

**Review article:**

## **What a radiologist needs to know in imaging of acute pancreatitis using modified atlanta classification**

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### **Abstract:**

The original Atlanta classification of 1992 was revised and updated by the Working Group in 2012. This new and markedly different revision of the original 1992 Atlanta classification of acute pancreatitis should standardizes the terminology used in describing acute pancreatitis and its complications. The accurate description of 2 types of acute pancreatitis (interstitial edematous pancreatitis and necrotizing pancreatitis), definition of severity, and the description of local fluid and solid pancreatic and peripancreatic collections based on the characteristics of fluid and necrosis will improve the communication between different groups and practices worldwide.

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### **Introduction**

The original Atlanta classification of 1992 was revised and updated by the Working Group in 2012. The revised Atlanta Classification utilized a new technique of a global, web-based “virtual” consensus conference over the Internet. This new classification addresses the diagnosis, types of acute pancreatitis, severity, and definition of pancreatic and peripancreatic collections.

### **Diagnosis of acute pancreatitis**

Involves a combination of symptoms, physical examination, and focused laboratory values and requires 2 of the following 3 features:

- 1) Upper Abdominal pain of acute onset often radiating through to the back.
- 2) Serum amylase or lipase activity greater than 3 times normal.
- 3) Findings on cross-sectional abdominal imaging consistent with acute pancreatitis.

### **Types of acute pancreatitis**

There are 2 different forms of acute pancreatitis:

Interstitial edematous pancreatitis & Necrotizing pancreatitis.

### **Interstitial edematous pancreatitis**

“Inflammation” or stranding in the pancreatic and/or peripancreatic tissues without tissue necrosis.

### *CECT criteria*

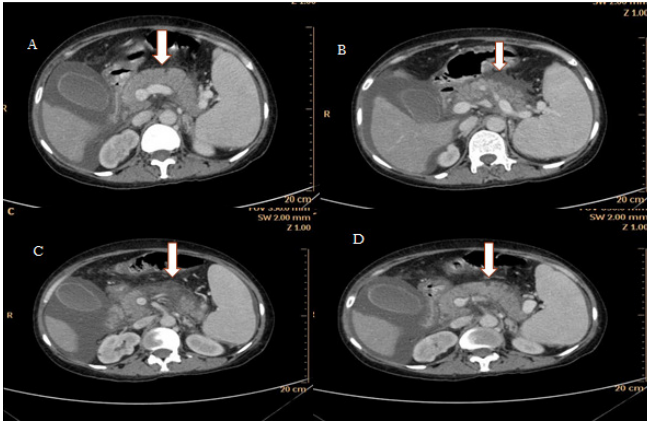
- Enhancement of pancreatic parenchyma is present.
- Diffuse enlargement of pancreas maybe seen.
- Lack of pancreatic parenchymal necrosis or peripancreatic necrosis on imaging.

**Interstitial edematous pancreatitis - Acute peripancreatic fluid collection**

Peripancreatic fluid occurring in the setting of interstitial edematous pancreatitis within the first 4 weeks of interstitial edematous pancreatitis.

**CECT criteria**

- Homogeneous fluid adjacent to pancreas confined by peripancreatic fascial planes
- No recognizable wall

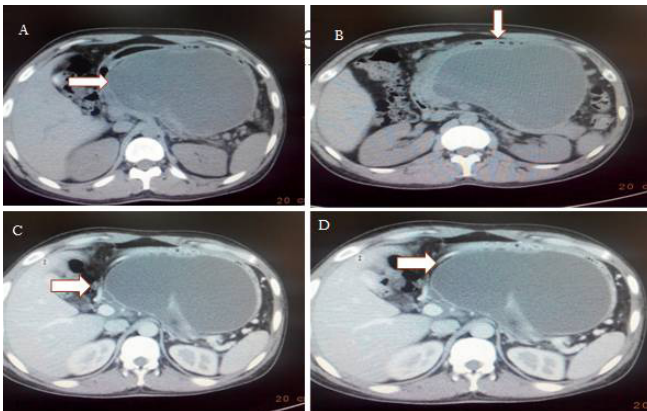


**Interstitial edematous pancreatitis - Pancreatic pseudocyst**

An encapsulated, well-defined collection of fluid with no or minimal solid components which occurs >4 weeks after onset of interstitial edematous pancreatitis.

**CECT criteria:**

- Well-circumscribed, homogeneous, round or oval fluid collection.
- No solid component.
- Well-defined wall.
- Occurs only in interstitial edematous pancreatitis.



**Necrotizing pancreatitis**

Pancreatic parenchymal necrosis and/or peripancreatic necrosis.

