



ROLE OF CECT IN DETECTING AND CHARACTERIZING THE VASCULAR COMPLICATIONS OF PANCREATITIS

Radio-Diagnosis

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ABSTRACT

Background: Vascular complications are important but sometimes underdiagnosed sequelae of acute and chronic pancreatitis. They occur due to the proteolytic destruction of vessel walls by pancreatic enzymes or from mass effect by inflammatory changes. **Aim:** To evaluate the role of contrast-enhanced computed tomography (CECT) in detecting vascular complications associated with pancreatitis. **Methods:** A cross-sectional study of 40 patients with clinically and radiologically diagnosed pancreatitis was conducted over 12 months. All underwent CECT to assess for vascular involvement. **Results:** Splenic vein thrombosis (SVT) was the most common finding, seen in 26 patients (65%). Portal vein thrombosis occurred in 11 (27.5%), superior mesenteric vein (SMV) thrombosis in 9 (22.5%), triple vein involvement in 2 (5%), and arterial pseudoaneurysms in 2 (5%). Pseudoaneurysms most frequently involved the splenic artery. **Conclusion:** CECT is a vital, non-invasive imaging modality for detecting vascular complications in pancreatitis. SVT is the most common vascular complication, and early diagnosis allows timely intervention, preventing potentially fatal outcome.

KEYWORDS

INTRODUCTION

Pancreatitis, whether acute or chronic, may be complicated by a spectrum of vascular abnormalities. Proteolytic enzymes released during inflammation can erode arterial walls, causing hemorrhage or pseudoaneurysm formation. Venous structures such as the splenic vein, portal vein, and superior mesenteric vein may undergo compression or thrombosis due to inflammatory mass effect. Early detection of these complications is crucial, as they may significantly influence management and prognosis. CECT is the modality of choice for detecting these changes, given its high spatial resolution and ability to assess surrounding structures.

Objective

To evaluate the vascular complications of acute pancreatitis.

MATERIALS AND METHODS:

Study Design: Cross-sectional observational study

Sample Size: 40 patients with clinical and radiological evidence of pancreatitis

Imaging Protocol: All patients underwent multiphasic CECT abdomen, including arterial and venous phases, to detect vascular involvement.

Data Analysis: The prevalence and types of vascular complications were recorded and statistically analyzed.

RESULTS

Demographics: Majority were males (85%), with peak incidence in the 2nd–3rd decade (45%).

Vascular Findings

Splenic vein thrombosis (SVT): 26/40 (65%) — most common complication.

Portal vein thrombosis (PVT): 11/40 (27.5%)

Superior mesenteric vein (SMV) thrombosis: 9/40 (22.5%)

Triple vein involvement: 2/40 (5%)

Arterial pseudoaneurysms: 2/40 (5%) — splenic artery most common

Notable Observations

Pseudoaneurysms, though rare, carried a significant risk of hemorrhage, including hemosuccus pancreaticus.

Figures:

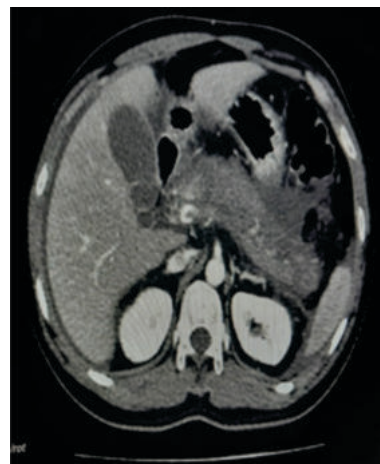


Figure 1: CECT Showing Thrombosis of Splenic Vein Extending up to Portal Confluence.

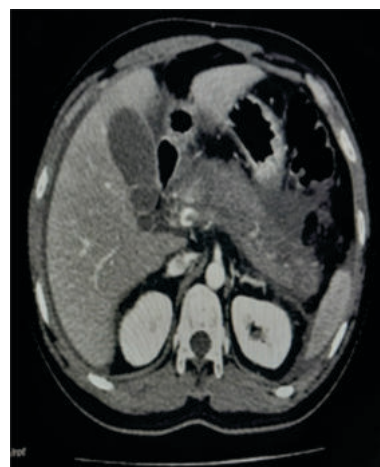


Figure 2: CECT Abdomen Showing Thrombosis in Portal Vein.



Figure 3: CECT Abdomen Showing Pseudoaneurysm of Splenic Artery.

Vascular complications	Complication findings	Number of cases	Percentage
Arterial complications	Pseudoaneurysms	2	5
	Splenic artery pseudoaneurysm	1	2.5
	Gastroduodenal artery pseudoaneurysms	1	2.5
Venous complications	Splenic vein thrombosis	26	65
	Portal vein thrombosis	11	27.5
	Superior mesenteric vein thrombosis	9	22.5
	Splenic vein +portal vein thrombosis	2	5
	Splenic vein +superior mesenteric vein thrombosis	3	7.5
	Portal vein +superior mesenteric vein thrombosis	1	2.5
	Splenic + portal vein +superior mesenteric vein thrombosis	2	5

DISCUSSION

The findings of this study corroborate previous literature highlighting SVT as the most common vascular complication in pancreatitis. Venous thrombosis may result from both direct enzymatic injury and compression by inflammatory masses or collections.

Pseudoaneurysms, while infrequent, represent a life-threatening condition requiring prompt recognition and possible endovascular or surgical intervention. CECT offers excellent visualization of vessel lumen, mural changes, thrombus, and perivascular inflammatory changes, making it indispensable for both initial diagnosis and follow-up.

CONCLUSION

Vascular complications in pancreatitis are not uncommon and should be actively sought in imaging evaluations. CECT serves as the primary modality for early detection and characterization, guiding appropriate management. SVT is the most frequently encountered vascular complication, while pseudoaneurysms, though rare, require urgent attention due to their high morbidity and mortality.

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