6.2 Visceral Artery Aneurysms

6.2.1 Introduction

Aneurysms of the renal and intestinal arteries are relatively rare. In 1970, Stanley et al. [17] and Deterling [6] published a review of the compiled clinical experience of the prevalence, diagnosis and treatment of 1500 aneurysms of the intestinal arteries as published in the literature [17]. Since then, in an additional 50 articles, “case reports” have often been published [9]. Recently, an overview of demographic data concerning the prevalence, diagnosis and treatment has been presented [16].

6.2.2 Epidemiology

- The exact prevalence of renal aneurysms is unknown but probably low.
- In a study on 8500 patients subjected to angiography for nonrenal disease, the prevalence was 0.9% [18].
- Swedish investigators estimated the prevalence from an autopsy study to be about 0.7–0.9% [19].
- The prevalence of aneurysms of the visceral arteries as reported in the literature varies.
- Due to an increase in the quantity and quality of abdominal imaging by computer tomography (CT) and magnetic resonance (MR) techniques, these aneurysms are now more often detected as an accidental finding than in the past.
- As a result more insight has developed with regard to the prevalence, natural history and complications.
- Aneurysms can be present in all visceral arteries, in particular: the coeliac artery with its branches, the hepatic and splenic artery and its branches and more distal branches (the gastroduodenal and pancreaticoduodenal arteries).
- The prevalence of aneurysms in the splenic artery, one of the more commonly observed aneurysms, has been estimated between 0.1 and 100/1000 patients [3].
- Aneurysms of the coeliac artery and superior mesenteric arteries are less frequent with an estimated prevalence of 0.13/1000 [10].
- Of aneurysms of the superior mesenteric artery and its branches, there are no data on prevalence but such aneurysms seem to be extremely rare.

6.2.3 Aetiology

Aneurysms may be caused by varies diseases. The most frequent causes are:
- Atherosclerosis
- Fibrodysplasia
- Medial degeneration
- Trauma
- Connective tissue diseases such as polyarthritis nodosa or Ehlers–Danlos syndrome
- Infection.

Splenic Artery Aneurysms

- In addition, splenic artery aneurysms may be associated with portal hypertension and splenomegaly.
- They are also relatively frequent in fertile women for which a hormonal contribution has been postulated. In women, and particularly multiparous women, splenic artery aneurysms are seen four times more than in men [4].
- Associations with infectious disease such as syphilis, tuberculosis and bacterial infections were reported in the past but never since the introduction of antibiotic therapy.
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6.2.4 Symptoms

- Renal and visceral aneurysms are usually without symptoms and are often an incidental finding on ultrasound or, in particular, CT or MR.
- In addition, they are too small for identification by physical examination.

6.2.5 Complications

- Two types of complications can be anticipated: ischaemia due to thrombosis or distal embolization and rupture.

Ischaemia and Distal Embolization

- Ischaemia of visceral organs due to thrombosis of an aneurysm seems to be extremely rare.
- Distal embolization can be deduced from the angiogram if renal infarcts are present [11].

Rupture

- Rupture with bleeding is a rare but often catastrophic complication.
- The symptoms are usually abdominal pain and shock.
- If rupture occurs in the peritoneal cavity, shock is deep and the time for diagnostic tests is not available, then emergency laparotomy is performed, at which time the diagnosis is made often with high mortality.

Fig. 6.2.1a Asymptomatic aneurysm of the hepatic artery. The various branches [common hepatic artery, left (LHA) and right hepatic artery (RHA), gastroduodenal artery] are secured with vessel loops.