**CECT criteria:**

- Pancreatic parenchymal areas without enhancement by intravenous contrast agent and/or
  - Peripancreatic necrosis ( Acute necrotic collection and walled-off necrosis)
    - It can be sterile or infectious
    - CT findings of extraluminal gas within the areas of necrosis in the pancreatic or peripancreatic tissues indicates infection.

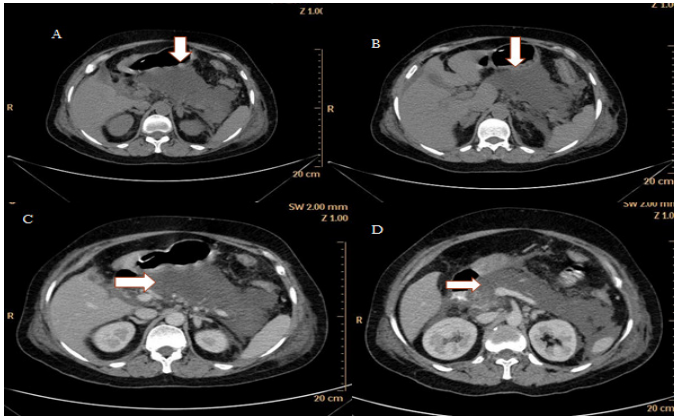
**Necrotizing pancreatitis :**

**Acute necrotic collection**

**A collection of both fluid and solid components (necrosis)** occurring during necrotizing pancreatitis. This collection can involve the pancreatic and/or the peripancreatic tissues

**CECT criteria:**

- heterogeneous, varying of non-liquid density.
- no encapsulating wall.
- intrapancreatic and/or extrapancreatic.



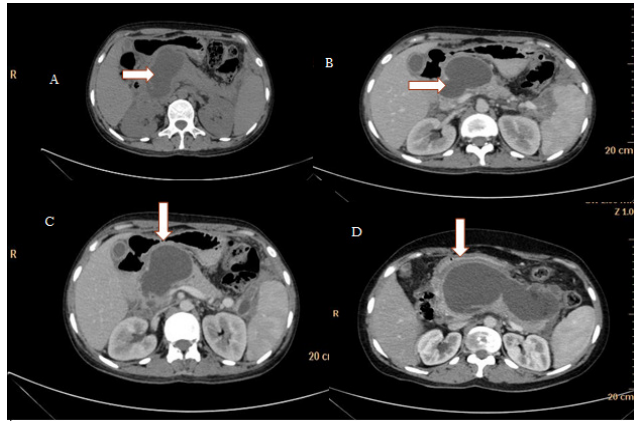
**Necrotizing pancreatitis :**

**Walled-off necrosis**

A mature, encapsulated acute necrotic collection with a well-defined inflammatory wall; these tend to mature >4 weeks after onset of necrotizing pancreatitis.

**CECT criteria:**

- Heterogenous liquid and non-liquid density.
- Well-defined wall.
- Intrapancreatic and/or extrapancreatic.



### Degrees of severity of acute pancreatitis

Mild acute pancreatitis

Lack of organ failure and local/systemic complications

Moderately severe acute pancreatitis

Transient organ failure which resolves within 48 hours and/or

Local or systemic complications

Severe acute pancreatitis

Persistent single or multiple organ failure (>48 hours)

### Definition of organ failure (persistent or transient)

The most reliable marker for disease severity in acute pancreatitis is persistent organ failure for longer than 48 hours.

The Modified Marshall System evaluates the 3 organ systems most commonly affected by severe acute pancreatitis: respiratory, cardiovascular, and renal.

### Local complications

Include colonic necrosis, splenic/portal vein thrombosis, and gastric outlet dysfunction.

Persistence of abdominal pain, secondary increases in serum amylase/lipase activity,

organ failure, or fever/chills usually prompt imaging to search for these complications.

### Systemic complications

Renal, circulatory, or respiratory organ failure or exacerbation of serious pre-existing comorbidities related directly to acute pancreatitis are examples of systemic complications related to the systemic inflammatory response syndrome (SIRS) that accompanies acute pancreatitis.

### Conclusion

This new and markedly different revision of the original 1992 Atlanta classification of acute pancreatitis should standardizes the terminology used in describing acute pancreatitis and its complications.

The accurate description of 2 types of acute pancreatitis (interstitial edematous pancreatitis and necrotizing pancreatitis), definition of severity, and the description of local fluid and solid pancreatic and peripancreatic collections based on the characteristics of fluid and necrosis will improve the communication between different groups and practices worldwide.

### References

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