer</th>
<th>Types of Polyp</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Risk &lt;40 yrs</td>
<td>Male</td>
<td>White</td>
<td>Smokers 27</td>
<td>First relative</td>
<td>Adenomas</td>
</tr>
<tr>
<td>High Risk 40-50 yrs</td>
<td>Female</td>
<td>African</td>
<td>Non smokers 24</td>
<td>Second degree relative</td>
<td>Hyperplastic</td>
</tr>
<tr>
<td>Average Risk 50-52 yrs</td>
<td>Hispanic</td>
<td>Hispanic</td>
<td>Non smokers 36</td>
<td>Both</td>
<td>Adenomas</td>
</tr>
<tr>
<td>High Risk &lt;40 yrs</td>
<td>Other</td>
<td>African and Hispanic</td>
<td>Non smokers 36</td>
<td>Both relatives</td>
<td>Hyperplastic</td>
</tr>
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Methods III

- Our study showed higher polyp detection rate with advancing age and patients with family history of colon cancer above 40 yrs of age.
- Detection of polyps in average risk was 31.7% vs. 38% of high risk 40-50 yrs group.
- Patients under age 40 (high risk group), only 7/32 had polyps (21.8%).

Results II

- Adenoma detection rate was higher in average risk group (69.2%) Vs high risk 40-50 yrs group (63.19%).
- More hyperplastic polyps (57.1%) were found in patients less than 40 in higher risk group.

Conclusions

- Our study did not show any statistical difference between polyp detection rates in patients with family history of colon cancer versus average risk colonoscopies.
- Though we did see higher detection rates of polyps with advancing age, bigger studies with more number of patients are needed to see the association of family history with colon polyp detection rate.
Do Abnormalities Detected on CT Scans Warrant Colonoscopy?

Jamal Qureshi, MD 1; Piangwarin Phaosawasdi, MD 2; Marc Catalano, MD 3,4; Joseph Geenen, MD 3,4; Nalini Guda, MD 3,4

1: Aurora Healthcare, Department of Gastroenterology and Hepatology Milwaukee, WI; 2: Aurora Sinai Medical Center Department of Internal Medicine, Milwaukee, WI; 3: GI Associates, LLC, Milwaukee, WI; 4: Aurora St. Luke’s, Pancreatic Biliary Center, Milwaukee, WI

Introduction

Computed Tomography is often performed to evaluate abdominal symptoms. When abnormalities are detected in the bowel, these patients are often referred for a colonoscopic evaluation. The data on usefulness of such an approach are controversial.

Aim

To evaluate the utility of colonoscopy in the evaluation of abnormal CT scans of the lower gastrointestinal tract.

Methods

• Retrospective analysis of consecutive patients referred for evaluation of abnormal CT scans from January 2005 to June of 2010. All patients had an imaging study within 3 months of index colonoscopy. Data were abstracted using standardized data extraction sheets. Inclusion criteria were patients over the age of 16 with an abnormal CT scan. Exclusion criteria included incomplete colonoscopy evaluation, prior history of bowel resection, prior history of colon cancer or inflammatory bowel disease and those with unsatisfactory bowel preparation.

Results

• 150 consecutive patients ranging in age from 16-90 (mean 50.5). 57% were female. 88% of patients were Caucasian.
• In 44% of the cases a correlating lesion was found on colonoscopy. Clinically significant lesions were seen in 19 (12.7%) patients of the 150, including IBD, Adenocarcinoma, advanced polyps, and carcinoid tumor. 45% of patients had symptoms for less than 2 weeks and of those only 1 with a clinically significant lesion found on colonoscopy, compared to 18 with those with symptoms greater than 2 weeks (P<0.001). Patients <50y/o were less likely to have a correlating lesion and the only significant lesions found in this group was IBD.

Conclusion

• Concordance between abnormal CT imaging and resultant colonoscopy were relatively low (44%). 12.7% of patients with an abnormal CT scan were ultimately found to have a clinically significant lesion on colonoscopy, including adenocarcinoma, IBD, advanced polyps, and carcinoid tumor.
• For patients with symptoms less than 2 weeks, yield of colonoscopy was low, with only 1 clinically significant lesion found on colonoscopy.
• It is prudent to perform colonoscopy for abnormalities detected on CT scan of the bowel wall especially in those with symptoms > 2 weeks and age over 50.
Is There a Role of FISH in the Diagnosis of Cholangiocarcinoma in Routine Clinical Practice?

