Case 11994

Eurorad

An aortic prosthesis infection

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ISSN: 1563-4086
Section: Cardiovascular
Area of Interest: Arteries / Aorta
Procedure: Diagnostic procedure
Imaging Technique: CT-Angiography
Imaging Technique: CT
Special Focus: Aneurysms Infection Prostheses
Arteriosclerosis Case Type: Clinical Cases
Authors: C.-V. Salvan-Schaschl
Patient: 69 years, male

Clinical History:

The patient was presenting with recent onset of diffuse abdominal pain. He claimed lower extremity pain starting months ago. For 20 years he had an aortobiliacal prosthesis surgery. And he had a known renal insufficiency which was treated with dialysis.
Imaging Findings:

A contrast enhanced CT with angiography examination was performed with the suspicion of superior mesenterial artery embolism. We found thrombosis of the aorta and aortic prosthesis, beginning above the renal arteries and extending to the external iliacal artery bilaterally, with multiple air bubbles and an eccentric aneurysma. Free air was found retroperitoneal. No active extravasation was present. An infection of the aortic prosthesis was diagnosed. A duodenal loop was supposed to communicate with the aortic prosthesis, but after thorough examination this was not the case. The superior mesenterial artery was open. Atherosclerosis of the aorta, truncus coeliacus and poor contrast enhancement of the right renal artery and occlusion of the left renal artery was found. Free intraperitoneal fluid, thickened intestinal loops and a voluminous, hydropic gallbladder were also detected. Intraoperatively the prosthesis infection was confirmed, with no aortoabdominal fistula.
Discussion:

Aortic prosthesis and graft infection occurs rarely, however, it is associated with high morbidity and mortality [1, 2, 3, 4]. Usually elderly patients are involved [2, 4, 5, 6, 7, 8] and the infection arises in a closer interval to the surgery [4, 8, 9, 10]. The incriminated pathogen is variable, but highly aggressive [1, 2, 3, 4, 6, 7, 9, 10, 11, 12]. CT-enhanced examination is the method of choice [4, 13] and leads to the diagnosis especially when intraluminal aortic prosthesis air bubbles are detected. A few case reports mentioned the presence of an aortoduodenal fistula [2, 5, 7]. The immediate antimicrobial therapy with or without explantation of the prosthesis is mandatory [1, 2, 3, 4, 5, 6, 10]. Follow-up is necessary, since cases of relapse and complications are reported [1, 2, 8].
Differential Diagnosis List: An aortic prosthesis infection, Retroperitoneal perforation of a hollow organ, Pancreatitis, Inflammatory aortitis, Mesenterial ischaemia, Osteomyelitis

Final Diagnosis: An aortic prosthesis infection

References:

Maze MJ, Laws P, Buckenham T, et al. (2013) Outcomes of infected abdominal aortic grafts managed with antimicrobial therapy and graft retention in an unselected cohort. Eur J Vasc Endovasc Surg 45(4):373-80 (PMID: 23485067)

Fatima J, Duncan AA, de Grandis E, et al (2013) Treatment strategies and outcomes in patients with infected aortic endografts. J Vasc Surg 58(2):371-9 (PMID: 23756338)

Harlock JA, Qadura M, Lee G, Szalay DA (2013) Infected aortic stent graft with Propionibacterium acnes. Vasc Endovascular Surg 47(5):394-6 (PMID: 23632775)

Cernohorsky P, Reijnen MM, Tielliu IF, van Sterkenburg SM, van den Dungen JJ, Zeebregts CJ (2011) The relevance of aortic endograft rosthetic infection. J Vasc Surg 54(2):327-33 (PMID: 21397443)

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Solomon B, Kim B, Rockman C, Veith FJ, Jacobowitz G. (2012) Aortic endograft infection with aortoabdominal fistula associated with adjacent vertebral body mycobacterial osteomyelitis (Pott's disease). Ann Vasc Surg 26(2):276e1-4 (PMID: 22304865)

Ayra S, Coleman DM, Knepper J, et al. (2013) . Outcomes after late explantation of aortic endografts depend on indication for explantation. Ann Vasc Surg 27(7):865-73 (PMID: 23993104)

Veger HT, Hedeman Joosten PP, Thoma SR, Visser MJ (2013) Infection of endovascular abdominal aortic aneurysm stent graft after urosepsis: case report and review of the literature. Vascular 21(1):10-3 (PMID: 22619381)

Heyer KS, Modi P, Morasch MD, et al. (2009) Secondary infections of thoracic and abdominal aortic endografts. J Vasc Interv Radiol 20(2):173-9 (PMID: 19097807)

