BILATERAL CILIORETINAL ARTERY OCCLUSION AND PURTSCHER-LIKE RETINOPATHY IN A PATIENT WITH ACUTE PANCREATITIS

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ABSTRACT

Pancreatitis is a serious condition that requires prompt diagnosis and treatment. It can be caused by a variety of factors, including alcohol abuse and biliary stenosis. The most common symptoms of pancreatitis include abdominal pain, nausea, vomiting, and fever.

Purtschur-like retinpathy is a rare but serious complication of pancreatitis. In this case report, A 31 year-old otherwise healthy male patient developed pancreatitis and subsequently developed Purtschur-like retinopathy with bilateral cilioretinal artery occlusion. The patient was treateted for pancreatitis with antibotics and pain killers and observed for his ophthalmic condition due to delay in ophthalmic presentation .

This case is of particular interest because it highlights the complex and multifaceted nature of ocular conditions, as well as the critical importance of the timing of presentation ,the early presentation will help us to give the appropriate management and to reverse the visual loss

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INTRODUCTION

Purtscher retinopathy was first reported in a man who fell from a tree and suffered cranial trauma in 1910 by Othmar Purtscher. In his report,

Purtscher,described,multiple,abnormalities on fundoscopic examination. These abnormalities,included,retinal,hemorrhages and retinal whitening associated with diminished visual acuity (1). Purtscher retinopathy has since been coined,as a chorioretinopathy associated with indirect trauma and non-ocular injury, involving a constellation of retinal findings including cotton-wool spots, retinal hemorrhages, optic disc edema, and Purtscher flecken (areas of inner retinal whitening)(1)he cilioretinal artery,

most commonly situated on the temporal side of the optic disc with a reported prevalence of 20–40% in the normalT population, usually arises from the peripapillary choroid or directly from one of the short posterior ciliary arteries and commonly supplies a small area of the retina, usually the macula, serving a aluable purpose in preserving some sort of central vision in the case of central retinal artery compromize (5). Its occlusion, however, can cause central vision loss and other ocular complications (6).In this case report,we present the case of a 31-year-old male patient with acute pancreatitis we present the case of a 31-year-old male patient with acute pancreatitis

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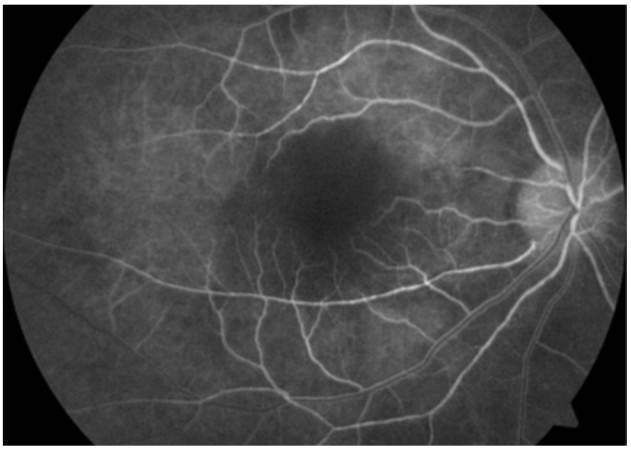
who has developed both Purtscher-like retinopathy and bilateral cilioretinal artery occlusions. The presentation, treatment and clinical outcome of this case is outlined.

Case Presentation

A 31-year-old male, not known to have any chronic medical conditions, presented to the emergency department with two days- history of epigastric pain that was sudden in onset, sharp in nature, increasing in severity, and radiating to the flanks and back, aggravated by eating, drinking, walking, and lying down. The pain was associated with nausea and vomiting. There was a history of alcohol consumption (with no specific daily amount of consumption reported by the patient). Admitted as a case of acute abdomen, the patient was diagnosed with acute pancreatitis based on history, physical examination, and investigations. Several laboratory and imaging investigations were ordered: Complete blood count, Erythrocyte sedimentation rate (ESR), C-reactive protein (CRP), and serum amylase. The requested investigations returned with a high ESR, CRP, white blood cells, and serum amylase was 905. A non-contrast abdominal computed tomography (CT) scan was ordered, and it showed an enlarged pancreas with marked peri-pancreatic fat stranding and peri-pancreatic free fluid representing acute pancreatitis. In addition, there was mild free fluid in the pelvis with no apparent pancreatic masses and patient NPO with intravenous fluid, antibiotics (Tazocin Intravenous 0.5 gram every 8 hours), Omeprazole IV 40 mg once daily, and (Tramal 100 mg every 6 hours Intramuscular). ,his condion showed an improvement ….Two days into the admission and treatment course, the patient developed a sudden painless bilateral reduction in vision. Still, due to his general condition

, he could not come to our clinic for another two days after this new visual complaint, the patient did not examined bed side because we informed about him two daysthis new visual complaint, the patient did not examined bed side because we informed about him two days after his compalin and the first presentation to our clinc was on the day we infomed. On examination, the patient's best-corrected visual acuity in both eyes was counting fingers at a distance of three meters. Intraocular pressure was 12 mmHg in both eyes. A slit lamp examination showed that both eyes' anterior chambers were normal.Fundoscopy revealed multiple cotton-wool spots with well-demarcated retinal edema centered along the cilioretinal artery adjacent to the fovea. This and the history of acute pancreatitis raised the possibility of Purtscher-like retinopathy. OCT shows increased thickening and hyperreflectivity of the inner retinal l nasal to the fovea. OCT-Angiogram showed an absence of vasculature in that area in both eyes. It was proven on Fundus fluorescein angiography (FFA) to be a filling defect in the named area with normal-looking vasculature elsewhere, raising the possibility of cilioretinal artery occlusion in both eyes