Michael Einstein MD1; Shawn Hancock DO 2; Hershel Raff PhD 3; Patrick Pfau MD 2; Marc Catalano MD 4,5; Joseph Geenen MD 4,5; Nalini Guda MD; 2,4,5

1: Department of Gastroenterology and Hepatology Aurora Health Care Milwaukee, WI
2: Department of Gastroenterology and Hepatology University of Wisconsin Hospital and Clinics Madison, WI
3: Endocrine Research Laboratory, Aurora St. Luke’s Medical Center, Milwaukee, WI
4: GI Associates, LLC, Milwaukee, WI
5: St. Luke’s Medical Center, Pancreatobiliary Center, Milwaukee, WI

Introduction

Cholangiocarcinoma (CCA) is difficult to diagnose. Tumor markers are insensitive and the yield of cytology is low. Fluorescent in situ hybridization (FISH) examines for chromosomal abnormalities that may occur in CCA. Reported sensitivity and specificity in research studies are 34-46% and 88-99%, respectively. It is unclear if these data can be applied in routine clinical practice.

Aim

Determine if FISH can aid in the diagnosis of CCA in patients with non-diagnostic cytology by evaluating the accuracy of FISH in a routine clinical setting.

Methods

This is a retrospective chart review of patients with biliary strictures including those with and without primary sclerosing cholangitis (PSC) who had an endoscopic retrograde cholangiopancreatography (ERCP) and brushings for both cytology and FISH analysis between 2007-2010 at two centers. ERCP was performed to evaluate obstructive signs/symptoms, or as part of surveillance for CCA in those with PSC. Patients with prior malignancy or positive cytology before or at the time of initial ERCP were excluded. Cytology reported as suspicious, atypical or negative was recorded as negative. FISH was positive if > 5 cells had gains of 2 or more probes. Patients were considered to have malignancy if there was radiographic progression, positive cytology, or conclusive pathology from surgery or at autopsy. Fischer exact test, Mann-Whitney, and Student’s t test were used when appropriate.

Results

Brushing for FISH was obtained in 61 patients in whom cytology was non-diagnostic for malignancy. 3 were excluded as they had an inadequate sample for FISH. There were a total of 51 FISH specimen on these 58 patients, as some had multiple ERCP. PSC was the primary diagnosis in 41, while 17 underwent ERCP for signs or symptoms of a biliary stricture. 5 out of 58 had positive FISH (8.6%) and 3 of these positive patients had CCA. In the other two, one had pancreatic cancer, and one underwent liver transplantation and received re-accumulation chemo- and radiation therapy. His explant was negative for CCA. All patients with an initial negative FISH remained negative on subsequent tests. There were 5 who had negative FISH but subsequently developed CCA. The sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), and accuracy of FISH for CCA were 37.5%, 96%, 60%, 90.6%, and 87.9% respectively (Table IV).

Conclusion

In cases of indeterminate biliary stricture and negative cytology, FISH may be performed to evaluate for CCA. FISH has an additive role in detecting CCA with modest PPV and high NPV. These findings are congruent with initial studies evaluating FISH and hence applicable to clinical practice. Those with negative FISH need intensive follow-up and there appears to be no added benefit of repeating FISH if initially negative.
Frequent Development of Chronic Pancreatitis in Patients with Recurrent Acute Pancreatitis

Mehsh Ebrahim MD 1, Hershel Raff PhD 2, Rupesh Prasad MD 1, Sandra Hubatch, RN, FNP-BC 4, Marc F Catalano MD 3,4, Joseph E Geenen MD 3,4; Nalini Guda MD 3,4

1: Aurora Sinai Medical Center Department of Internal Medicine, Milwaukee, WI; 2: Endocrinology Research Clinic Aurora Health Care Milwaukee, WI; 3: GI Associates, LLC, Milwaukee, WI; 4: Aurora St. Luke’s Medical Center, Pancreatic Biliary Center, Milwaukee, WI

Introduction

Recurrent acute pancreatitis (RAP) is thought to be a continuum of chronic pancreatitis. Rates of recurrence of pancreatitis after an initial attack and rates of progression to chronic pancreatitis are unclear.

