



# MULTIMODALITY IMAGING EVALUATION OF THE ILEAL POUCH

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Director of CT

Director of Quality and Safety Outpatient Imaging



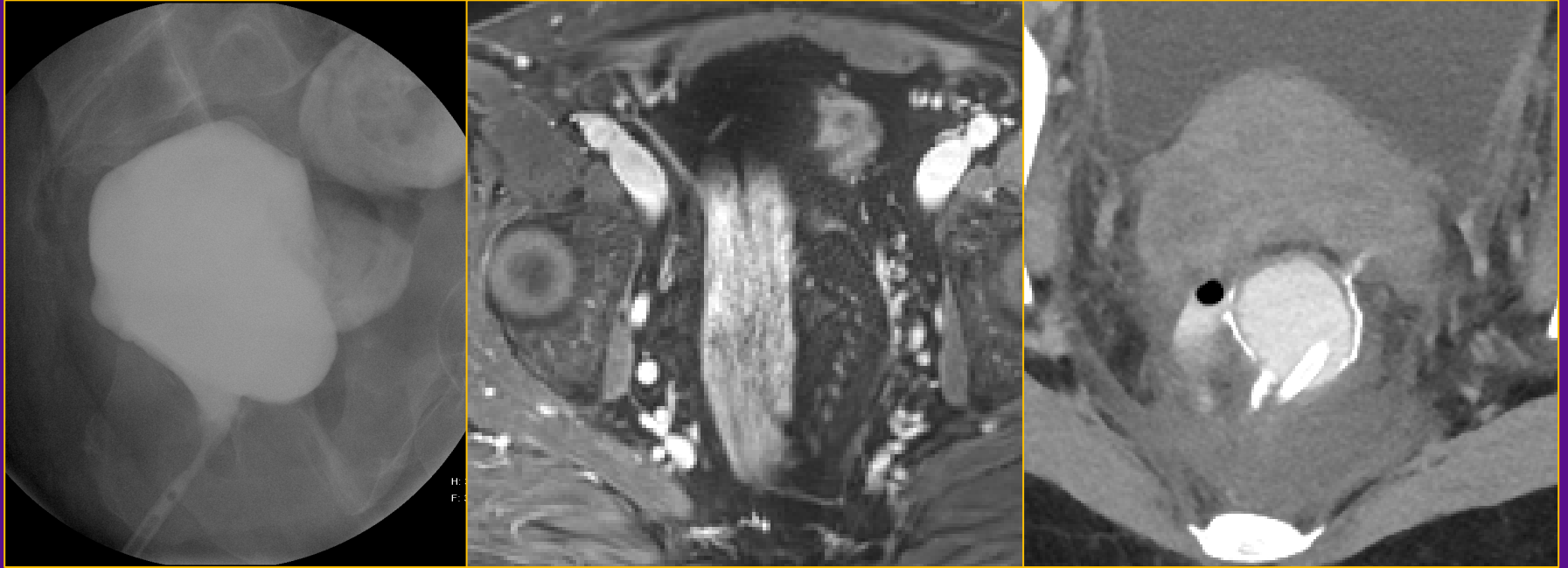
# Disclosure

- Olympus IBD advisory board

# Imaging Evaluation of the Ileal Pouch

Pouch Basics

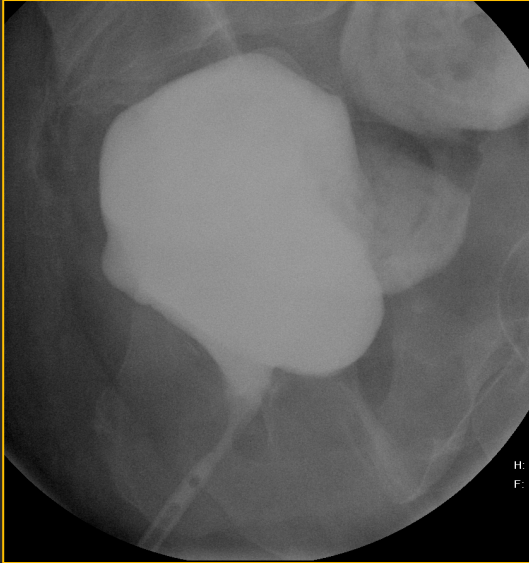
Assessment



# POUCH BASICS



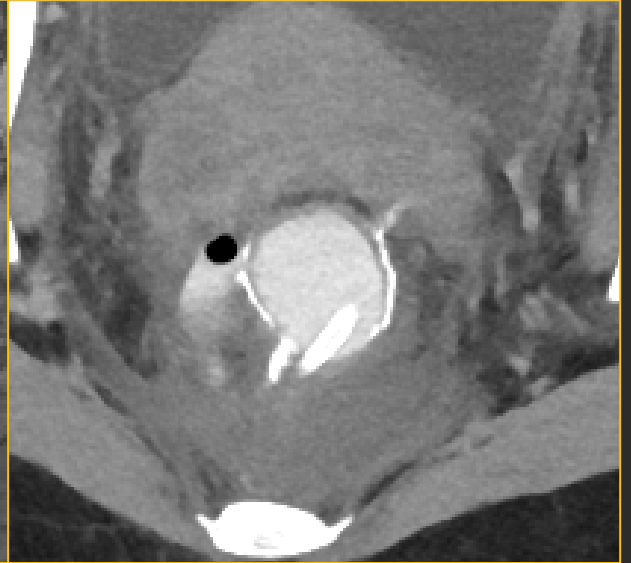
GGE



MRI

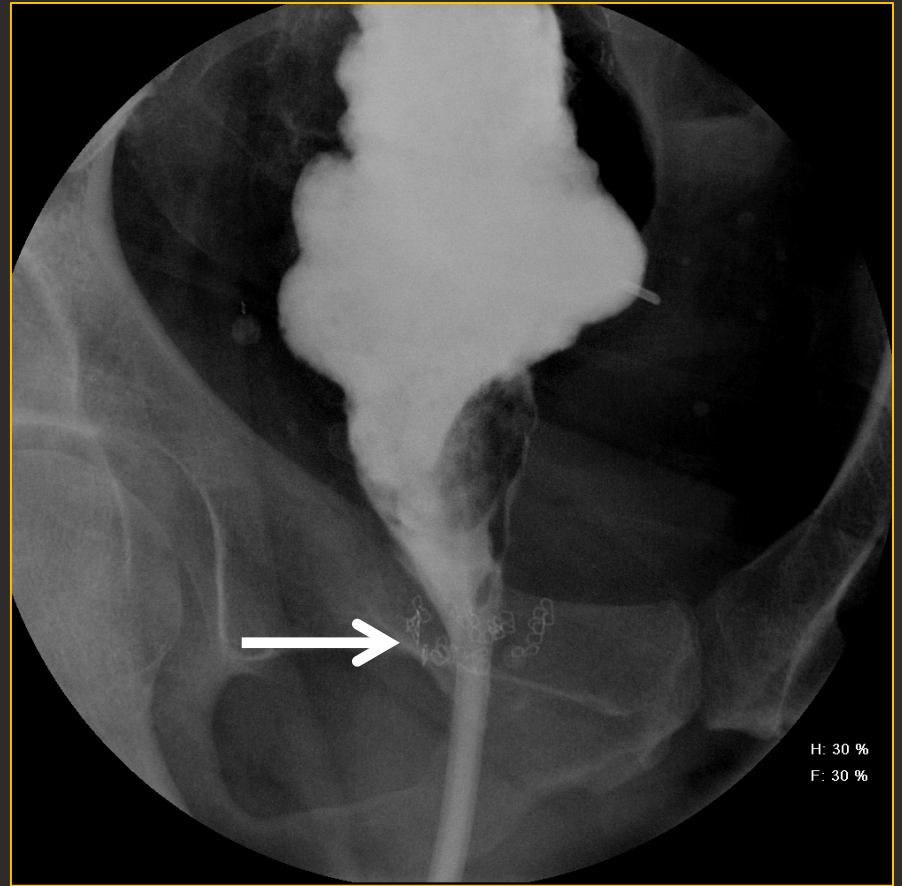


CT



**Imaging Complementary!**

# Stapled IPAA, No Mucosectomy



# J-Pouch Anatomy

## Pouch tip

- Stapled off blind-ending ileal segment

