# A rare phenomenon: blindness in acute pancreatitis

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## ABSTRACT

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 Conclusion: This a rare presentation associated with pancreatitis which can lead to complete vision loss if left undetected and untreated.

 Keywords: Pancreatitis, blindness, Purtscher's retinopathy, complicated pancreatitis, case report.

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**Background:** Acute pancreatitis generally leads to complement activation, which mediates tissue injury and inflammatory cascades. Retinopathy associated with pancreatitis is rare but run a rapid course independent of disease activity leading to vision

Case Presentation: We present a case of 39-year-old man who had transient blindness associated with acute pancreatitis.

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# Background

Acute pancreatitis is one of the common causes of acute abdomen in emergency room. Diagnosis is established with the presence of two of three criteria: (1) abdominal pain consistent with pancreatitis, (2) serum lipase and/or amylase  $\geq 3$  times the upper limit of normal, and (3) characteristic findings from abdominal imaging. Purtscher's retinopathy was first described in early 1910 by Otmar Purtscher and is usually associated with trauma. It can also present as a rare complication of acute pancreatitis [1].

# **Case Presentation**

A 39-year-old male patient presented in emergency room with severe epigastric abdominal pain radiating to back for approximately 12 hours before admission and was associated with nausea and vomiting. He was an alcohol abuser, and his last alcoholic intake was 1 day before presentation; however, there were no signs of alcohol intoxication on his arrival to the emergency room. His vital signs were within normal limits, and blood sugars were 134 mg/dl. Systemic clinical examination revealed tenderness over epigastric and umbilical region. His laboratory tests on admission revealed a white blood cell of  $13.8 \times 10^3/\mu$ l, a hemoglobin level of 14.2 g/dl, and platelets of  $103 \times 10^3/\mu$ l. His comprehensive metabolic panel was remarkable for aspartate aminotransferase (94 IU/l), alanine aminotransferase (58 IU/l), albumin (3.4 g/ dl), lactate dehydrogenase (321 U/l), serum calcium (8.3 mg/dl), and blood urea nitrogen (42 mg/dl). Ranson's criteria showed a low risk for severe pancreatitis. He had a negative viral hepatitis panel. The diagnosis of acute pancreatitis was established in view of characteristic pain and significantly elevated amylase 827 U/l and lipase 1024 U/l. A computed tomography (CT) scan of the abdo-

men with intravenous contrast showed a stranding edema

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within the peripancreatic fat, suggestive of acute pancreatitis (Figure 1). The patient developed sudden diminution of vision 2 days after hospitalization but initially did not report it, thinking that it could be because of the pain. After another 24 hours, he developed near complete loss of vision. Fundus examination revealed cotton wool spots and retinal hemorrhage, and the diagnosis of Purtscher's retinopathy (Figure 2) was established. The CT brain was negative for any abnormal findings. During hospital stay, the patient was managed with intravenous fluids, opoid analgesics, intravenous and topical steroids, and other supportive measures. Gradually over days, his pain decreased, he was resumed on oral diet, and there was no residual vision abnormality. The patient was discharged from hospital with advice of strict abstinence from alcohol and oral analgesics.



**Figure I.** An abdominal CT scan showing stranding edema within the peripancreatic fat suggestive of acute pancreatitis (yellow arrow)



Figure 2. Fundus examination showing cotton wool spots, Purtscher flaken.

## Discussion

Acute pancreatitis is commonly encountered emergency in clinical gastroenterology practice. The diagnosis of acute pancreatitis relies on the presence of two of the following criteria including typical abdominal pain, elevated amylase, and/or lipase thrice upper limit of normal, imaging features, suggesting pancreatitis. Severity is assessed by the presence or absence of organ failure [2]. The exact etiopathogenesis of pancreatitis is not known, but the most accepted hypothesis is premature activation of trypsinogen leading to complement mediated tissue damage and inflammation leading to systemic inflammatory response syndrome [3]. Purtscher's retinopathy is one of the rarest complications associated with acute pancreatitis due to posterior retinal artery occlusion. Exact incidence and prevalence are not known due to rare occurrence [4], and the implicated pathogenesis is usually due to cytokine flood leading to microvascular injuries and venous

occlusion, which causes hemorrhages and cotton wool spots [5]. This type of retinopathy is not exclusive to pancreatitis and can be seen after extensive traumatic injury and severe sepsis. The management of acute pancreatitis remains vigorous fluid challenge for initial 72 hours along with analgesia. Later part of disease is dominated by sepsis which can be managed with antibiotics, percutaneous drainage, and surgical or endoscopic necrosectomy. Retinopathy runs an independent course and not related with disease severity. The management of retinopathy is largely symptomatic, and there is no proven medication for treatment.

### Conclusion

Any vision disturbances in patient with pancreatitis should be promptly addressed, Purtscher's retinopathy is a rare complication and may left undetected leading to permanent vision loss.

#### What is new?

Blindness due to Purtscher's retinopathy is a rare complication of pancreatitis and has been described previously in various literatures. In this case report, the patient developed this complication on day 2 after hospitalization and could have to lead to complete vision loss which had been missed.

#### **List of Abbreviations**

CT Computed tomography

#### **Consent for publication**

Written informed consent was obtained from the guardian of patient.

#### **Ethical approval**

Ethical approval is not required at the institution to publish an anonymous case report.

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# Summary of the case

1	Patient (gender, age)	39 years, Male
2	Final diagnosis	Acute pancreatitis with Purtscher's retinopathy
3	Symptoms	Abdomen pain, loss of vision
4	Medications	Opoid painkillers, IV fluids, topical steroid eye drops
5	Clinical procedure	None
6	Specialty	Gastroenterology, Ophthalmology