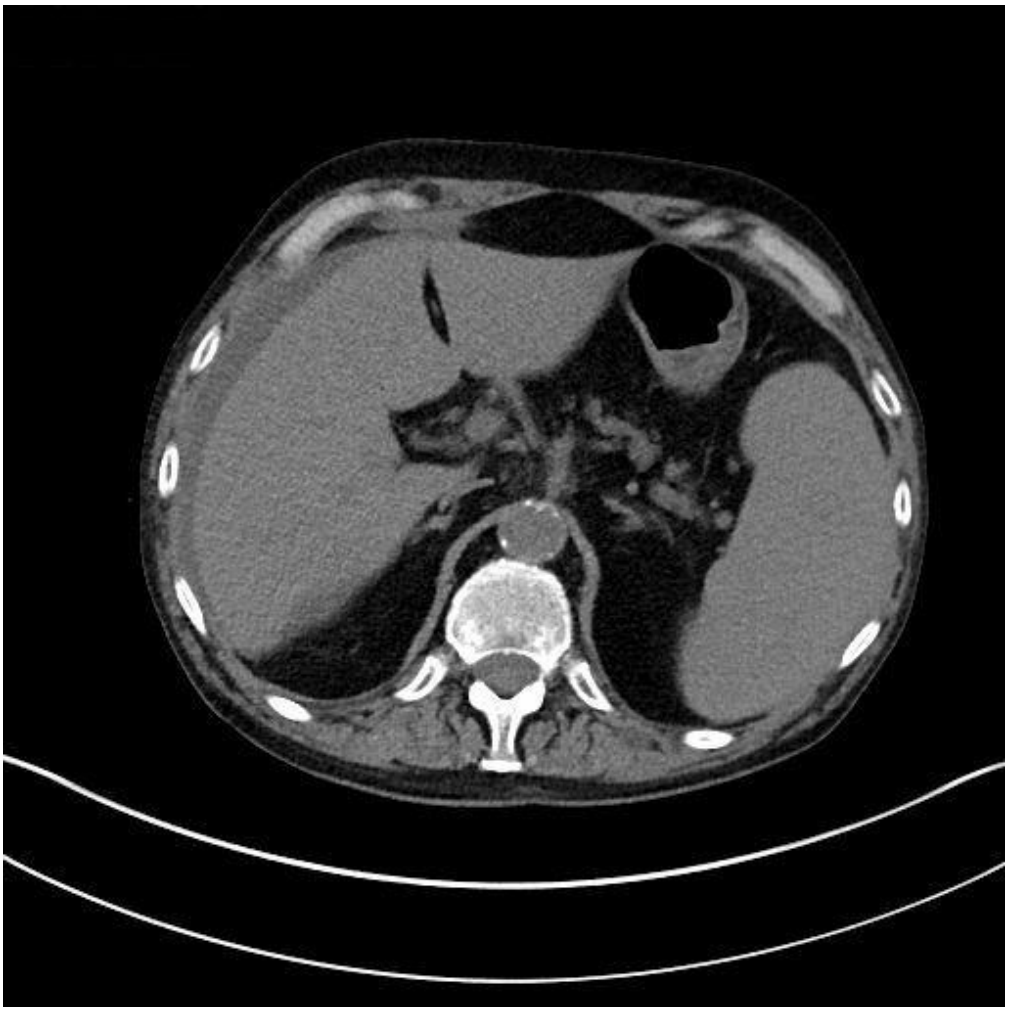
Shah S, Sinno S, Vandevender D, Schwartz J (2013) Management of thoracis aortic graft infections with the omental flap. Ann Plast Surg 70(6):680-3 (PMID: 22868324)

Kordzadeh A, Rhodes KM, Hanif MA, Scott H, Panayiotopoulos Y (2013) Ruptured crypotogenic mycotic abdominal aortic aneurysm by Salmonelle enteritidis. Ann Vasc Surg 27(7):973.e9-17 (PMID: 23706179)

Mathias J, Mathias E, Jausset F, et.al. (2012) Aorto-enteric fistulas: a physiopathological approach and computed tomography diagnosis. Diagn Interv Imaging 93(11):840-52 (PMID: 23092721)

