Ischemia of visceral arteries

Template:Pracuje se

Visceral ischemia is caused by a sudden or slow onset of the *a. Mesenterica sup.* and at the same time in the case of stenosis or closure of the *celiac artery* or the *inferior mesenteric artery*. This acute occlusion causes severe intestinal ischemia. If the artery occlusion occurs slowly, sufficient **collateral circulation** develops due to the anatomical arrangement of the vessels of the gastrointestinal tract.

Chronic occlusion of the mesenteric artery

Causes

The main causes include atherosclerosis, rarely arteritis, fibromuscular dysplasia (congenital anomalies). Anatomical causes may be atherosclerosis, fibromuscular dysplasia, or external compression. The main functional cause is iliofemoral (aorto-iliac) steal syndrome (closure of the lower aorta or common pelvic artery); blood goes through the inferior mesenteric artery - rectal sup. - a. Rectalis media - a. Iliaca interna - a. Iliaca communis - a. Iliaca externa - a. Femoralis.

Clinical picture

The main symptoms are abdominal pain occurring 10-60 minutes after a meal (angina abdominis), diarrhea or constipation, sometimes a murmur is heard, progressive cachexia. The diagnostic methods can be used to test the patient orally and then monitor the pH in the jejunum - a steal phenomenon with reversal of blood flow to the stomach, in patients with intestinal ischemia the pH in the jejunum decreases.

The differential diagnosis is Cancer of pancreas, stomach or peptic ulcer.

Therapy

In severe abdominal angina with cachexia, the therapy is surgical. Another therapy is transaortic endarterectomy. A significant proportion of patients are generally at risk, so bypass - from the infrarenal aorta is preferred . If this part of the aorta is sclerotic, the supracrelial section of the aorta is used, so the bypass goes behind the pancreas. In PTA, there is a risk of acute thrombotic occlusion with a fatal outcome.

Acute mesenteric ischemia

It is most often **caused by embolism** into the superior mesenteric artery, less by plaque thrombosis, aneurysm, or aortic dissection. Another cause may be venous thrombosis.

Mesenteric artery embolism

Clinical picture

Sudden severe abdominal pain with poor physical findings. It may cause vomiting and blood may appear in the stool. After a few hours, the pain subsides a bit, the peristalsis ceases, the vascular ileus develops until diffuse peritonitis.

The course

1. up to 6 hours - initial stage with pain and shock, early intervention can preserve the intestine
2. 6–12 hours - pain calms down, the general condition worsens, paralytic ileus with the wall gangrene develops
3. after 12 hours - intestinal perforation and peritonitis

- laboratory - leukocytosis, maybe higher lactate, and amylase

Diagnosis - angiography, but usually the fastest possible laparotomy is more effective

The time factor is very important - the ischemic intestine necrotizes within 8 hours.

Therapy

With early surgery - **embolectomy with a Fogarty catheter**, after 24 hours it is advisable to perform a second laparotomy and revise the intestine, resect any necrosis. In case of clear necrosis, resection after small emboli - segmental resection, stem closure - up to the colon is necessary. It used to be considered incompatible with life, today it is possible to consider maintaining on parenteral nutrition.

Closure of the inferior mesenteric artery

Thrombosis on the atherosclerotic plaque most often occurs. Clinically, there is pain in the lower left quadrant, the stool is usually mixed with blood and detached mucosa, later signs of low ileus. Surgical treatment is resection of the affected segment

Mesenteric artery thrombosis

It manifests itself similarly to embolism, but the symptoms may begin more slowly. There may be a history of abdominal angina. Thrombectomy is usually insufficient, bypass should be established.

Non-occlusive mesenteric ischemia

Causes

The causes may be insufficient perfusion - in case of cardiac failure, arrhythmias, AIM, hypovolemia after burns, polytraumas. Arteriography shows spastic segments of the mesenteric artery.

Therapy

Already during angiography, we can topically apply a vasodilator (eg 30 mg papaverine). Then we continue with the infusion of the substance. It is necessary to address the causes.

Mesenteric venous thrombosis

Causes

The cause is a coagulation disorder, which often occurs after infections (viral and bacterial) - such as salmonellosis.

Clinical picture

It is manifested by abdominal pain, nausea, vomiting, fever. There are progressive signs of peritoneal irritation.

Diagnostics

It is usually diagnosed during a laparotomy. The problem can be detected even without surgery - duplex ultrasound and CT with contrast.

Therapy

The therapy is complete heparinization.

Renovascular hypertension

Renovascular Hypertension:

Pathogenesis

It can be either an AT slice at the site of an arterial gap (in 2/3 of patients) or fibromuscular dysplasia (especially in young women). Insufficient perfusion pressure leads to activation of the renin-angiotensin-aldosterone axis. It is the cause of about 5-10% of all hypertension (in large hypertension they account for 30-40%).

Examination

Examinations include renal duplex sono, arteriography, isotope renography or renin vein sampling (RIA).

Therapy

The therapy is preferably surgical - we reduce the pressure and prevent the progression of kidney damage. Today, much of the stenosis can be treated with PTA.

Surgical therapies can be:

1. aortorenal bypass by autologous vein
2. renal artery endarterectomy
3. in case of severe changes (mainly fibromuscular) - ex vivo reconstruction on the kidney, perfused with preservative solution
4. in the worst-case - nephrectomy

Links

related articles

- Rekonstrukce tepen
- Ischemická choroba srdeční
- Chronická ischemická choroba dolních končetin
- Uzávěry velkých žil

References

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