## Pouch body

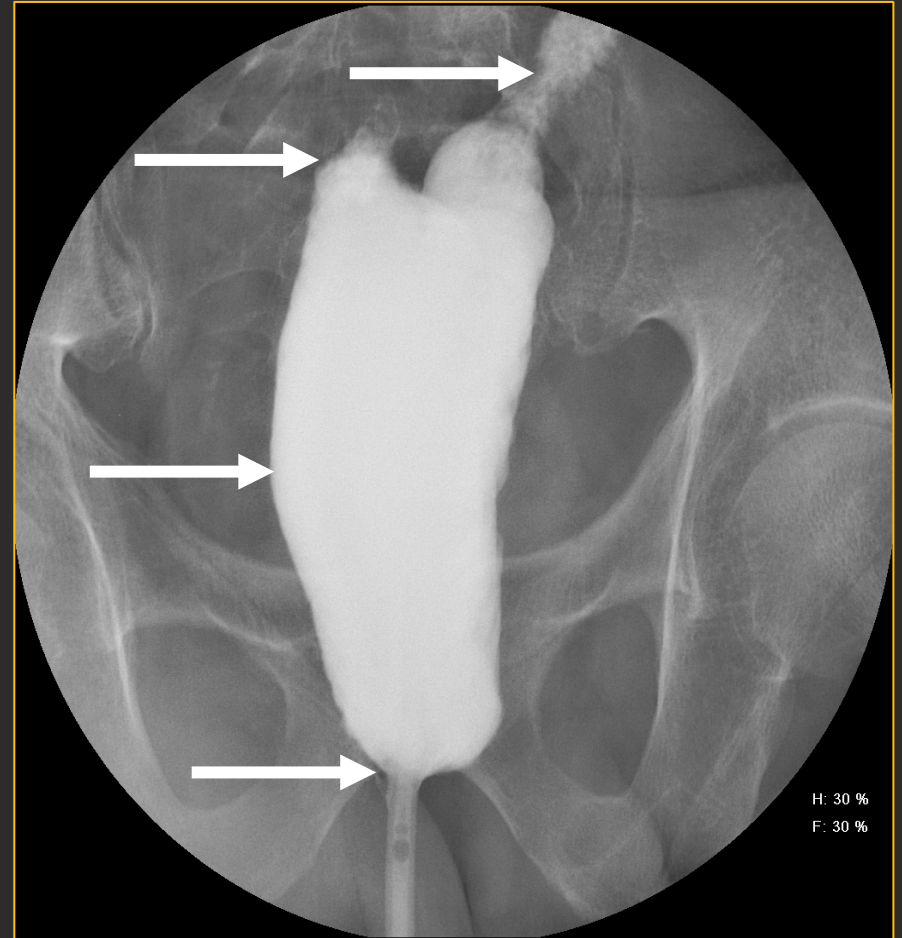
- Created by longitudinally connecting the two adjacent ileal segments

## Pouch apex

- Segment of pouch just proximal to the ileal pouch anal anastomosis

## Afferent limb

- Ileal segment contiguous with the pouch inlet, proximal to pouch



# J-Pouch Anatomy

## Pouch tip

- Stapled off blind-ending ileal segment

## Pouch body

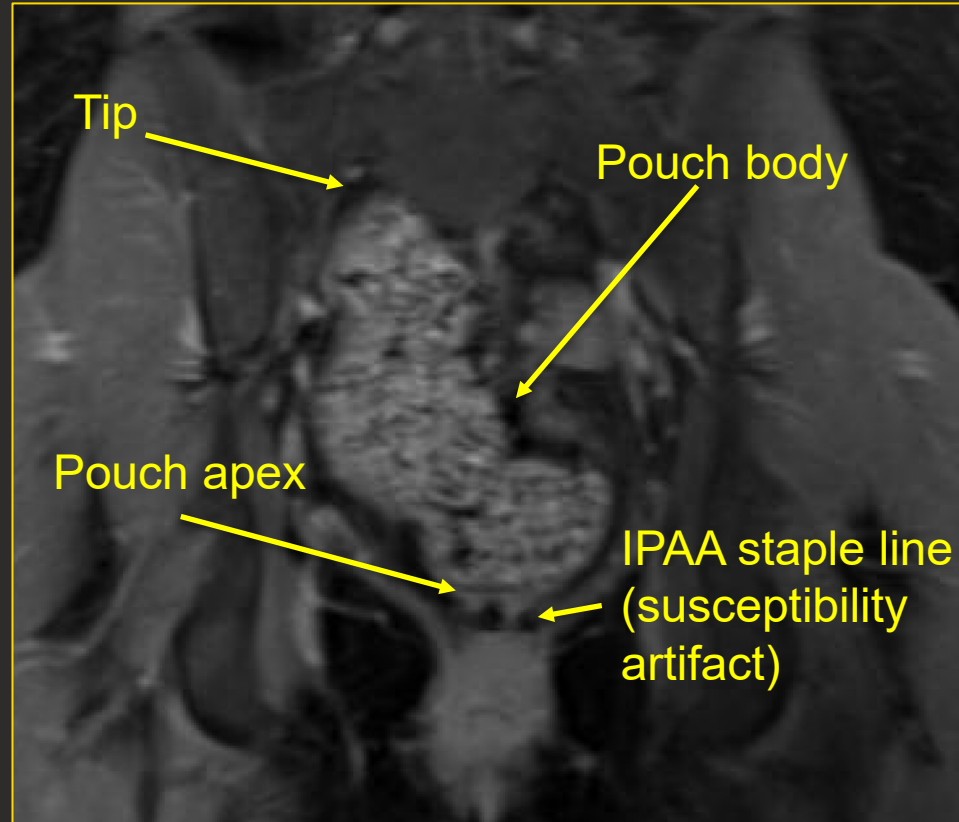
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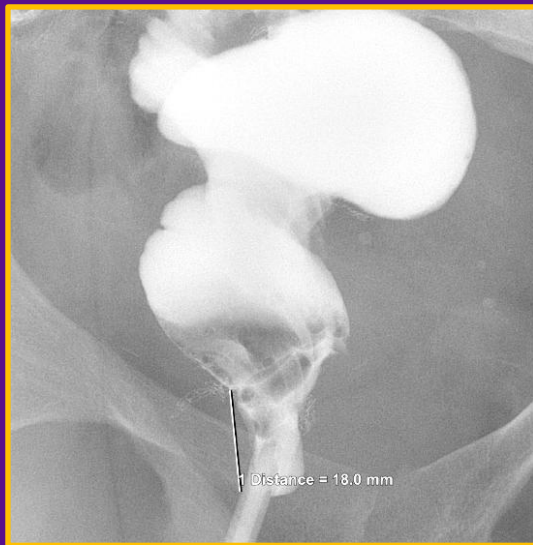
## Pouch apex