Figure 1

a

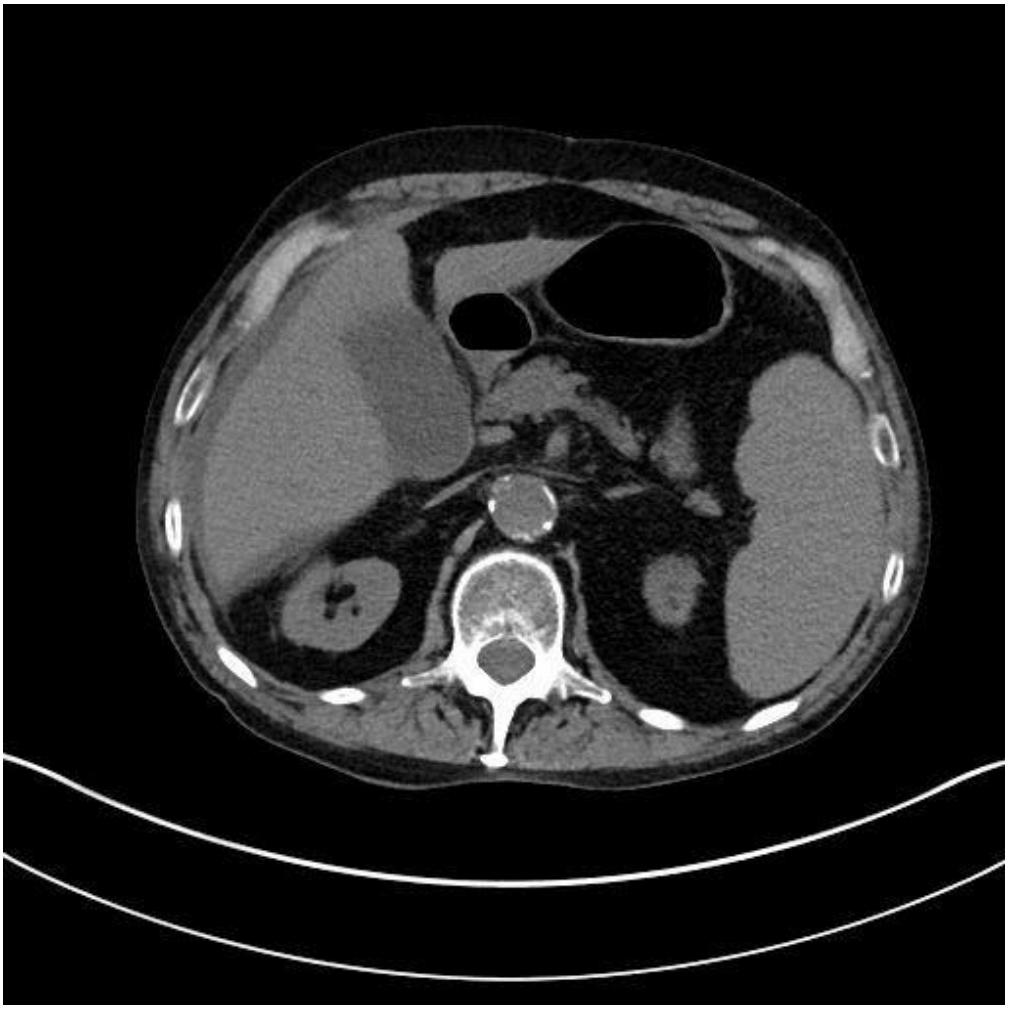


Description: Atherosclerosis of the aorta. Free intraperitoneal fluid. **Origin:** Division of General Radiology, Department of Radiology, Medical University of Graz, Austria

b

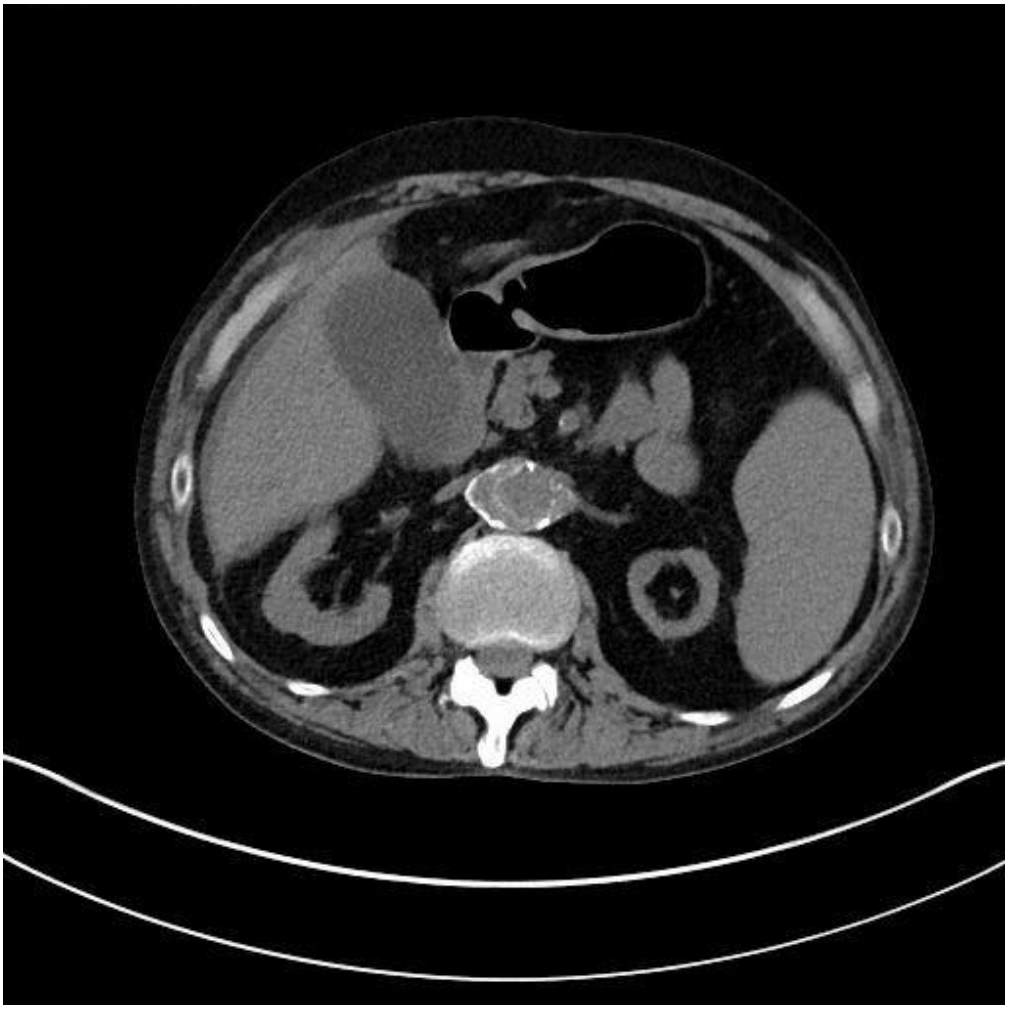
Description: Atherosclerosis of the aorta. Free intraperitoneal fluid. **Origin:** Division of General Radiology, Department of Radiology, Medical University of Graz, Austria