Aims

- To assess the rates of recurrence and progression to chronic pancreatitis.
- To assess the etiological diagnosis in the evaluation of recurrent acute pancreatitis at a large tertiary care hospital.

Methods

- Patients hospitalized for acute pancreatitis in the past 9 years were initially identified by ICD-9 codes. Inclusion criteria included age > 18 years, and at least 2 out of 3 criteria:

  1) Epigastric pain with or without radiation to the back.
  2) Nausea and vomiting.
  3) Imaging suggestive of pancreatitis.

- RAP criterion required one prior episode of pancreatitis. Data on 912 subjects have been reviewed so far. 79 subjects met the inclusion criteria for RAP. Differences in demographic and clinical characteristics were compared between groups (based on clinical outcome) with chi-square/Fisher’s exact tests or ANOVA (parametric or Kruskal-Wallis).

Table I

Baseline Characteristics of the Patients

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Overall</th>
<th>No recurrence</th>
<th>Acute recurrent pancreatitis</th>
<th>Chronic pancreatitis</th>
<th>Last follow up and death</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years) (mean)</td>
<td>54 (29-87)</td>
<td>65 (28-87)</td>
<td>54 (28-77)</td>
<td>63 (85-79)</td>
<td>0.802</td>
<td></td>
</tr>
<tr>
<td>Gender:</td>
<td>37 (47%)</td>
<td>10 (44%)</td>
<td>14 (61%)</td>
<td>3 (11.7%)</td>
<td>0.785</td>
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<td>Male (%)</td>
<td>54 (55%)</td>
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<td>Female (%)</td>
<td>42 (55%)</td>
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<td>Caucasian no. (%)</td>
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<td></td>
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<tr>
<td>Asian American no. (%)</td>
<td>4 (5%)</td>
<td>2 (50%)</td>
<td>0 (0%)</td>
<td>1 (16.7%)</td>
<td>0.623</td>
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<tr>
<td>Hispanic no. (%)</td>
<td>7 (9%)</td>
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Table II

Medical History and clinical presentation:

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<th>Event</th>
<th>No of patients</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recurrence</td>
<td>79</td>
<td></td>
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<tr>
<td>Acute recurrent pancreatitis</td>
<td>15 (19%)</td>
<td>0.476</td>
</tr>
<tr>
<td>Chronic pancreatitis</td>
<td>25 (31.5%)</td>
<td>0.020</td>
</tr>
<tr>
<td>Death or lost to follow-up</td>
<td>28 (35.4%)</td>
<td>0.031</td>
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Table III

Characteristic                  | Overall | No recurrence | Acute recurrent pancreatitis | Chronic pancreatitis | Last follow up and death | P-value |
<table>
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Conclusion

- Recurrent acute pancreatitis occurred in approximately 6.6% of patients hospitalized for acute pancreatitis of all causes.
- Despite extensive work-up, 56% of subjects remained idiopathic.
- Sphincter of Oddi dysfunction and pancreatic divisum were the most common (24.4% of all identifiable causes). Microlithiasis was observed in 6 patients and autoimmune pancreatitis in one patient.
- The average duration of follow-up was 3.5 years and was similar in all 4 groups.
Prevalence Of Adenomas And Colon Cancer In People Of Asian Origin In The United States Appears To Be At Least Similar To Those Of Non-Asians Undergoing Screening

Rupesh Prasad, MD 1; Hershel Raff, PhD 3; Michael Einstein, MD 2; Marc Catalano, MD 4,5; Joseph E Geenen, MD 4,5; Nalini M Guda, 2

1: Aurora Sinai Medical Center Department of Internal Medicine, Milwaukee, WI; 2: Aurora Sinai Medical Center Department of Gastroenterology and Hepatology Milwaukee, WI; 3: Endocrinology Research Clinic Aurora Health Care Milwaukee, WI; 4: GI Associates, LLC, Milwaukee, WI; 5: Aurora St. Luke’s Medical Center, Pancreatic Biliary Center, Milwaukee, WI

Introduction

- Colorectal cancer is the second leading cause of cancer deaths in the United States.
- Cancer screening rates appear to vary based on race and ethnicity.
- Data on prevalence of colorectal neoplasia in Asian Americans are not clear.