- Segment of pouch just proximal to the ileal pouch anal anastomosis

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Anastomosis or Suture Line

Rectal Cuff or ATZ

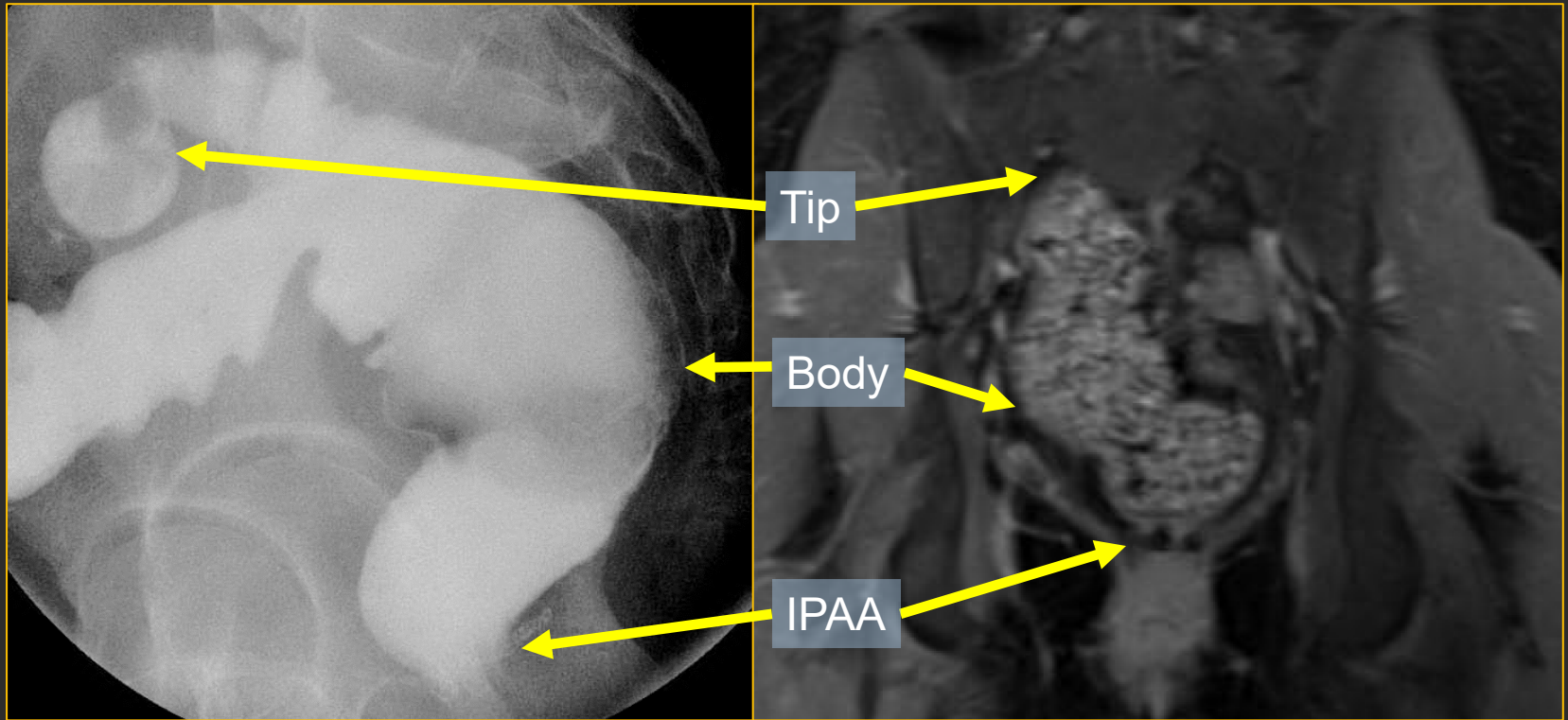
Pouch Outlet

Pouch Body

Pouch Inlet and Prepouch Ileum

# ASSESSMENT

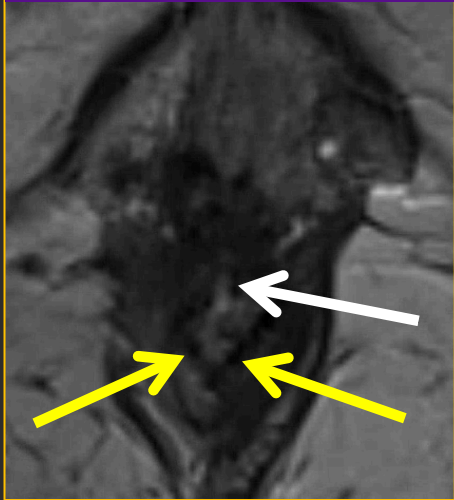
# Anastomosis or Suture Line



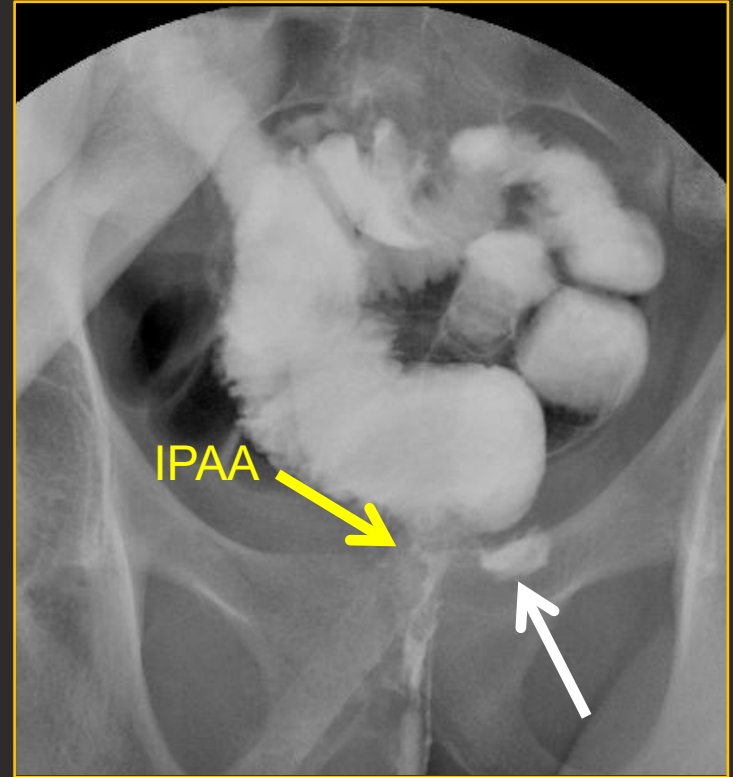
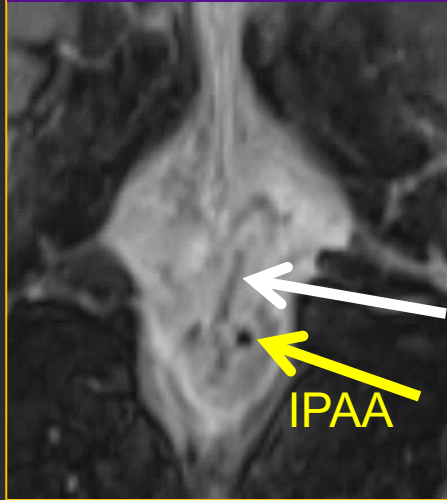


# IPAA: Most Common Leak Site

Axial T2



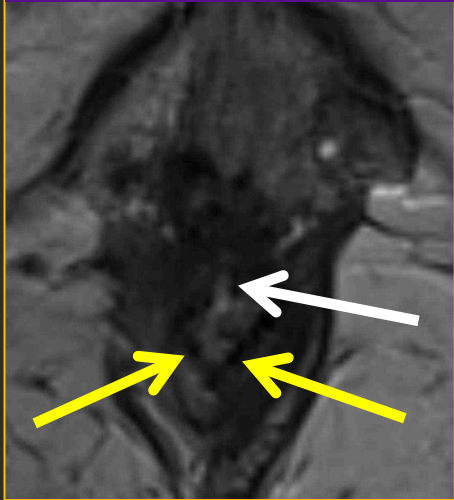
Axial T1 FS + IV



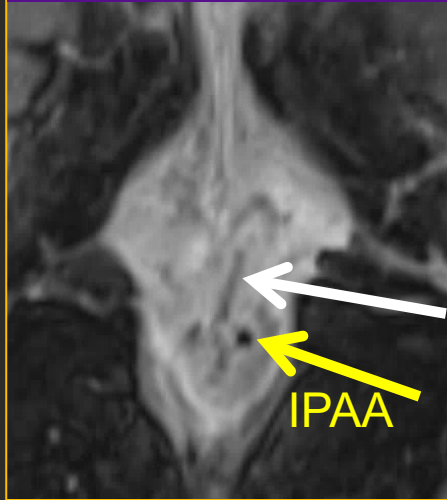
**Imaging Findings:**  
T2 hyperintense enhancing tract  
extending from anastomosis

# IPAA: Most Common Leak Site

Axial T2



Axial T1 FS + IV



Can be indistinguishable  
from Crohn fistula

**Time Course and Location**

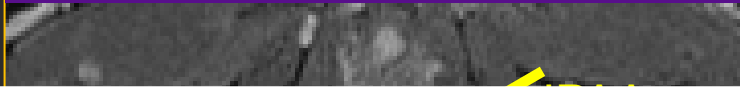
## Imaging Findings:

T2 hyperintense enhancing tract  
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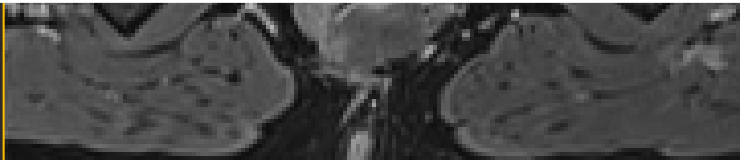
# Companion: Crohn Disease

Axial T1 FS + IV

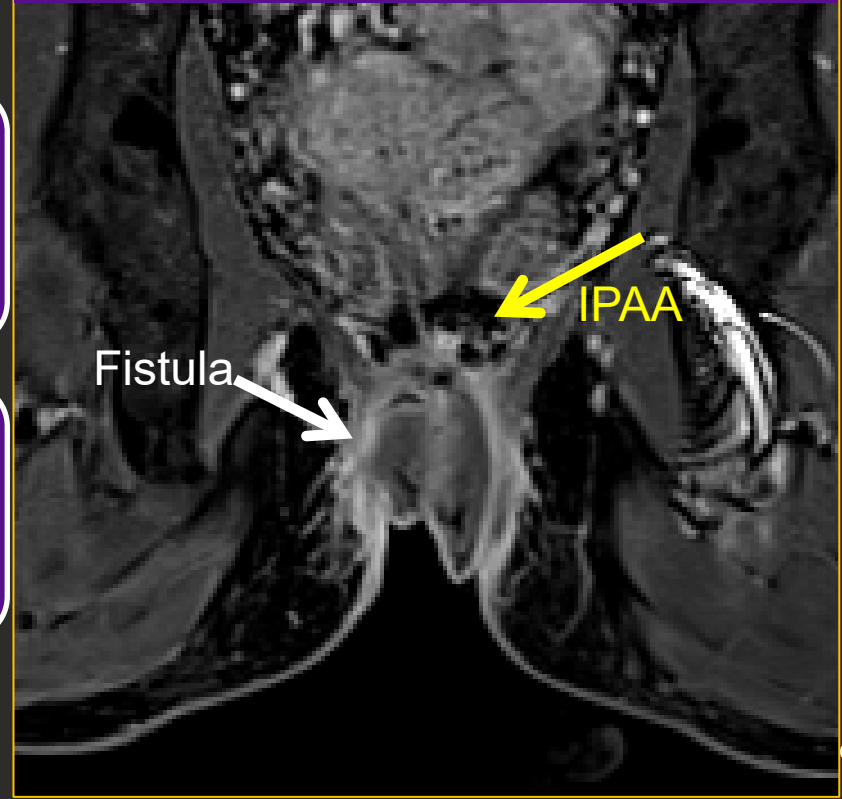


*Complex* perianal fistulas or abscesses that develop 6-12 months after IPAA surgery, *not at anastomosis*

Up to 13% of patients undergoing IPAA for UC will subsequently be reclassified with Crohn disease



