

Resection of pancreatic head neoplasm in a patient with previous coronary bypass grafting using right gastroepiploic artery

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DESCRIPTION

A 64-year-old man was admitted for assessment and management of pancreatic head tumour. He had a history of angina pectoris which was treated by coronary artery bypass grafting (CABG) using the pedicled right gastroepiploic artery (RGEA) 7 years ago. His follow-up CT scan revealed a 4 cm-sized multilocular cystic tumour of the pancreatic head, which was gradually enlarging during 2 years and was suggestive of potentially malignant intraductal papillary mucinous tumour (IPMN), without evidence of distant metastasis (figure 1A, B). Coronary CT showed the patent RGEA graft connected to the right coronary artery (RCA) (figure 1C, video A). After discussing how best to manage intraoperative coronary vascular flow by surgeons, cardiovascular surgeons and cardiologists, the decision was finally made that “non-drug eluting” coronary stent

implantation (CSI) to the RCA was preceded, and resection of the tumour under continuation of single antiplatelet therapy with aspirin was scheduled. Following successful native coronary revascularisation, subtotal stomach preserving pancreaticoduodenectomy (PD) by sacrificing RGEA was satisfactorily performed without any intraoperative cardiac complications (video B). Pathologically, the tumour was diagnosed IPMN with moderate atypia. He recovered soon postoperatively without any bleeding or thromboembolism, and was discharged on postoperative day 20. The usefulness of RGEA for CABG has been widely studied, but interruption of RGEA used for prior CABG may cause life-threatening myocardial ischaemia during upper abdominal surgery. A detailed preoperative anatomical analysis of the grafted RGEA in addition to the celiac/pancreaticoduodenal region is mandatory.

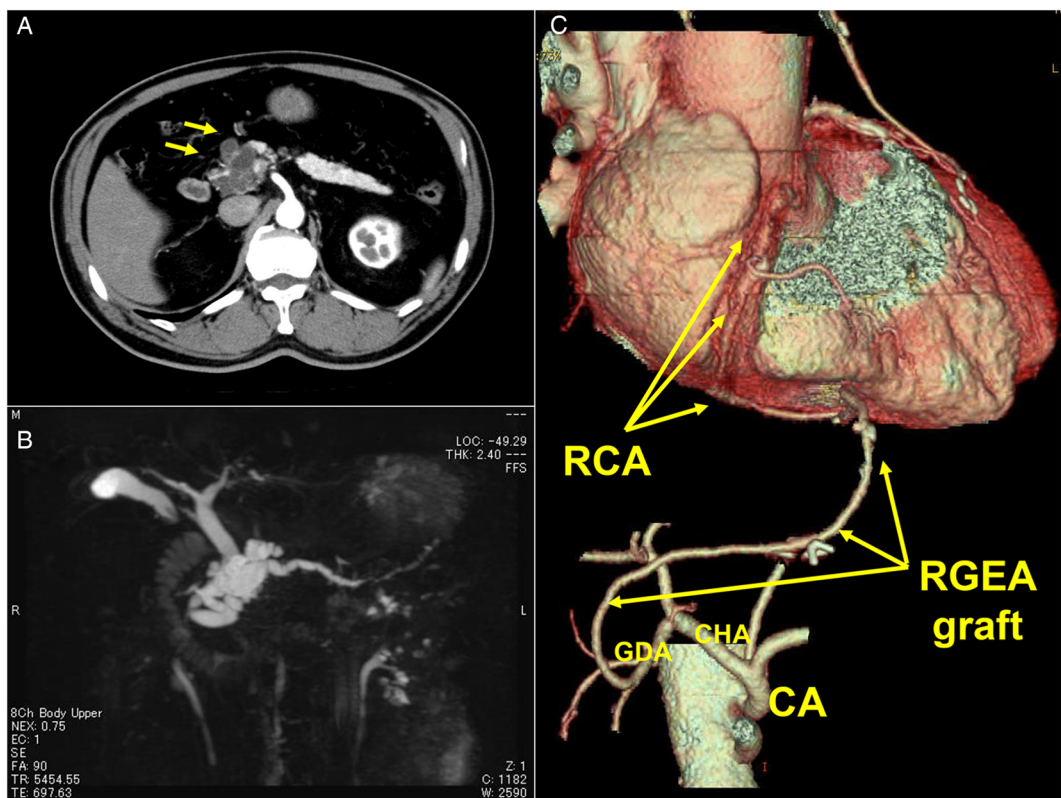
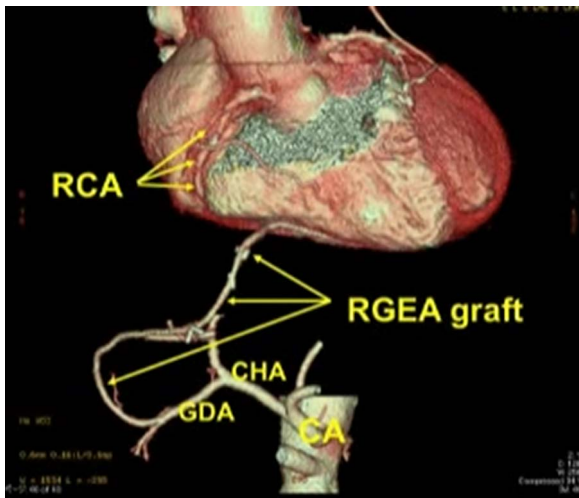