c



Description: Atherosclerosis of the aorta. Free intraperitoneal fluid. **Origin:** Division of General Radiology, Department of Radiology, Medical University of Graz, Austria

d



Description: Atherosclerosis of the aorta with an eccentric aneursyma. Free intraperitoneal fluid. Hydropic gallblder. **Origin:** Division of General Radiology, Department of Radiology, Medical University of Graz, Austria

e

Description: Atherosclerosis of the aorta. Aortic prosthesis. Free intraperitoneal fluid. Hydropic gallbladder. **Origin:** Division of General Radiology, Department of Radiology, Medical University of Graz, Austria

f

Description: Atherosclerosis of the aorta with aneurysma and multiple air bubbles. Aortic prosthesis. Free intraperitoneal fluid. **Origin:** Division of General Radiology, Department of Radiology, Medical University of Graz, Austria

g

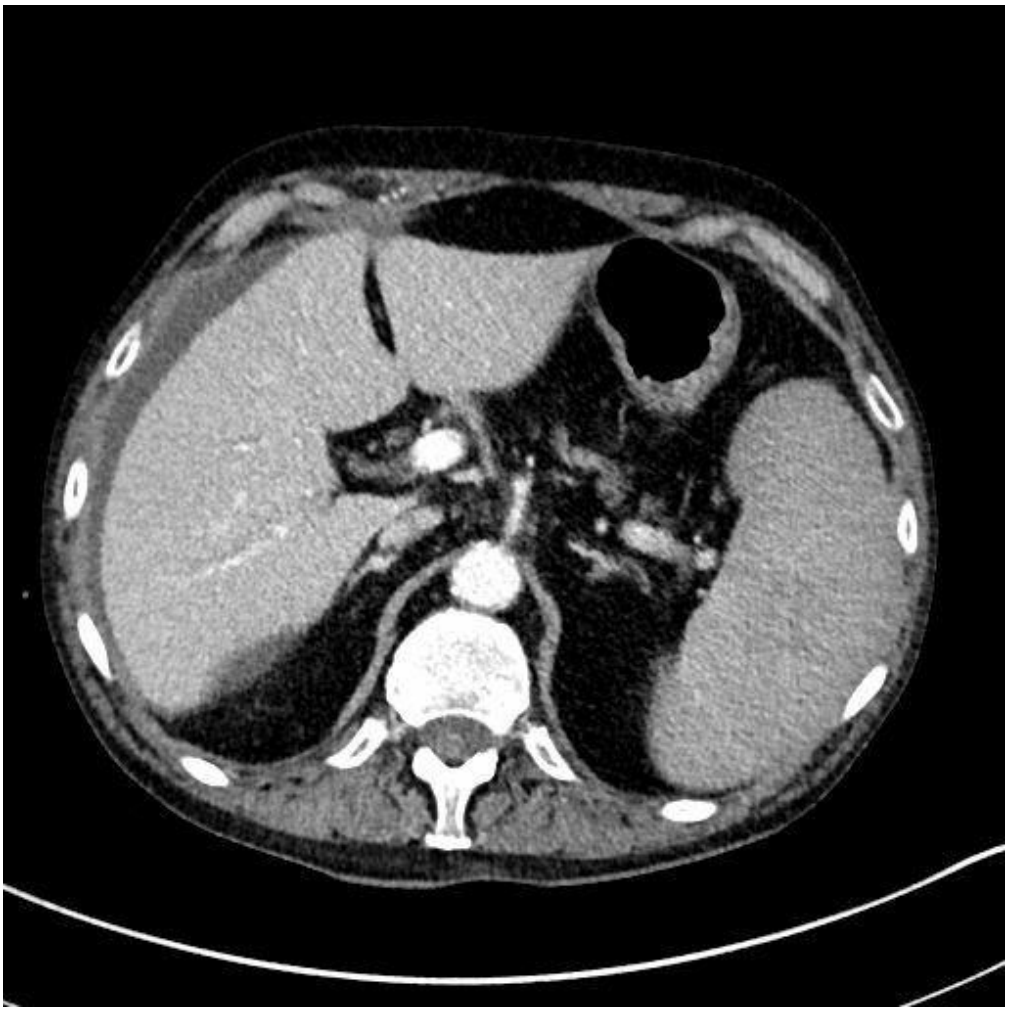
Description: Atherosclerosis of the aorta with aneurysma and multiple air bubbles. Aortic prosthesis.
Origin: Division of General Radiology, Department of Radiology, Medical University of Graz, Austria

h

Description: Atherosclerosis of the aorta with aneurysma and multiple air bubbles. Aortic prosthesis. Free air in the retroperitoneal space. **Origin:** Division of General Radiology, Department of Radiology, Medical University of Graz, Austria