Coronal T1 FS + IV

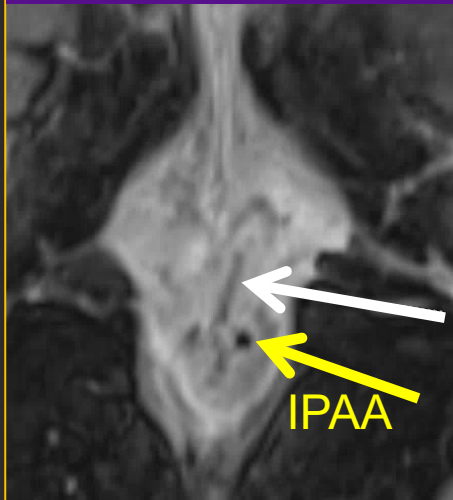


# Leak Versus Crohn Disease

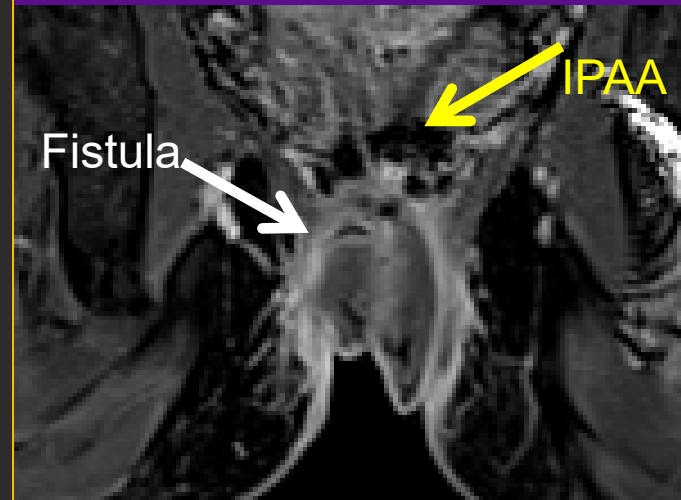
Axial T2



Axial T1 FS + IV



Coronal T1 FS + IV

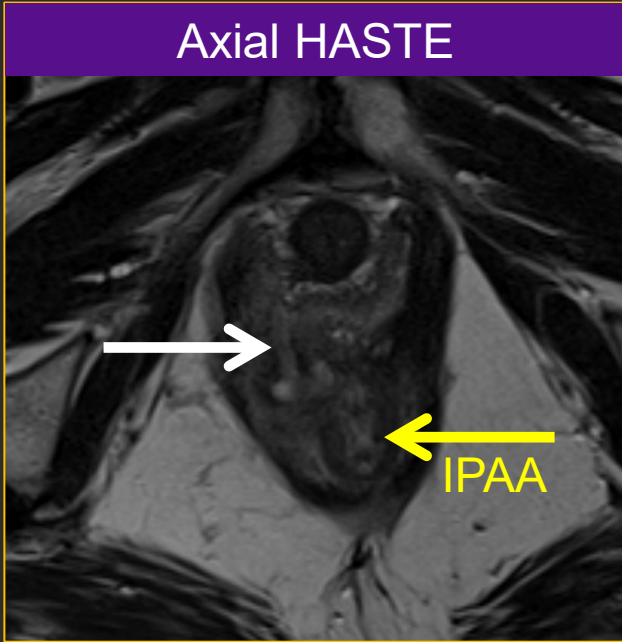


**Imaging Findings:**  
Linear tract **AT** anastomosis,  
soon after surgery

**Imaging Findings:**  
Complex fistula **BELOW** IPAA,  
6-12 months after surgery

# Pouch-Vaginal Fistula

Axial HASTE

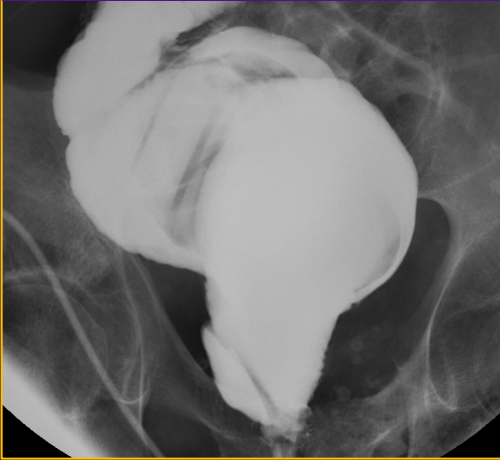


Posterior vaginal wall stuck during IPAA stapling, soon after surgery

Consider Crohn's phenotype if 6-12 months after surgery

# IPAA Stricture

Pre-evacuation



Post-evacuation



May be 2/2 ischemia or chronic dehiscence

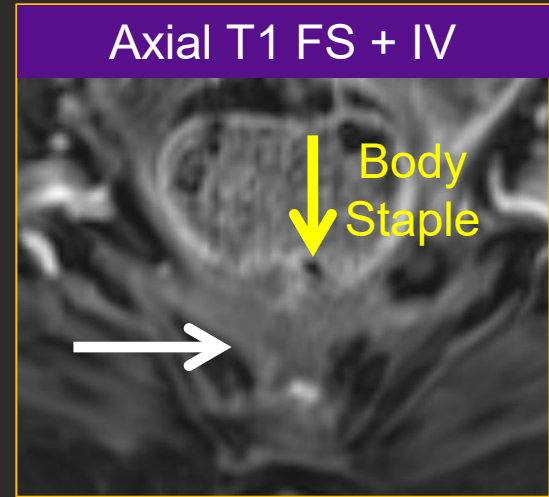
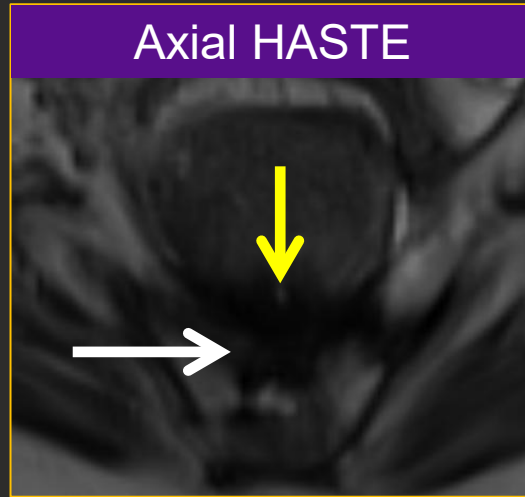
Not typically appreciated on cross-sectional imaging

## Imaging Findings:

No significant emptying after evacuation

**Post-evacuation GGE evaluates pouch functionality**

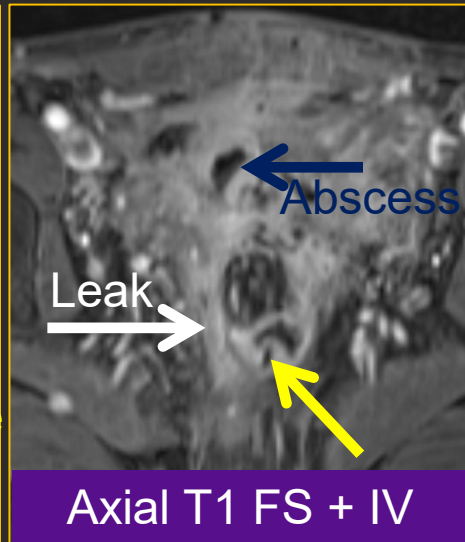
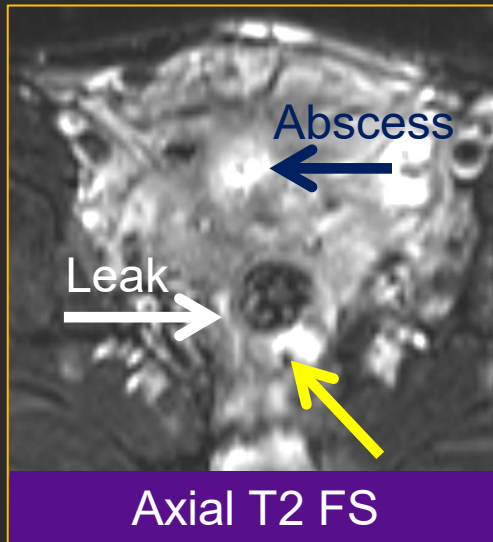
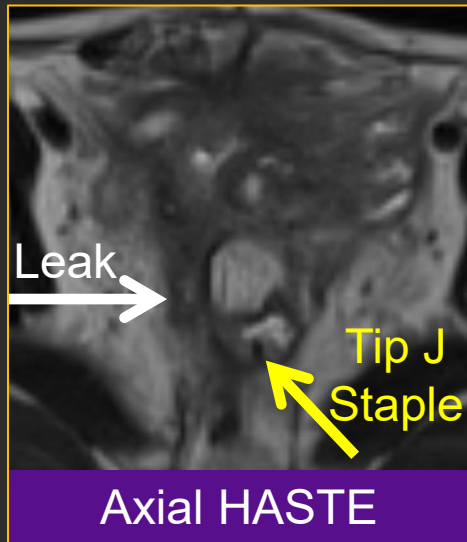
# Chronic Pouch Body Leak



