Acquired diverticular disease of the jejunum and ileum, imaging features and pitfalls

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Jejunioleal diverticulosis remains a rare and underestimated condition, involving mostly the elderly.

Jejunioleal diverticulosis

Acquired diverticula of the jejunum and the ileum has a reported incidence of 0.3-2.3%. 80-90% of involved patients are **older than 40**, without gender predominance. Jejunioleal diverticulosis is most often **asymptomatic**. 15-20% of patients exhibits minimal chronic symptoms. Serious complications are rare (6-15%). Acquired small bowel diverticula are **herniations of the mucosa and the submucosa** through the musculosa.

Small bowel diverticula (stars).

These are considered to be pulsion type diverticula, occurring in localized small bowel areas of weakness, in close proximity to the penetrating mesenteric vessel branches. Normal jejunioleal diverticula are usually **multiple** and appear to be outpouchings arising from the **mesenteric side** of the bowel, with a neck, a nonvisible wall, a variable contents and size.

Jejunal diverticular hemorrhage. The coronal view show an extravasation of contrast material (arrow) within a diverticulum. Other small bowel diverticula (stars) are seen.

Complications

Diverticulitis

Diverticulitis is **the most frequent** complication of jejunioleal diverticulosis (2-6%). Symptoms are not specific. Most cases are **mild** and treated medically with success. The most reliable sign is the direct visualization of the pathologic diverticulum, which can be **jejunal** (87%), or less commonly ileal (13%) and presents **inflammatory changes** (such as diverticular wall thickening and mesenteric fat stranding)

Uncomplicated jejunal diverticulitis. The jejunal diverticulum (arrow) is communicating with the small bowel through a neck (star) and is surrounded by a fat stranding on the mesenteric edge (arrowhead).

Other jejunal or ileal diverticula are almost always seen and help the diagnosis of the acquired form.

Diverticular haemorrhage

Diverticular hemorrhage manifests as acute or chronic bleeding and symptoms consists of rectal bleeding, melena or shock.

CT examination allows accurate diagnosis of the bleeding site.

Bowel obstruction

Mechanical obstruction may occur by different mechanisms, mainly **enterolith ileus** and **diverticular adhesions**.

Enterolith ileus. The coronal view shows dilated small bowel loops (arrow) and diverticula (arrowheads) upstream of an endoluminal obstacle (star).

Pitfalls

Extradigestive gas without perforation

Extraintestinal gas can be found in **asymptomatic** patients with jejunioleal diverticulosis.

Extradigestive gas in an asymptomatic patient with jejunioleal diverticulosis. The axial view shows thin gas bubbles (arrowheads) surrounding a small-bowel diverticulum without inflammatory changes.

The most relevant CT sign is **thin** gas bubbles surrounding the whole diverticula without inflammatory changes.

Pseudo-ischemic presentation

The normal wall of the diverticulum is usually virtual. Normal diverticula can **simulate** a lack of enhancement of the small bowel wall.

Non complicated jejunioleal diverticulosis simulating acute mesenteric ischemia. The coronal view shows multiple jejunal diverticulas (arrowheads) with non enhanced wall.

Main differential : Meckel's diverticulum

Symptoms are related to complications: hemorrhage, diverticulitis, intestinal obstruction, neoplasia within the diverticulum. The surgery is recommended especially in children.

Meckel's diverticulum appears on CT scan as a blind-ending outpouching arising from the **antimesenteric side** of the **distal ileum**.

Meckel's diverticulitis (arrowhead).

Conclusion

Jejunioleal diverticulosis can lead to life threatening conditions requiring CT-examination. CT-signs of these complications and some pitfalls must be known.