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## Aorto-duodenal fistula secondary to aortic graft replacement

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### ABSTRACT

Secondary aorto-duodenal fistula (SADF) is a rare and serious event occurring in up to 45% of aortic prosthesis infections. The clinical manifestations are variable ranging from isolated signs of graft infection such as fever to massive gastrointestinal bleeding. The diagnosis is based on CT scan and is generally oriented by an inconstant association of indirect signs. Despite a high early severe postoperative morbidity and mortality, especially in presence of a preoperative shock, emergency surgery allows for the diagnosis and treatment of SADF with multidisciplinary management allowing favorable midterm outcomes among surviving patients. The images that we present in this manuscript highlight some indirect signs of SADF on CT scan that should alert clinicians to warrant on time surgical management with an illustration of per operative diagnosis of the fistula.

### ARTICLE HISTORY

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### KEYWORDS

Fistula; aorta; duodenum;  
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Secondary aorto-duodenal fistula (SADF) is a rare and serious event occurring in up to 45% of aortic prosthesis infections [1]. The clinical presenting manifestations are variable ranging from isolated signs of graft infection such as fever to massive gastrointestinal bleeding sometimes preceded by the so-called herald bleeding [2]. The diagnosis is based on CT scan and is generally oriented by an inconstant association of indirect signs including the presence of extra-digestive air bubbles (56%), erasure of the peri-aortic fatty plane, thickening of the duodenum directly in contact with the prosthesis (Figure 1(A,B)) [3]. Contrast extravasation into the duodenum is a pathognomonic but rare CT sign. Emergency surgery allows for the diagnosis (Figure 1(C)) and treatment. The management is multidisciplinary and involves both vascular and digestive surgeons as well as anaesthetist/intensive care specialists. After replacement of the aortic prosthesis with a cryopreserved allograft the duodenal fistula is treated depending on the local conditions by direct suture or segmental duodenal resection (i.e. third and fourth portion) associated with a duodeno-jejunal anastomosis. A cholecystectomy permits the papilla location before suture and trans cystic biliary drainage thereafter. A feeding jejunostomy can be performed to warrant

optimal nutritional support especially in case of postoperative leakage (15%) [1]. Finally, an omentoplasty can help to isolate the allograft from the suture/anastomosis [1]. Although this challenging management is associated with highly early severe postoperative morbidity (25%) and mortality (25%), especially in presence of a preoperative shock, it remains the definitive treatment of choice allowing favorable midterm outcomes (i.e. 3 years) among surviving patients [1].

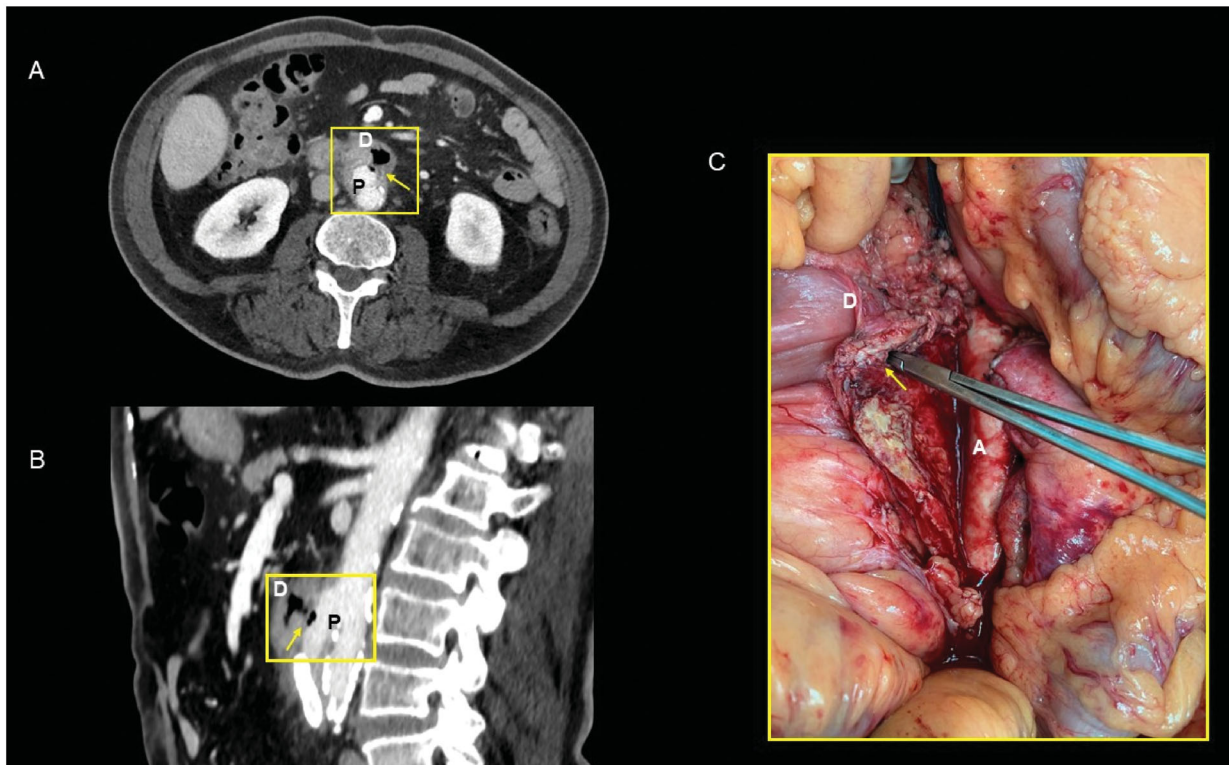
Overall, the presence of a gastrointestinal bleeding in a patient previously operated of an aortic prosthesis should raise the level of suspicion of SADF. The knowledge of this rare but potentially fatal complication is necessary to ensure prompt diagnosis and on time referral in a tertiary surgical center to avoid the onset of a shock synonymous with mortality [1].

### Disclosure statement

No potential conflict of interest was reported by the author(s).

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**Figure 1.** Preoperative axial (A) and Frontal CT scan, showing an air bubbles (arrow) between the posterior face of the fourth duodenum, thickened in front (D) and the anterior face of the aortic prosthesis (P), suggestive of an aorto-duodenal fistula confirmed intraoperatively (C) after prosthesis replacement with an allograft (A).

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