**Imaging Findings:**  
T2 hypointense, progressively enhancing

**Can cause chronic pouchitis**

# Tip of J Leak



## Imaging Findings:

T2 hyperintense, enhancing tract arising from tip of J

**Need HIGH index suspicion if fluid near tip J; often overlooked**

# Rectal Cuff or ATZ

Measurement

Cuffitis

# Rectal Cuff or ATZ Measurement

Long rectal cuff remnant predisposes to recurrent inflammation, neoplasm

1.8 cm

Distance = 18.0 mm

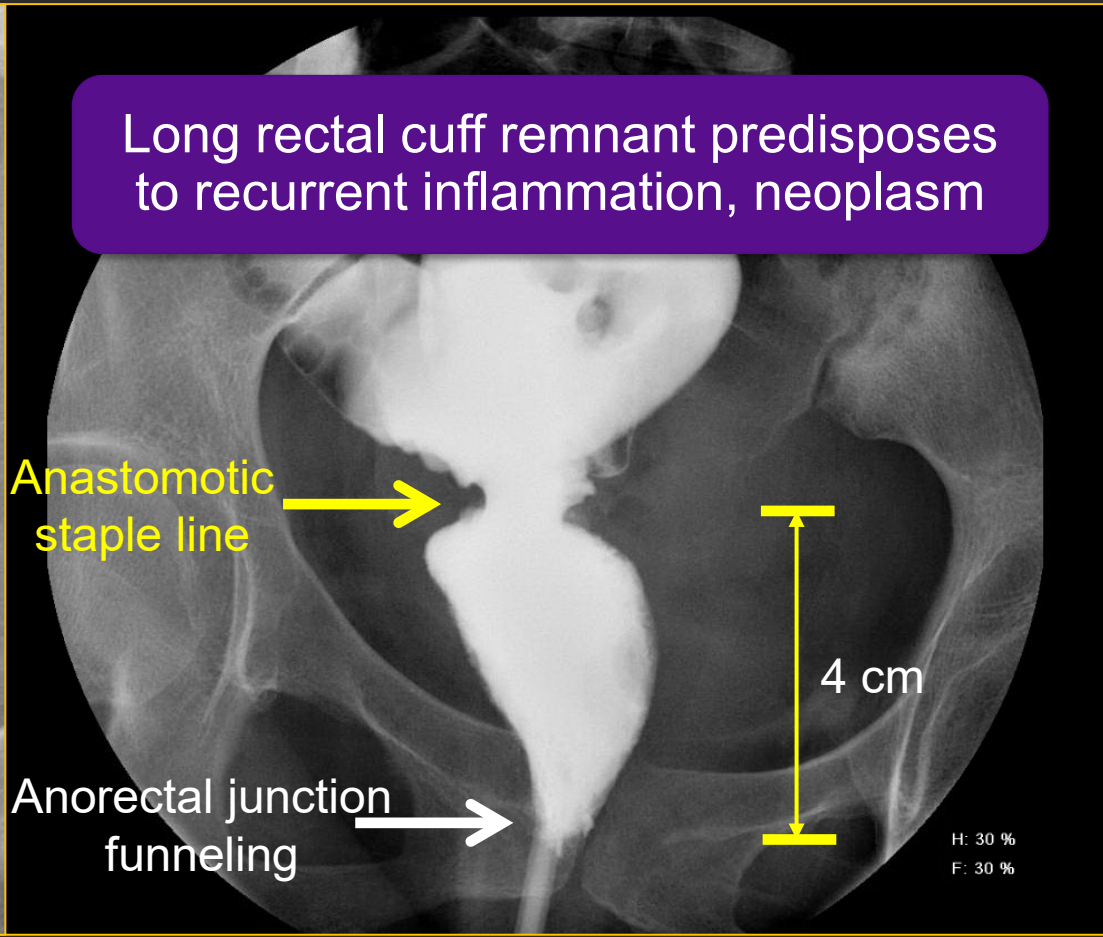
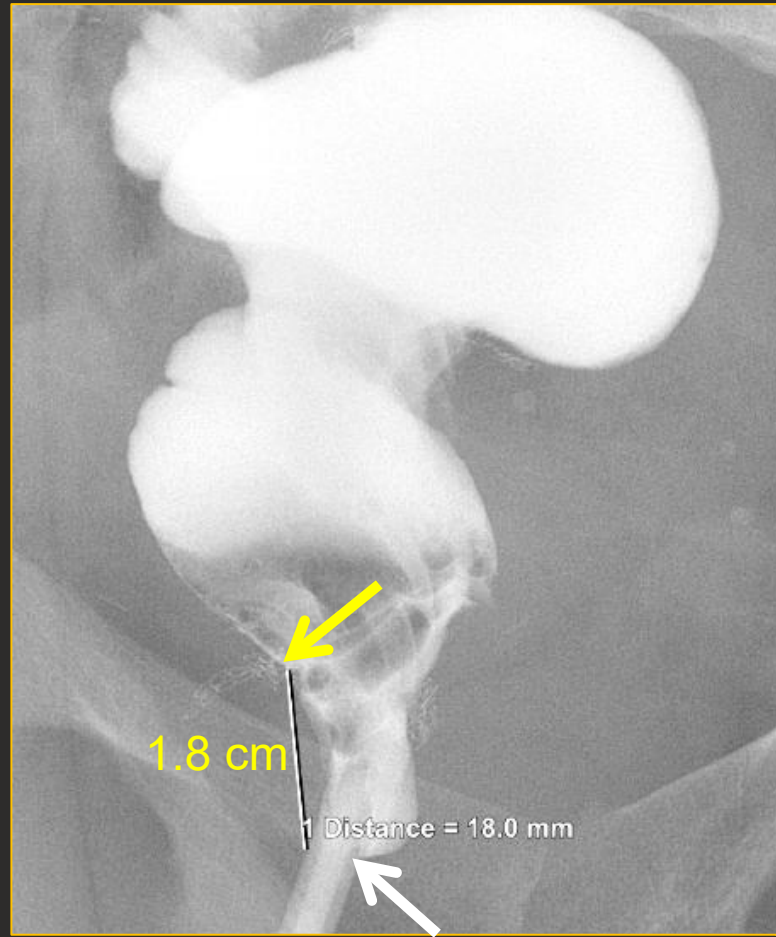
Anastomotic  
staple line

Anorectal junction  
funneling

4 cm

H: 30 %

F: 30 %





# Cuffitis

Axial T1 FS + IV



UC patient, long cuff → cuffitis and  
**pouch outlet obstruction**

Frequently coexists with pouchitis;  
isolated cuffitis 4%

Treatment: mesalamine

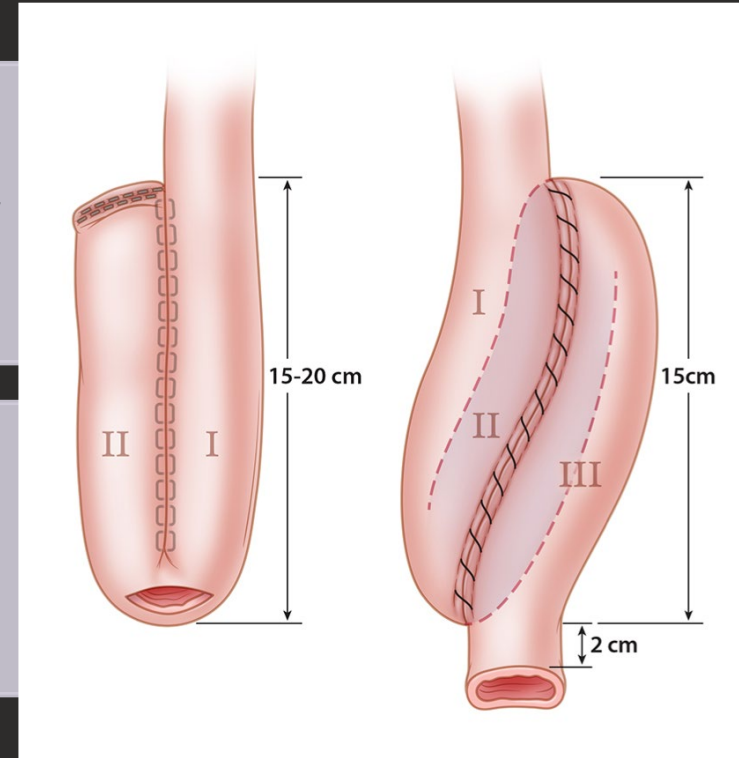
# Pouch Outlet

Pouch outlet:

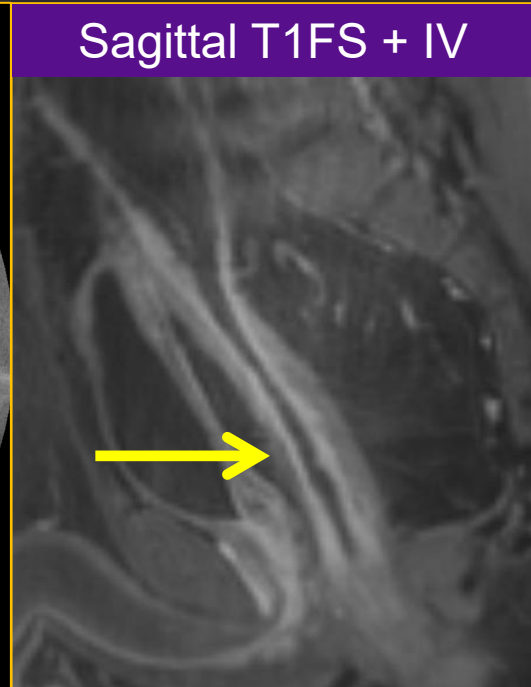
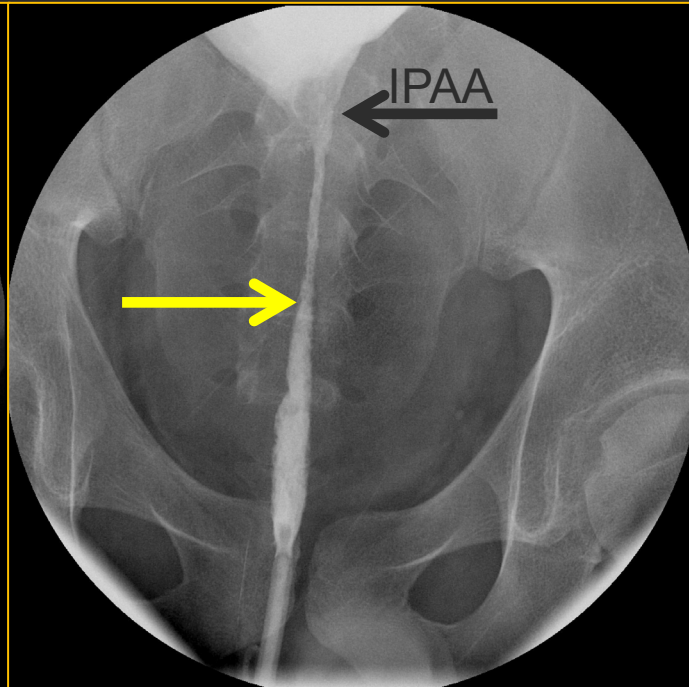
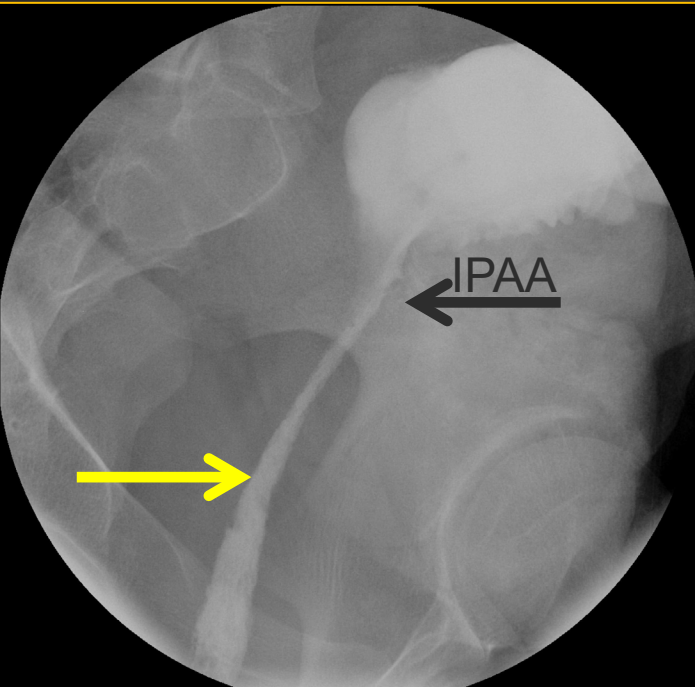
- Exit conduit distal to pouch body

Outlet obstruction:

- Cuffitis
- IPAA stricture
- Very long cuff J-pouch
- Efferent limb syndrome S-pouch

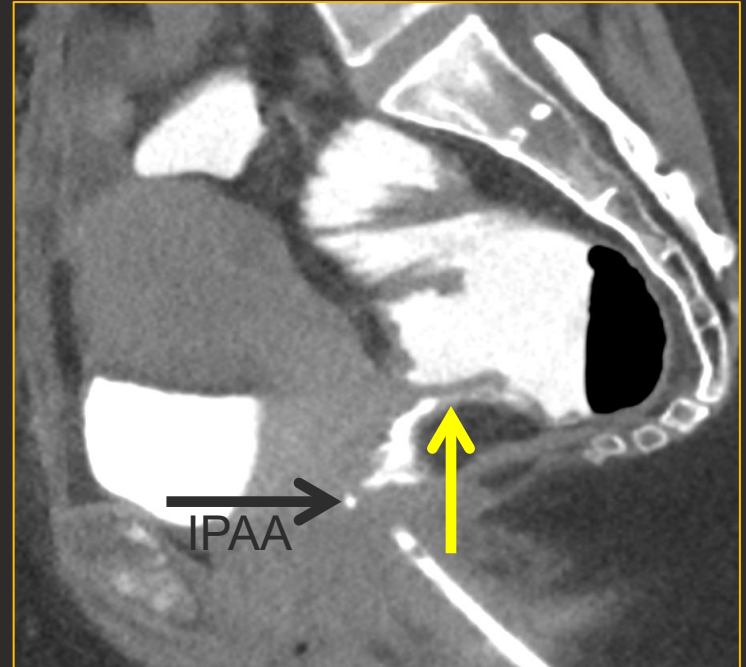
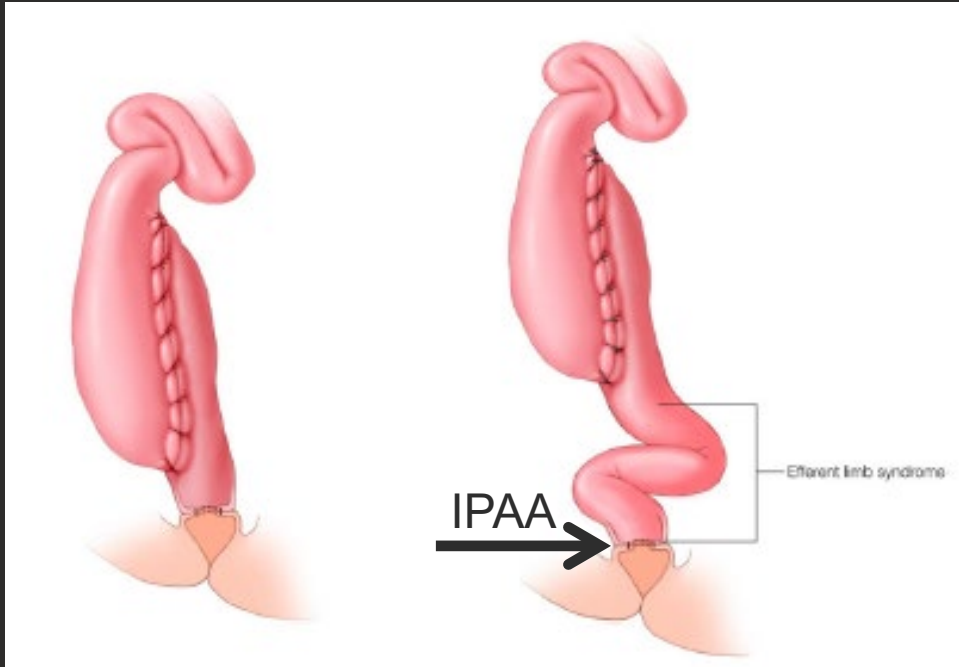


# Long Rectal Remnant (J-Pouch)



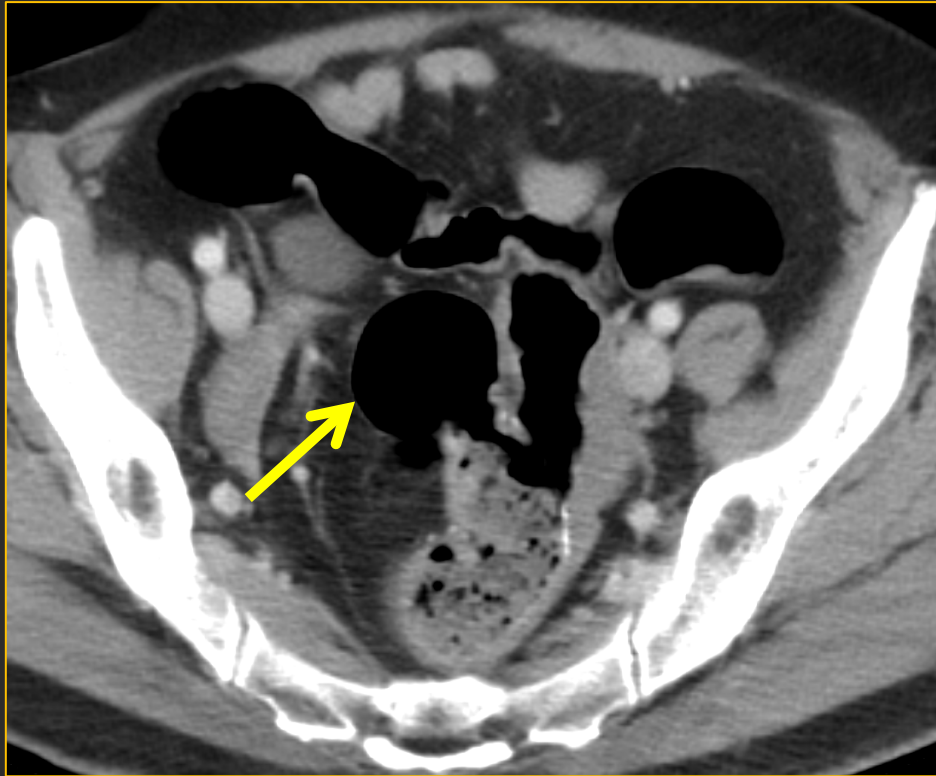
Long rectal cuff (below IPAA), cobblestoning (CD), enhancement, and stricture