Figure 2

a

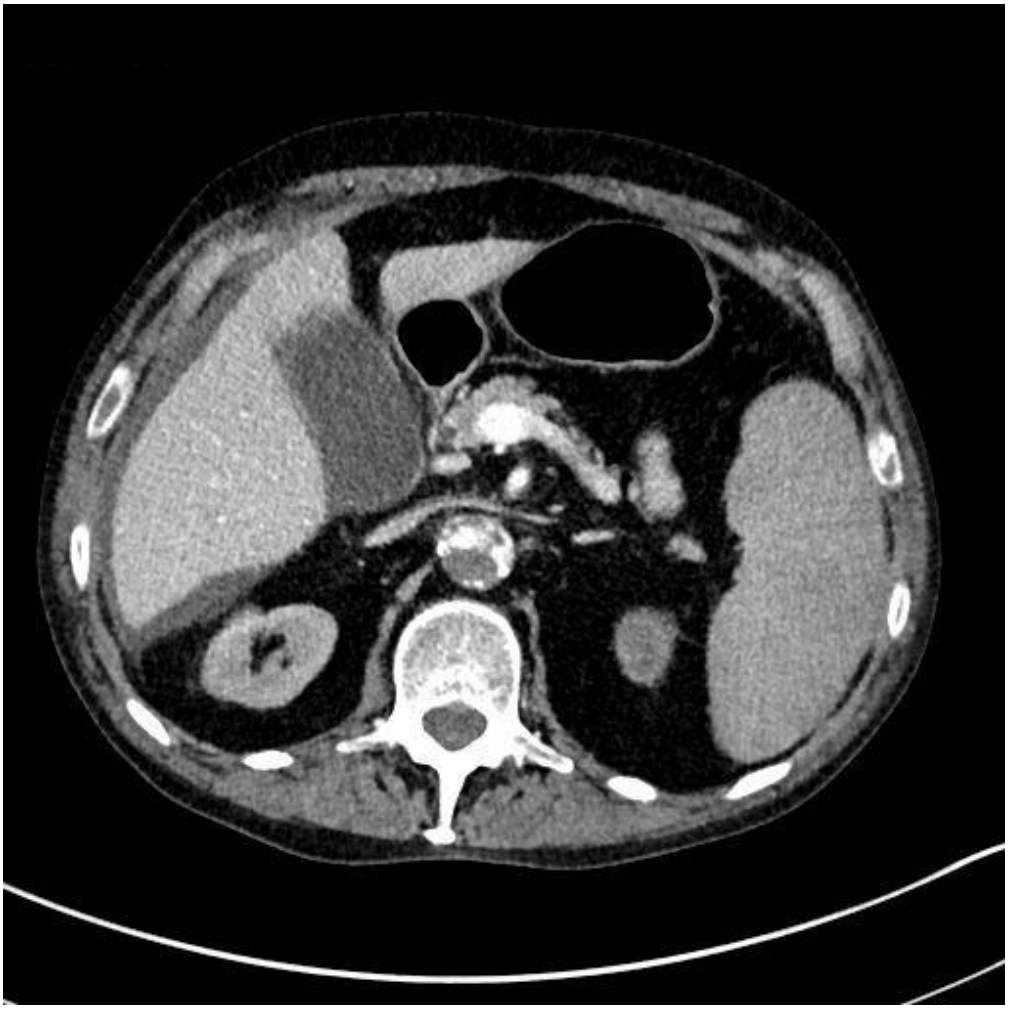


Description: Atherosclerosis of the aorta. **Origin:** Division of General Radiology, Department of Radiology, Medical University of Graz, Austria

