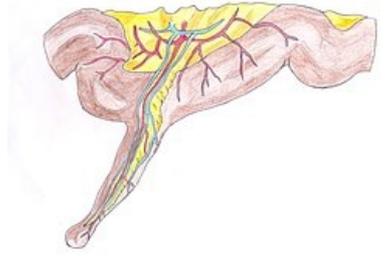


# Meckel's Diverticulum

**Meckel's diverticulum (MD)** is the most common congenital anomaly of the gastrointestinal tract (GIT), occurring in approximately 2-3% of the population. It is located 20-60 cm (up to 2 feet) from the ileocecal valve on the antimesenteric side of the ileum. It is a remnant of embryonic tissue called the *omphaloenteric duct*, with a portion closer to the intestine remaining as an intestinal outpouching of the intestinal wall. In most cases, it does not cause any symptoms and remains asymptomatic throughout life. However, it can manifest as bleeding in the small intestine of varying degrees (40%), intestinal obstruction (30 %) or inflammation in the form of diverticulitis (20 %).



Meckel's diverticulum - vascular supply diagram

## Pathogenesis

It is the result of incomplete obliteration of the *omphaloenteric duct*, which connected the fetal yolk sac to the primitive intestine. Obliteration usually occurs between the 5th and 7th week of gestation.

The presence of all three layers of the intestinal wall in Meckel's diverticulum makes it a true diverticulum.

Heterotopic tissue is present in approximately 50% of cases. The most common types include:

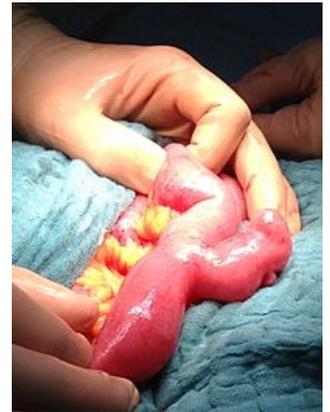
- Gastric mucosa, which can be colonized by *Helicobacter pylori*, leading to inflammation in the diverticulum.
- Pancreatic tissue.
- A combination of both.

## Complications

All diseases affecting the small intestine can also manifest in Meckel's diverticulum (MD).

The main complications include:

- Bleeding - the source can be an ulcer, angiodysplasia, atypical mucosa, tumor, or inflammation.
- Intestinal obstruction - invagination, volvulus, component of a hernia, diverticular torsion.
- Perforation - due to inflammation, strangulation, tumor, or ulcer.
- Inflammation - Crohn's disease,
- Tumor (carcinoid, sarcoma, GIST) - less commonly.
- Various combinations of complications.
- In children, the most common complication is bleeding around the age of 5 and later intestinal obstruction.
- In adults, intestinal obstruction is more common.

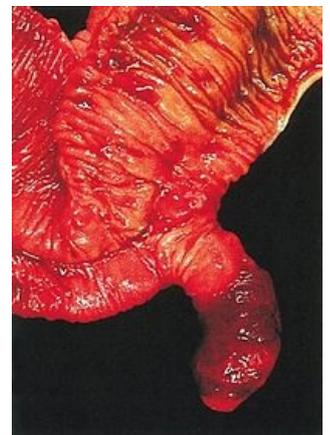


Meckel's diverticulum - intraoperatively

## Diagnosis

In adulthood, it is particularly difficult to diagnose. Meckel's diverticulum should be considered in cases of otherwise unexplained intestinal obstruction, bleeding in the gastrointestinal tract, vague inflammatory symptoms, nausea, and vomiting. Complicated MD easily mimics gastroenteritis or bleeding from peptic ulcer disease.

- X-ray - can show enteroliths or calcified wall of MD.
- Ultrasonography (Sono) - mainly reveals tumor involvement.
- Arteriography - reveals the source of bleeding.
- Enteroclysis - imaging of the relief of the intestinal wall using a contrast agent.
- CT
- Scintigraphy -  $^{99m}\text{Tc}$  pertechnetate scan.



Meckel's diverticulum

## Therapy

We address complications through resection. The extent of resection depends on the size of the diverticulum and associated lesions.

There is no consensus on the management of asymptomatic MD.



Meckel's diverticulum

# Links

## Related Articles

- Esophageal Diverticula
- Digestive Tract Diverticula
- Development of the Intestine

## Sources

- VOKURKA, Martin – HUGO, Jan. *Velký lékařský slovník*. 5. edition. Maxdorf, 2005. ISBN 80-7345-058-5.
- ZEMAN, Miroslav – KRŠKA, Zdeněk. *Speciální chirurgie*. 3. edition. Galén, c2014. pp. 236-238. ISBN 9788074921285.