MUT Y Homolog (MUTYH)-Associated Polyposis (MAP)

Raphael Moore, MD
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Pathophysiology and Presentation

Pathophysiology

- Mutation in **MUT Y Homolog (MUTYH) Gene** [1]
  - Formerly Called the MYH Gene
- Autosomal Recessive [1]

Presentation

- Characterized by 10-100's of Colorectal Adenomatous Polyps [2]
  - Can Also Develop Hyperplastic and Mixed Polyps [2]
  - Often Right-Side Predominant (29-69%) [3-5]
- Risk or Colorectal Cancer:
  - 43-63% by Age 60 [2]
  - 80-90% Lifetime without Timely Surveillance [6,7]

Extracolonic Manifestations [2]

- Duodenal Polyps (17-34%)
  - Duodenal Cancer (4%)
- Gastric Polyps (11%)
  - Gastric Cancer (1% – Not Significantly Higher Than the General Population)
- Bladder Cancer
  - 6-8% in Females
  - 6-25% in Males

- Ovarian Cancer (6-14%)
- Endometrial Cancer (3%)
- Breast Cancer (12-25%)
- Unclear Associations:
    - Thyroid Cancer
    - Desmoid Tumors
    - Pancreatic Cancer
    - Epidermoid Cysts

Diagnosis and Management

Diagnosis

- Diagnosis Confirmed by Genetic Testing

Screening/Surveillance [8]

- Colonoscopy Every 1-2 Years, Starting at Age 25-30 Years
    - May Consider Starting Earlier at Age 18-20 Years [9,10]
- Upper Endoscopy Every 3-24 Months, Starting at Age 30-35 Years
- Annual Physical Exam and Thyroid Ultrasound

Indications for Colectomy [8]

- Absolute Indications (2015 ACG Guidelines):
    - Documented or Suspected Colorectal Cancer
    - Significant Symptoms
- Relative Indications (2015 ACG Guidelines):
    - Multiple Large Adenomas > 6 mm
    - Significant Increase in Adenoma Number on Consecutive Exams
    - Adenoma with High-Grade Dysplasia
    - Inability to Adequately Survey the Colon Because of Multiple Diminutive Polyps
- Prophylactic Colectomy Generally Not Indicated

Other Colorectal Cancer and Polyposis Syndromes

Syndromes

- *Familial Adenomatous Polyposis (FAP)*
- *Lynch Syndrome*
- *Juvenile Polyposis Syndrome (JPS)/Familial Juvenile Polyposis*
- *MUT Y Homolog (MUTYH)-Associated Polyposis (MAP)*
- *Peutz-Jeghers Syndrome (PJS)*
- *Serrated Polyposis Syndrome (SPS)*
- PTEN Hamartoma Tumor Syndromes: (PHTS)

Comparisons

- *See Familial Colorectal Cancer and Polyposis Syndromes

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