b

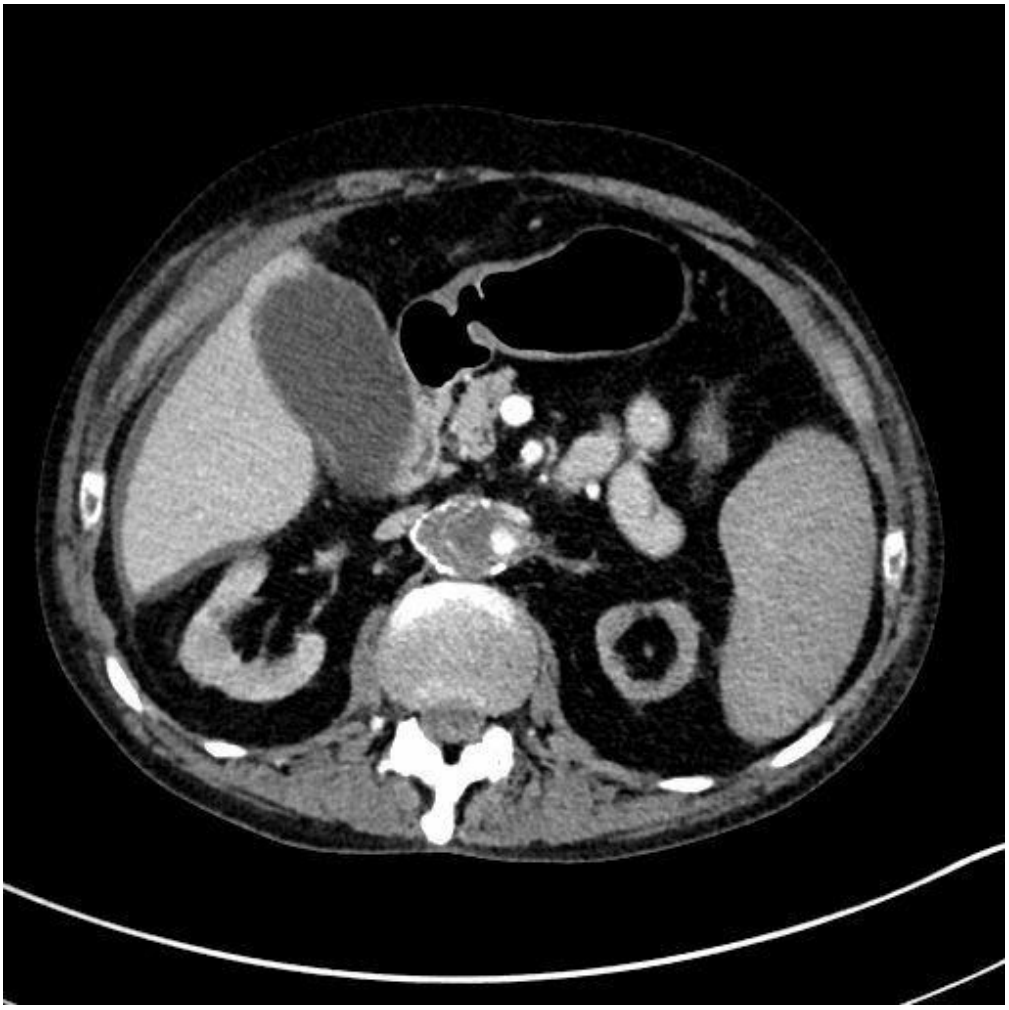
Description: Atherosclerosis of the aorta with wall thrombosis. **Origin:** Division of General Radiology, Department of Radiology, Medical University of Graz, Austria

c



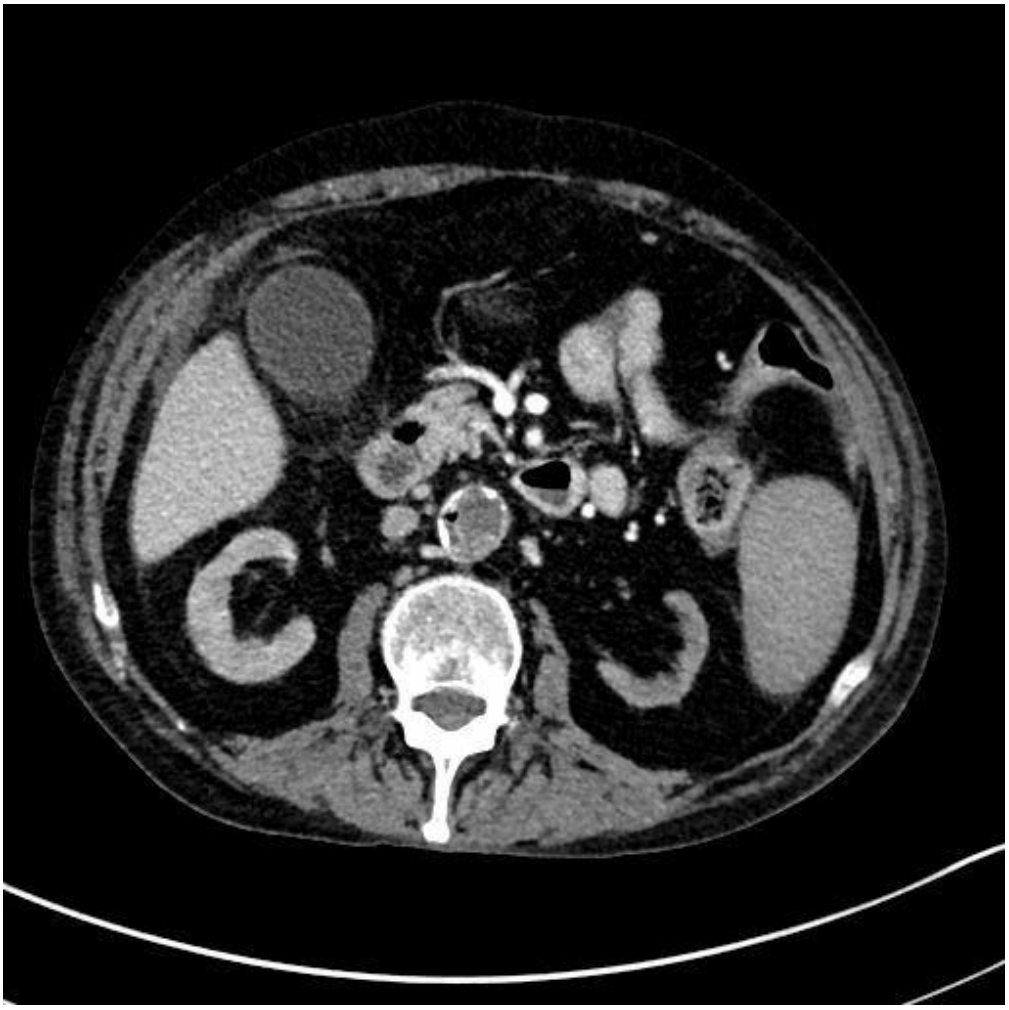
Description: Atherosclerosis of the aorta with wall thrombosis. **Origin:** Division of General Radiology, Department of Radiology, Medical University of Graz, Austria