# Efferent Limb Syndrome (S-Pouch)



Long S-pouch efferent limb (above IPAA) mobile → kinking and outlet obstruction

# Pouch Outlet Obstruction



“Floppy, rabbit ear” J-pouch appendage (arrow)

Pouch filled with fecal material

Pouchitis

# Pouch Body

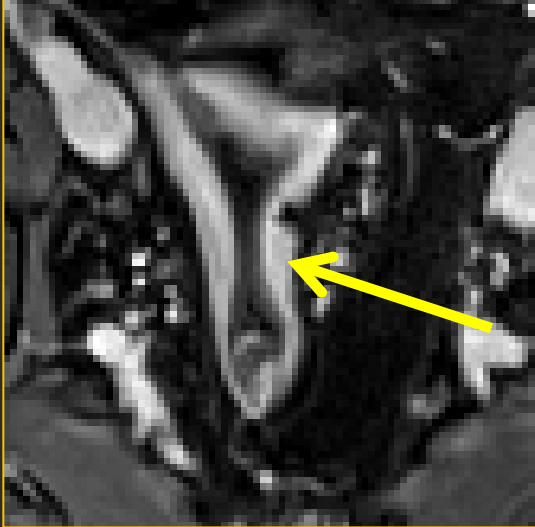
Pouchitis

Polyps

Stricture

# Pouchitis

Axial T1 FS + IV



DWI



Common late complication (50% of UC patients)

Bacterial overgrowth?  
Colonic metaplasia?  
Ischemia 2/2 surgery?

## Imaging Findings:

- Mural edema, hyperenhancement, wall thickening
- Restricted diffusion
- Peripouch fat stranding

# Pouch Polyps



Axial T1 FS + IV

**Imaging Findings:**  
Enhancing round lesions in pouch

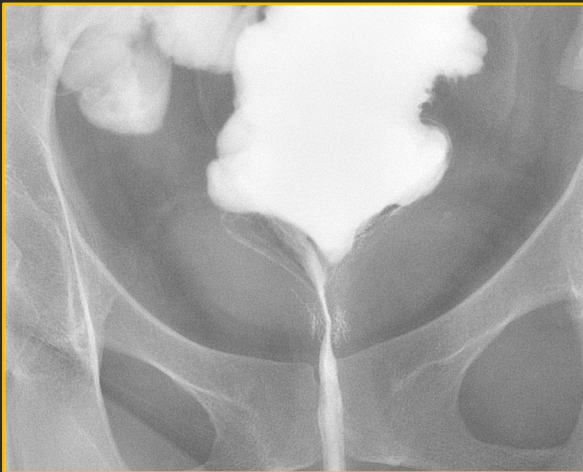
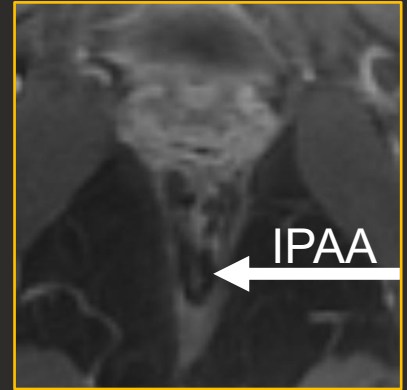
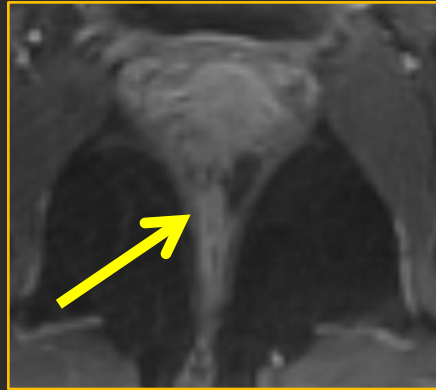
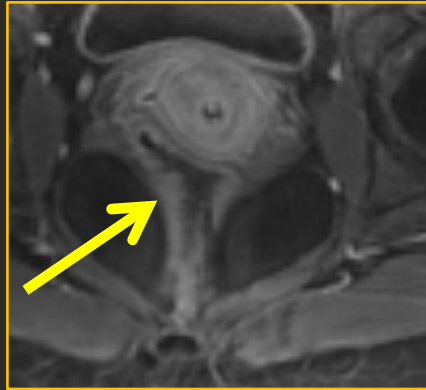
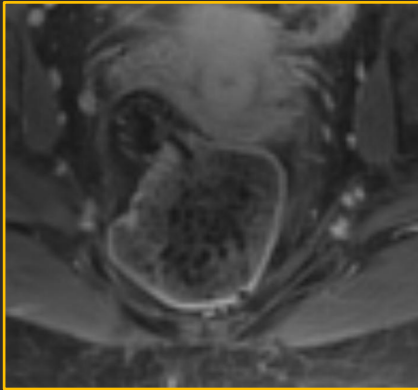
More typical with UC or CD, but may infrequently occur with FAP