Aim of Study

To assess the prevalence of adenomas and colorectal cancer in Asian-Americans undergoing screening colonoscopy at a large urban referral practice and compare it to Non-Asian Americans undergoing screening colonoscopy.

Methods & Material

- A retrospective analysis of Asian subjects undergoing a screening colonoscopy between January 2005 and June 2010 at a large urban referral practice was done.
- Ethnic origin ascertained by use of NIH ethnicity codes.
- Data abstracted using standardized abstraction sheets and included age, reason for exam, location of the lesion, pathology of the lesion.
- The control group comprised of 200 consecutive Non-Asian subjects undergoing screening colonoscopy from January 2010.
- Those with prior history colon cancer or those undergoing colonoscopy for symptom evaluation were excluded.
- Advanced adenomas were defined as those with villous histology, ≥1 cm adenomas, or those with high grade dysplasia. The lesions not meeting those criteria were listed as low-risk adenomas.
- The frequency data were analyzed using Chi-square test while continuous data were analyzed using variance.
- Results

- A total of 144 subjects met the inclusion criteria in the Asian group.
- The mean age of the Asian group at screening colonoscopy was higher than controls, 58 vs. 53, respectively.
- The grade of polypoid lesions was higher as the age increased in Asian subjects only.
- The prevalence of all lesions was higher in the Asians as compared to the non-Asians (p<0.001).
- There was a trend for advanced adenoma to be more frequent in Asians (12% vs. 8%, p=0.031).
- There was no significant difference in the location of lesions in the two groups (p=0.732).

Table I

<table>
<thead>
<tr>
<th>Finding</th>
<th>Asians (cases) (%)</th>
<th>Non-Asians (controls) (%)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total subject</td>
<td>144</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>65 (46)</td>
<td>112 (56)</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>78 (54)</td>
<td>88 (44)</td>
<td>0.080</td>
</tr>
<tr>
<td>Age (Mean±SD)</td>
<td>58±7</td>
<td>53±3</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Findings</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal</td>
<td>45 (31)</td>
<td>66 (33)</td>
<td></td>
</tr>
<tr>
<td>Low risk adenomas</td>
<td>38 (26)</td>
<td>48 (24)</td>
<td></td>
</tr>
<tr>
<td>Advanced adenomas</td>
<td>14 (10)</td>
<td>12 (6)</td>
<td>0.082</td>
</tr>
<tr>
<td>Carcinomas</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>All lesions</td>
<td>62 (43)</td>
<td>47 (23.5)</td>
<td>0.001</td>
</tr>
</tbody>
</table>

Table II

<table>
<thead>
<tr>
<th>Finding</th>
<th>Asians (cases) (%)</th>
<th>Non-Asians (controls) (%)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total subject</td>
<td>88</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>39 (44)</td>
<td>112 (56)</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>49 (56)</td>
<td>88 (44)</td>
<td>0.089</td>
</tr>
<tr>
<td>Age (Mean±SD)</td>
<td>53±4</td>
<td>53±3</td>
<td>0.840</td>
</tr>
<tr>
<td>Findings</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal</td>
<td>56 (66)</td>
<td>153 (76.5)</td>
<td></td>
</tr>
<tr>
<td>Low risk adenomas</td>
<td>12 (17.5)</td>
<td>12 (6)</td>
<td>0.741</td>
</tr>
<tr>
<td>Advanced adenomas</td>
<td>3 (3)</td>
<td>12 (6)</td>
<td>0.741</td>
</tr>
<tr>
<td>Carcinomas</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>All lesions</td>
<td>30 (34)</td>
<td>47 (23.5)</td>
<td>0.031</td>
</tr>
</tbody>
</table>

Conclusion

- There are limited data about colorectal cancer screening in Asian-Americans.
- Our study highlights that Asian-Americans had screening colonoscopy at a later age as compared to the general population.
- The prevalence of low-risk lesions was higher in Asians compared to Non-Asians even when the mean age was same in both groups.
- Asian-Americans should adhere to the current guidelines and undergo screening at the age of 50.