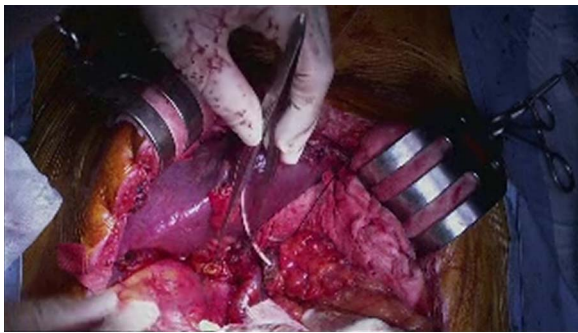
Figure 1 (A) Enhanced CT of the abdomen revealed a 4 cm-sized multilocular cystic tumour of the pancreatic head (arrows), which was gradually enlarging during these 2 years and was suggestive of potentially malignant intraductal papillary mucinous tumour. (B) MR cholangiopancreatography also showed multiple cystic lesions in the pancreatic head and dilated main pancreatic duct. (C) Three-dimensional coronary CT showed patent RGEA graft connected to the right coronary artery. RCA, right coronary artery; RGEA, right gastroepiploic artery; CA, celiac axis; CHA, common hepatic artery; GDA, gastroduodenal artery.



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Video 1 Three-dimensional coronary CT showed patent RGEA graft connecting to the right coronary artery. Abbreviations: RCA, right coronary artery; RGEA, right gastroepiploic artery; CA, celiac axis; CHA, common hepatic artery; GDA, gastroduodenal artery.



Video 2 Following successful native coronary revascularization, subtotal stomach-preserving pancreaticoduodenectomy by sacrificing RGEA was satisfactorily performed without any intraoperative cardiac complications.

Only three reports have described PD in the presence of grafted RGEA,¹⁻³ in two of which RGEA was sacrificed and

reconstructed using the saphenous vein. Such as in our case, pre-operative native coronary revascularisation by CSI is one of the preferred options to ensure successful outcomes in case of performing PD after RGEA-grafted CABG.

Learning points

- ▶ Coronary artery bypass grafting (CABG) using the right gastroepiploic artery (RGEA) has been widely applied, but interruption of RGEA used for prior CABG may cause life-threatening myocardial ischaemia during upper abdominal surgery.
- ▶ When performing pancreaticoduodenectomy (PD) after RGEA grafted CABG, not only preoperative assessment of vascular anatomy, but also preservation of coronary arterial flow during the operation is requisite.
- ▶ Preoperative native coronary revascularisation by coronary stent implantation is one of the preferred options to ensure successful outcomes when performing PD after RGEA grafted CABG, like the current case.

Contributors TF and NT operated and TF, NT and YA managed the patient perioperatively. TF prepared the manuscript and AT reviewed it.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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