d



Description: Atherosclerosis and an eccentric aneurysma of the aorta. Wall thrombosis of the aorta and aortic prosthesis.
Free intraperitoneal fluid.
Hydropic gallbladder. **Origin:** Division of General Radiology, Department of Radiology, Medical University of Graz, Austria

e



Description: Atherosclerosis and an eccentric aneurysma of the aorta. Wall thrombosis of the aorta and aortic prosthesis with intraluminal air bubbles.
Free intraperitoneal fluid. **Origin:** Division of General Radiology, Department of Radiology, Medical University of Graz, Austria

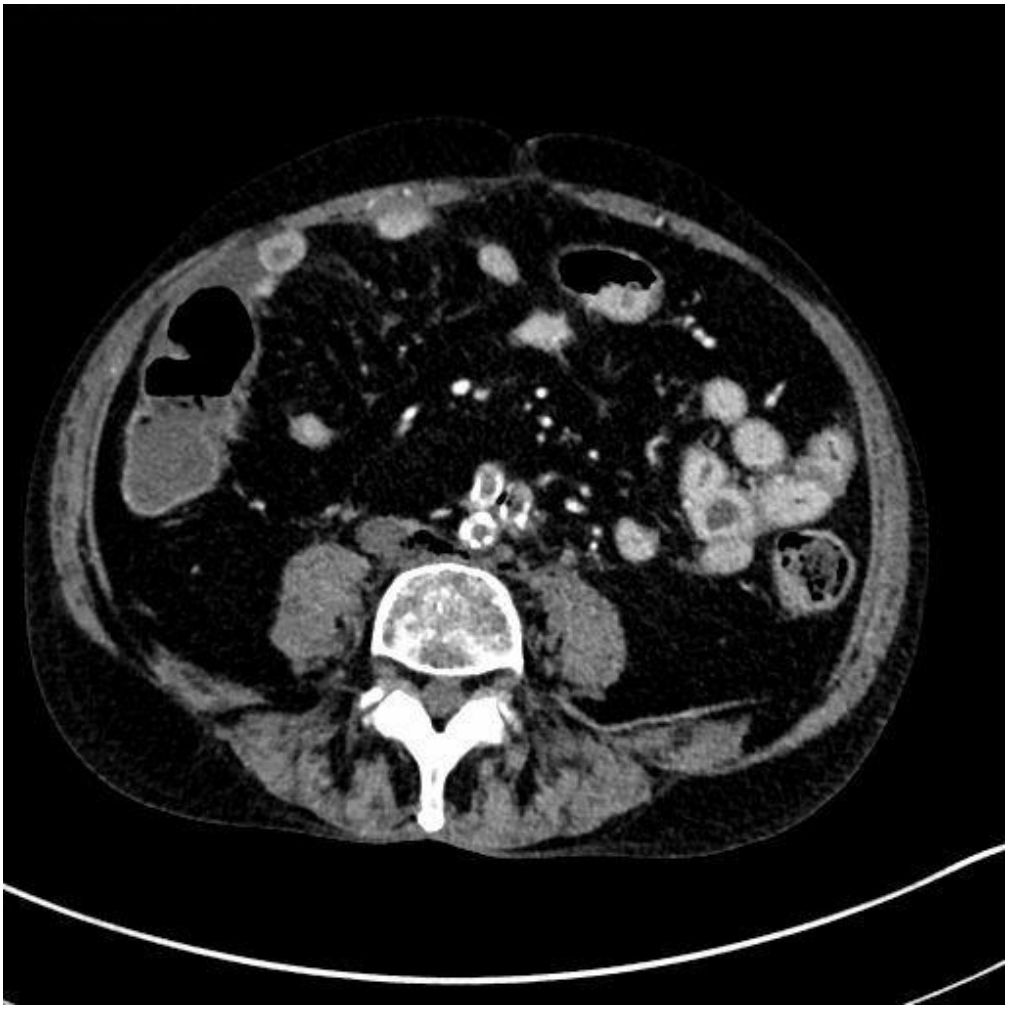
f

Description: Atherosclerosis and an eccentric aneurysma of the aorta. Wall thrombosis of the aorta and aortic prosthesis with intraluminal air bubbles.
Free intraperitoneal fluid. **Origin:** Division of General Radiology, Department of Radiology, Medical University of Graz, Austria

g

Description: Atherosclerosis and an eccentric aneurysma of the aorta. Wall thrombosis of the aorta and aortic prosthesis with intraluminal air bubbles.
Thickend intestinal loops. **Origin:** Division of General Radiology, Department of Radiology, Medical University of Graz, Austria

h



Description: Prosthesis with intraluminal air bubbles. Free air in the retroperitoneal space. Thickend intestinal loops.
Free intraperitoneal fluid. **Origin:** Division of General Radiology, Department of Radiology, Medical University of Graz, Austria