Biopsy *always* performed to confirm inflammatory nature

Removal if atypical appearance, >1cm, bleeding, or **FAP** patient



# Distal Pouch Body Stricture



**Imaging Findings:**

Smooth narrowing of distal pouch body, above IPAA

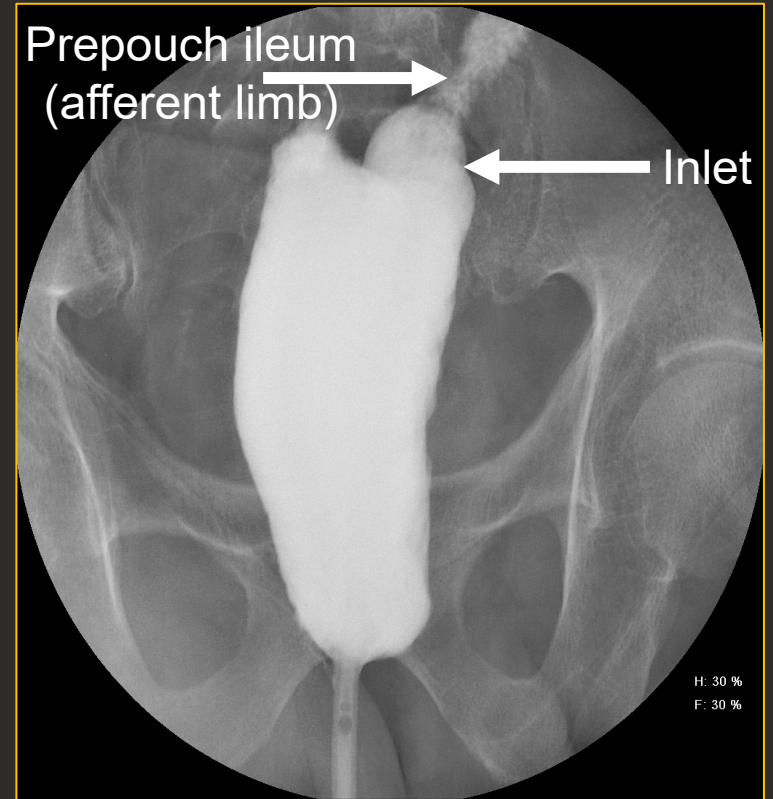
No evacuation on GGE



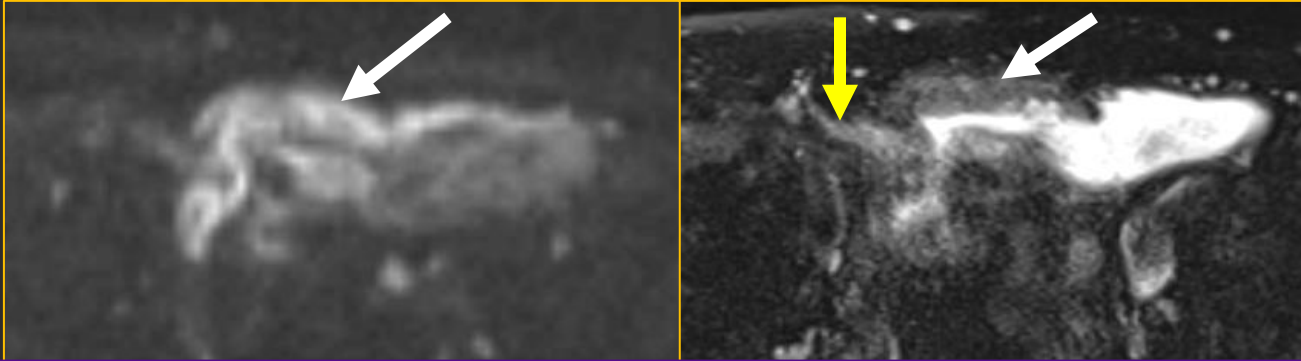
# Pouch Inlet and Prepouch Ileum

Prepouch ileum disease

Afferent limb syndrome



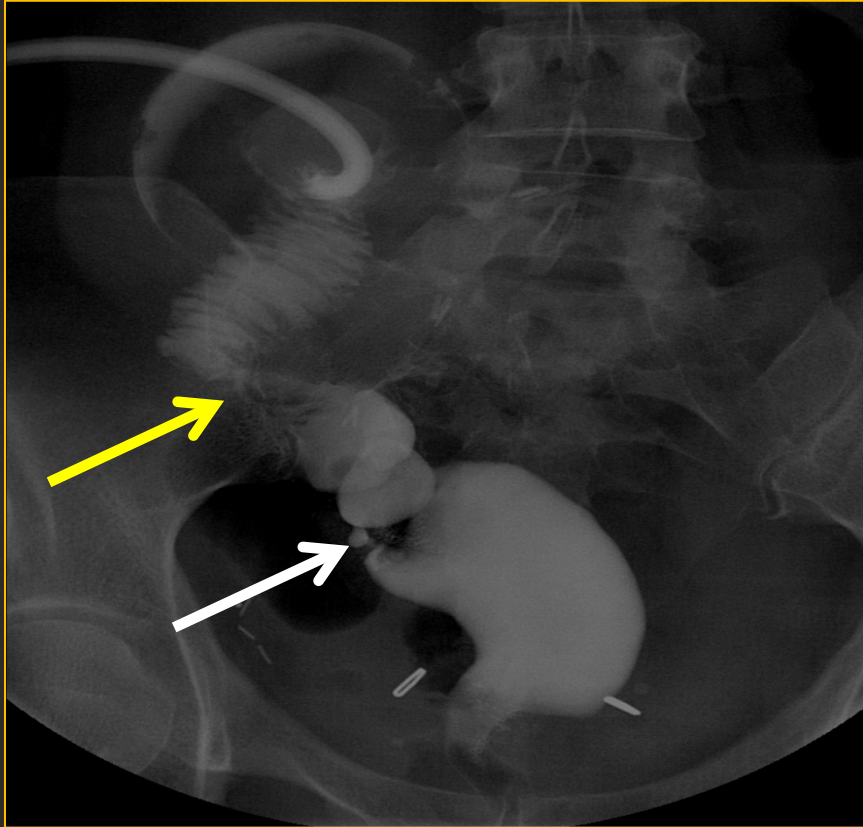
# Pouch Inlet and Prepouch Ileum



Inflammatory stricture in prepouch ileum can appear similar to ischemic stricture, BUT **associated penetrating complications characteristic of CD**

**Crohn Disease!**

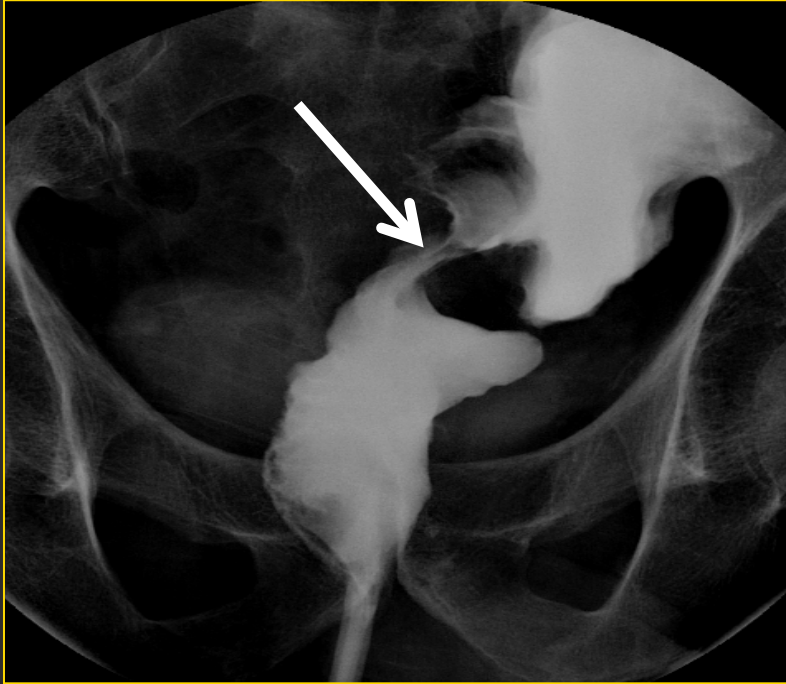
# Afferent Limb Syndrome + Volvulus



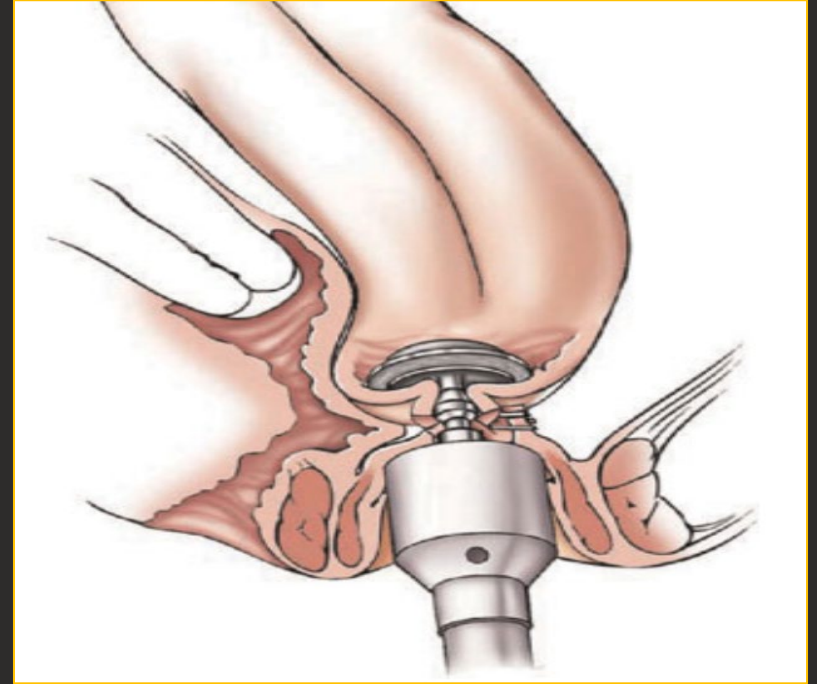
Mechanical obstruction due to acute angulation of afferent limb – adhesion, stricture, volvulus

Surgical management, with excellent long term outcomes

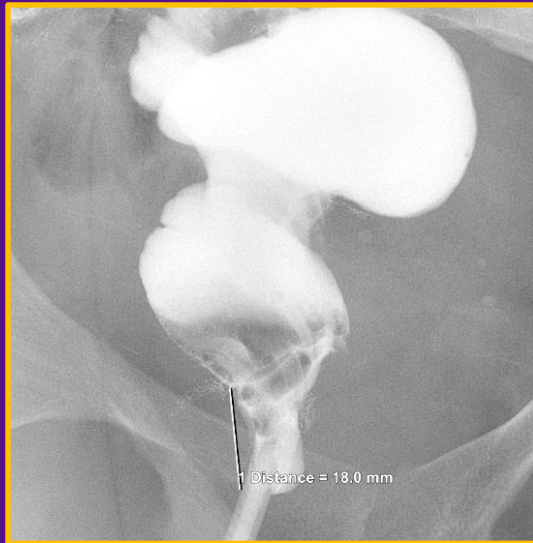
# Volvulus vs. Twist



Pouch inlet!  
Chronic obstructive symptoms



Surgical technical error with  
twisting during IPAA stapling



Anastomosis or Suture Line

Rectal Cuff or ATZ

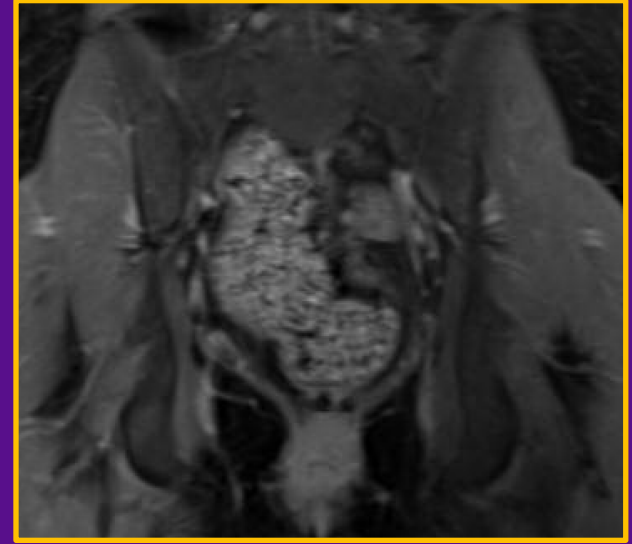
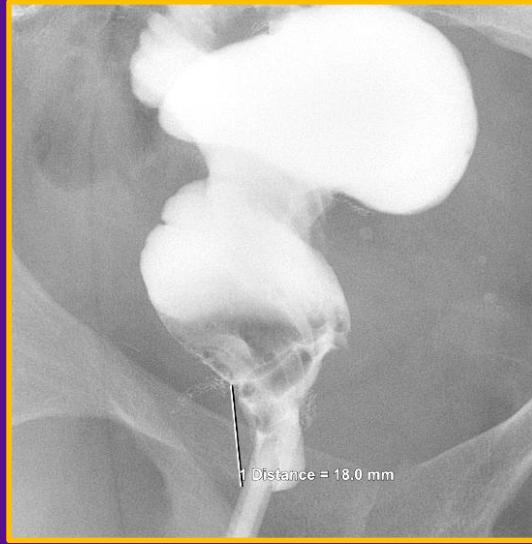
Pouch Outlet

Pouch Body

Pouch Inlet and Prepouch Ileum

# POUCH ASSESSMENT





# MULTIMODALITY IMAGING EVALUATION OF THE ILEAL POUCH



**THANK YOU**

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