Uncomplicated pouchitis: MRI appearance
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Case Type: Clinical Cases
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Patient: 43 years, male

Clinical History:
A patient with long-standing history of ulcerative colitis and previous proctocolectomy with ileal pouch-anal anastomosis was re-evaluated by the gastroenterologist for chronic symptoms including increased stool frequency, pelvic discomfort and intermittent subocclusion episodes. Laboratory tests disclosed mild ESR elevation.

Imaging Findings:
Pouch endoscopy revealed ileal pouch with diffusely hyperaemic, friable, bleeding and ulcerated mucosa. Pelvic MRI was acquired using a phased-array coil with no special preparation, and included both unenhanced and enhanced scans after i.v. injection of standard-dose paramagnetic contrast agent. The ileal pouch appeared scarcely distended, characterised by a diffuse circumferential wall thickening with mural stratification, and abnormal signal intensity; the pouch wall diffusely enhanced after contrast administration. In the proliferating pelvic fat planes at least one 8 mm peripouch lymph node was present, showing signal and enhancement features similar to those of the pouch wall. No signs of active fistulous track or abscess collections were detected.

Having ruled out possible pouch-related septic complications, a diagnosis of simple pouchitis was made and the patient did well with antibiotic therapy (based upon ciprofloxacin).

Discussion:
Proctocolectomy with ileal-pouch anal anastomosis (IPAA) is the surgical treatment of choice for patients with familial adenomatous polyposis and intractable ulcerative colitis (UC). By removing the entire diseased bowel while preserving the anal sphincter function, this surgery allows normal transanal defecation and thus an acceptable lifestyle.
Pouchitis represents the most frequent complication after IPAA surgery, especially in UC patients with coexisting sclerosing cholangitis: incidence depends upon definition criteria and increases with the duration of follow-up, with reported rates approaching 50-60% after 10 years. Its pathophysiology is still scarcely explained. Clinically, pouchitis manifests with frequent watery or bloody stools, sometimes incontinence and tenesmus, pelvic pain and possible fever. Therapy consists in antibiotics plus other medications such as probiotics, infliximab and oral or enema steroids.
At endoscopy, pouchitis appears as an acute, nonspecific inflammation with mucosal oedema and erythema, friability, erosions and ulcerations. At biopsy, histological findings are consistent with mixed acute and chronic inflammation, coexisting with villous atrophy, crypt distortion and hyperplasia.
In the past, the clinical suspicion of possible pouch-related complications was investigated by means of fluoroscopic examination ("pouchography") during injection of water-soluble contrast medium. Reported radiographic findings
consistent with pouchitis include spicules, dilatation of folds and pouch spasm.

MRI, usually acquired with intravenous contrast medium, is invaluable in assessing pelvic postoperative anatomy and complications, allowing the detection of both mural and extramural changes. Its advantages include limited biologic invasiveness, multiplanar imaging, high spatial and contrast resolution, and detection of enhancement consistent with active inflammation.

MRI features indicative of pouchitis include pouch wall thickening and positive enhancement, correlated with an erythematous ulcerated mucosa at endoscopy, and with active inflammation and ulceration at histology. The peripouch fat usually shows proliferation and sometimes stranding, changes associated not only with surgical complications but also with chronic inflammatory status of UC. Commonly, there is detectable lymphadenopathy (at least 3 peripouch nodes or one >1 cm).

Uncomplicated pouchitis is associated with a good long-term prognosis and rarely leads to surgical removal. As this case exemplifies, MRI is invaluable to address the clinician need to differentiate patients with simple pouchitis from those with septic IPAA complications (such as leakages, fistulas and abscesses) that require aggressive therapy and are possible even in patients with normal endoscopic findings.

**Differential Diagnosis List:** Pouchitis

**Final Diagnosis:** Pouchitis

**References:**


Figure 1

**Description:** Mid-sagittal T2- (a) and contrast-enhanced T1-weighted (b) images. Moderately distended, fluid-filled ileal pouch occupying the presacral space. **Origin:**
Description: Mid-sagittal T2- (a) and contrast-enhanced T1-weighted (b) images. Moderately distended, fluid-filled ileal pouch occupying the presacral space. Origin:
Description: Axial STIR (a) and unenhanced T1-weighted (b) images. Ileal pouch showing circumferential wall thickening with stratification and abnormal signal intensity. Lymph node in the proliferating mesorectal fat. Origin:
**Description:** Axial STIR (a) and unenhanced T1-weighted (b) images.
Ileal pouch showing circumferential wall thickening with stratification and abnormal signal intensity. Lymph node in the proliferating mesorectal fat. **Origin:**
Description: Post-contrast axial T1-weighted (c) and fat-suppressed SPIR (d) images. Thickened pouch wall shows diffuse mural enhancement. Positive contrast uptake involves peripouch lymph node too. Origin:
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