Figure 3

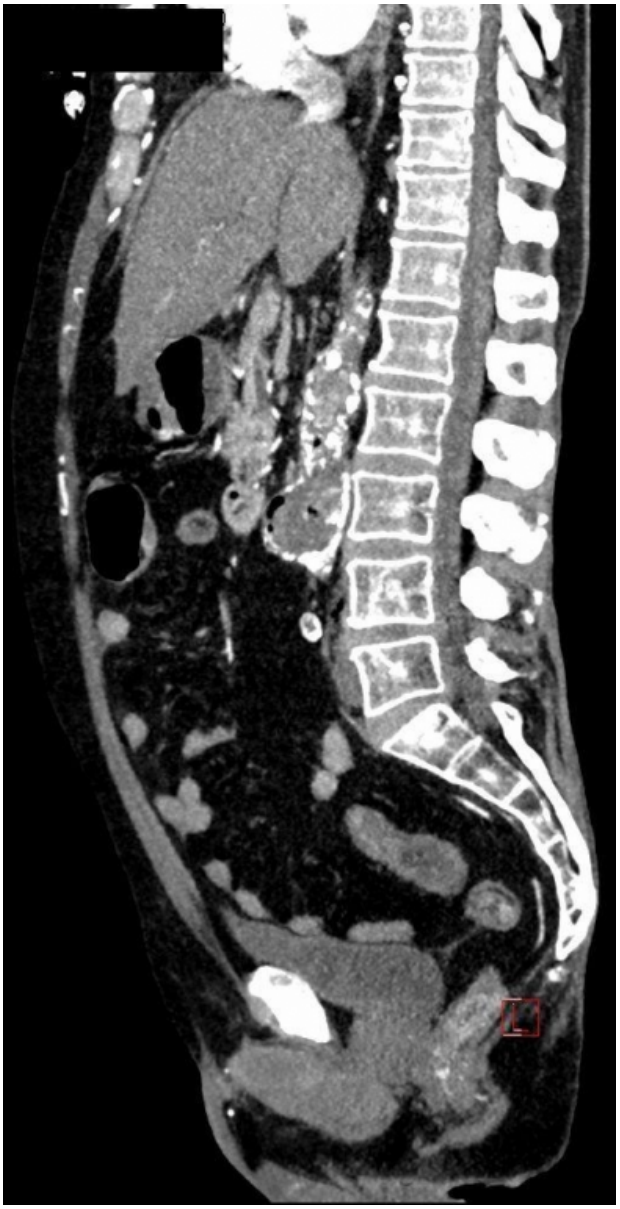
a

Description: Atherosclerosis of the aorta. Thrombosis of the aortic prosthesis with intraluminal air-bubbles in the common iliacal arteries. Free air in the retroperitoneal space. **Origin:** Division of General Radiology, Department of Radiology, Medical University of Graz, Austria

b

Description: Thrombosis of the aortic prosthesis with intraluminal air-bubbles in the common iliacal arteries. Free air in the retroperitoneal space. **Origin:** Division of General Radiology, Department of Radiology, Medical University of Graz, Austria

c



Description: Aneurysma and thrombosis of the aortic prosthesis with intraluminal air-bubbles. **Origin:** Division of General Radiology, Department of Radiology, Medical University of Graz, Austria

d

Description: Aneurysma and thrombosis of the aortic prosthesis with intraluminal air-bubbles. Free air in the retroperitoneal space. **Origin:** Division of General Radiology, Department of Radiology, Medical University of Graz, Austria

Figure 4

a

Description: Atherosclerosis of the aorta. Thrombosis of the aortic prosthesis with intraluminal air bubbles in the common iliacal arteries. **Origin:** Division of General Radiology, Department of Radiology, Medical University of Graz, Austria

b

Description: Atherosclerosis and aneurysma of the aorta. Thrombosis of the aortic prosthesis with intraluminal air bubbles in the common iliacal arteries. **Origin:** Division of General Radiology, Department of Radiology, Medical University of Graz, Austria

c

Description: Atherosclerosis and aneurysma of the aorta. Thrombosis of the aortic prosthesis with intraluminal air bubbles. **Origin:** Division of General Radiology, Department of Radiology, Medical University of Graz, Austria

d

Description: Atherosclerosis and aneurysma of the aorta. Thrombosis of the aortic prosthesis with intraluminal air bubbles. **Origin:** Division of General Radiology, Department of Radiology, Medical University of Graz, Austria

e

Description: Atherosclerosis and aneurysma of the aorta. Thrombosis of the aortic prosthesis. Free air in the retroperitoneal space. **Origin:** Division of General Radiology, Department of Radiology, Medical University of Graz, Austria