Pylephlebitis is a very rare and dangerous complication of inflammatory abdominal processes, mainly appendicitis (1) and diverticulitis (2). We describe a case of peridiverticular inflammation leading to an extensive phlebitis of the adjacent sigmoid vein, extending to the inferior mesenteric vein up to the proximal portal vein, with distal embolus in the left portal vein. Contrast CT and multiplanar reconstructions allowed early diagnosis, and with antibiotic and anticoagulation therapy, no liver abscess developed.

Case report

A 76-year-old lady was admitted for altered clinical status, left flank and left lower abdominal pain, fever (39°C). Blood tests showed highly elevated CRP levels (320 mg/l). In her past history one episode of peri-diverticulitis two years earlier, treated without surgery. The abdominal CT performed at admission in the emergency department revealed a large air collection just close to the sigmoid colon, with infiltration of the adjacent fat. The sigmoid veins were thrombosed, as was the inferior mesenteric vein up to the lower portal vein. And the left intrahepatic portal vein was also thrombosed.

Intravenous antibiotic therapy (amoxicillin clavulanate) and sub-cutaneous injections of low molecular weight heparin (LMWH) were started, leading to early biological response (CRP levels at day 4 lowered to 40 mg/l) and slower clinical response. No hepatic abscess developed and the patient left the hospital after 20 days, still on oral antibiotic and anticoagulation therapy.

Discussion

Pylephlebitis was a dread-full and often lethal complication of some cases of appendicitis before the utilization of the antibiotics. Diverticular disease has replaced appendicitis as the most common cause of pylephlebitis, with other possible sources including appendectomy injections of low molecular weight heparin (LMWH)
often with drainage of these abscesses, especially in case of liver abscess, antibiotic therapy is recommended, or more hepatic abscess. Long term side, but untreated can lead to one of those abnormalities will subside, but untreated can lead to one or more hepatic abscess. Long term antibiotic therapy is recommended, especially in case of liver abscess, often with drainage of these abscesses. Anticoagulotherapy remains controversial but is often used: it did not prevent cavernous transformation of the portal vein in some series (3).

Doppler ultrasound of the main portal vein and branches is very reliable but the analysis of the mesenteric veins is limited in the evaluation of these patients due to its operator dependency and inability to accurately depict vascular anatomy in the presence of overlying bowel gas (radiographics). Especially when, as in our patient, the clinical symptoms are in the left lower quadrant and not in the right hypochondrium.

It was claimed that low-dose unenhanced multi-detectors CT has a diagnostic performance similar to that of contrast-enhanced standard-dose multi-detector row CT in patients suspected of having acute diverticulitis (4) but it's accuracy to exclude this type of serious complication should still be scrutinized. CT with intravenous injection of iodinated contrast is superior to non-contrast CT imaging of the portal vein. Scanning can be performed at the “portal” phase 70 sec after intravenous injection of iodinated contrast at a rate of 2 or 3 cc/sec but false positive diagnosis of venous thrombosis have been made when scanning was initiated too early after contrast injection. This can be avoided with a “biphasic injection of iodinated contrast” (60 cc at a rate of 2 cc/sec, 30 sec of pause followed by a second injection of 60 cc at a rate of 3 cc/sec and than 20 cc of saline), as in our patient, which allows nice depiction of the arterial vessels with at the same time complete filling of the veins (Fig. 1A and 2A). Diagnostic CT findings are to be searched in close vicinity to the sigmoid colon (thrombosed branch of the inferior mesenteric vein (Fig. 1A) and distally: segmentally thrombosed portal branch (Fig. 2A) or liver abscess. Sequential reading of the axial and coronal slices allows precise analysis of the vessels involved by the thrombus, but, in small vessels such as the inferior mesenteric vein, curved reconstructions can help in recognizing the vessels and their continuity (Fig. 2A, B).

Conclusion

Unenhanced MDCT can detect acute diverticulitis with a very high accuracy, but complications such as venous thrombosis and portal vein emboli could be difficult to diagnose without intravenous injection. In this case, early diagnosis and early treatment may have helped avoiding the development of intrahepatic abscesses. Multiplanar and curved reconstructions can help recognizing the small thrombosed veins.

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