CORRESPONDENCE

Acute Mesenteric Ischemia: a Vascular Emergency
by Prof. Dr. med. Ernst Klar, PD Dr. med. Parwis B. Rahmanian, Prof. Dr. med. Arno Bücker, Prof. Dr. med. Karlheinz Hauenstein, Prof. Dr. med. Dr. h.c. Karl-Walter Jauch and Prof. Dr. med. Dr. phil. Bernd Luther in volume 14/2012

Fatal Outcome
The authors pointed out the necessary diagnostic evaluation using biphasic contrast-enhanced computed tomography. However, nearly all patients with acute mesenteric ischemia have multiple comorbidities and vascular damage, and have correspondingly poor renal function. For this reason, radiologists often argue that contrast-enhanced CT cannot be undertaken.

This ignores the fact that the alternative to further renal damage caused by the contrast medium is death. CT before exploratory laparotomy will therefore be possible in very few cases only.

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Conflict of interest statement
The author declares that no conflict of interest exists.

Differential Diagnostic Aspects Are Lacking
Acute abdomen requires emergency treatment, including emergency diagnostic evaluation. In the introduction of their review article, the authors say that “While [...] around 1% of all patients with acute abdomen have AMI [acute mesenteric ischemia], AMI is the cause of acute abdomen in up to 10% of patients aged over 70”, without explaining differential diagnostic aspects.

Intestinal angioedema with massive mucosal swelling presents with similar symptoms; this seems to be neither more common nor rarer than AMI.

Intestinal angioedema can have allergic triggers but can also be caused by taking angiotensin converting enzyme inhibitors and angiotensin II receptor blockers (many cases have been documented in the literature) or be provoked by non-steroidal anti-inflammatory drugs. An individual case of intestinal angioedema has been described in a patient after taking a calcium antagonist (1).

Hereditary angioedema (HAE, a defect in C1-INH synthesis), angioedema with normal concentrations of C1-esterase-inhibitor but functional insufficiency, and angioedema based on acquired C1-esterase-inhibitor deficiency (acquired angioedema, AA) as well as idiopathic angioedema should also be included in the differential diagnostic evaluation. While a patient’s medical history can provide an early indication of angioedema due to medication, diet, or hereditary causes and thus prevent unnecessary laparotomy, hereditary angioedema and other forms need to be confirmed using specific laboratory-based examination.

In case of clinical suspicion, this should include immunological determination of C1-INH, functional determination of C1-INH, measurement of C1, C2, C4, CH50, and, if required, measurement of autoantibodies against C1-INH (2).

Adding intestinal angioedema as a differential diagnosis to the well-known range of causes for acute abdomen might be worth mentioning, in order to clearly differentiate from vascular-ischemic causes.

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Digitalis Medication as the Cause of NOMI
I have read the article on the vascular emergency that is acute mesenteric ischemia with interest. Regarding the pathophysiology especially of nonocclusive mesenteric ischemia (NOMI), the authors focus on two scenarios: firstly, chronic hemodialysis, and secondly, clinical status after heart surgery. It is important to mention in this context that especially in older patients, overdosage of digitalis medication can be the cause of nonocclusive mesenteric ischemia, which is rare but none the less worth considering in the differential diagnostic considerations (1).

REFERENCES
A New Approach to Early Diagnosis?
A comprehensive overview of acute mesenteric ischemia was long overdue, because awareness of this complex disease entity, which clinicians often think about too late, especially in the intensive care setting, urgently needs improving (1). The authors mention the problems in capturing symptoms in critically ill patients in intensive care: analgesic sedation, mechanical ventilation, volume replacement, and vasopressor therapy rarely allow for targeted diagnostic evaluation. On the other hand, increasingly ageing and comorbid patients would lead us to expect a higher estimated number of unknown cases of mesenteric underperfusion—but exact data are currently lacking.

The authors emphasize that urgent imaging (contrast-enhanced computed tomography/angiography) is the diagnostic method of choice. For ventilated, critically ill patients in intensive care, this requires huge efforts with an inherent (transport) risk. Furthermore, the incidence of contrast-induced renal failure with subsequent need for renal substitution treatment is some 16%, associated with longer-term intensive care and hospital treatment and higher mortality (2).

Contrast-enhanced ultrasound might offer an innovative diagnostic approach: injecting a contrast medium that is free from side effects (phospholipid coated, sulphur hexafluoride gas containing microbubbles as reflectors for ultrasound waves) increases the imaging resolution of vessels many times. Encouraging reports are available for the reliable diagnosis of complex vascular structures, for example, after surgery for abdominal aortic aneurysm (3), and a convincing prospective evaluation has been undertaken for the early detection of intestinal ischemia (4). Our own positive experiences have convinced us that contrast-enhanced ultrasound could replace “traditional” imaging—which is expensive and takes time, while also having a higher side effect profile—at least in some cases.

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