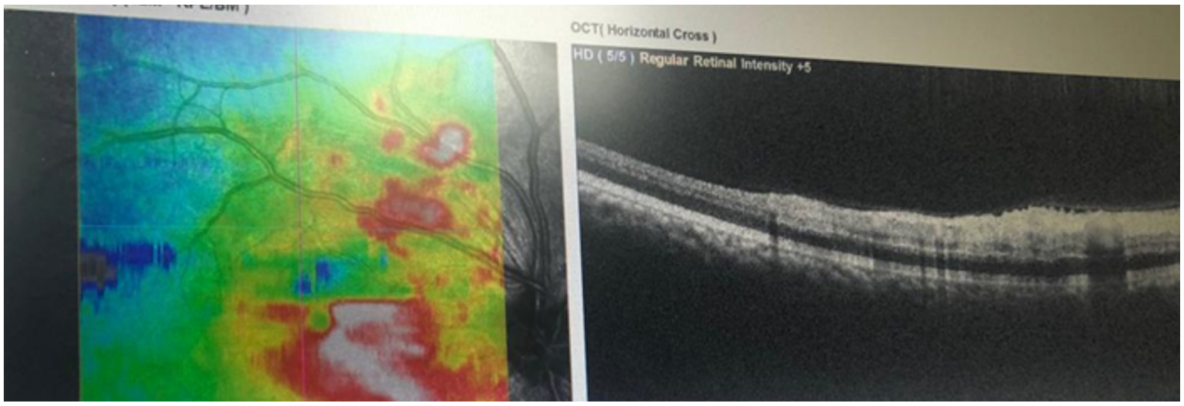


· FFA demonstrating poor filling of the obstructed cilioretinal artery

We investigated other causes of a retinal arterial occlusion, albeit a bilateral one, along with Purtscher-like retinopathy focusing on the inflammatory, infectious, thrombotic, and ischemic causes to rule them out with a battery of investigation that included a carotid Doppler, electrocardiogram, cardiac echocardiography, vasculitis screening, thrombophilia profile, blood, and urine culture. The rheumatology service was consulted to oversee the medical investigations. Thrombophilia screening showed high fibrinogen, low anti-thrombin III, and positive D-dimer. Blood and urine cultures showed no growth. The carotid Doppler ultrasound and echocardiography were normal, with no evidence of pathologies like heart mural thrombi or carotid vascular stenosis. Vasculitis screening did not show any abnormal results, and the rheumatology consult maiontained an absence of evidence of Behçets or any other systemic vasculitis. The treatment regimen of our case's pancreatitis consisted of keeping the patient NPO with intravenous fluid, antibiotics (Tazocin Intravenous 0.5 gram every 8 hours) Omeprazole IV 40 mg once daily, and an opioid (Tramal 100 mg every 6 hours Intramuscular). These medications are given to reduce inflammation and pain, as well as provide supportive care to manage symptoms such as dehydration and malnutrition (1)2). Regarding his visual condition, which was diagnosed as bilateral cilioretinal artery occlusion along with Purtscher-like retinopathy, it was unfortunate for the patient to be presented two days after his sudden decrease in vision due to the delay in informg us regarding the patient , which was outside the treatment time window for a retinal artery occlusion (6). Therefore, we directed our focus to detect any potential complications by closely monitoring the patient. The ophthalmic follow-up showed a reduction in cotton-wool spots in the peripheral area and macula. The vision was better eccentrically (6/12 – 6/24) but still decreased centrally to just counting fingers with best-correction. On follow-up over a period of two months, the patient's condition showed permanent impairment of his central vision and preservation of his peripheral vision. It is known that Purtscher-like retinopathy causes a decrease in vision early in the disease, but the remanent defect in the patient central vision could be explained by the co-existing cilioretinal artery occlusion.

Discussion

A recent systematic review of several databases (Medline, EMBASE, EBSCO, Science Direct, and Google Scholar) from 1980 to 2010 with a total of 670 studies, identified 68 cases of Purtscher-like retinopathies to be studied in accordance with strict inclusion and exclusion criteria and of those, 13 occurred in the setting of acute pancreatitis (7). In acute pancreatitis, the suggested mechanism of ischemic insult to the retina involves pancreatic proteases entering the systemic circulation and causing activation of the complement and coagulation cascades by complement-derived mediators (8,9). This results in the embolization of leukocyte and fibrin aggregates to the retinal arterioles (8,9). When Purtscher-like retinopathy happens in acute pancreatitis, the limited data suggest that it is associated with multiorgan failure and increased mortality (10). The prognosis for visual recovery in Purtscher-like retinopathy is variable, and although some patients experience spontaneous resolution, this is a vision-threatening condition (2,7). Furthermore, iven the paucity of data on this condition, there are no well-established treatment guidelines available. High-dose corticosteroids have been suggested as a potential therapy,acting by inhibiting complement-associated granulocyte



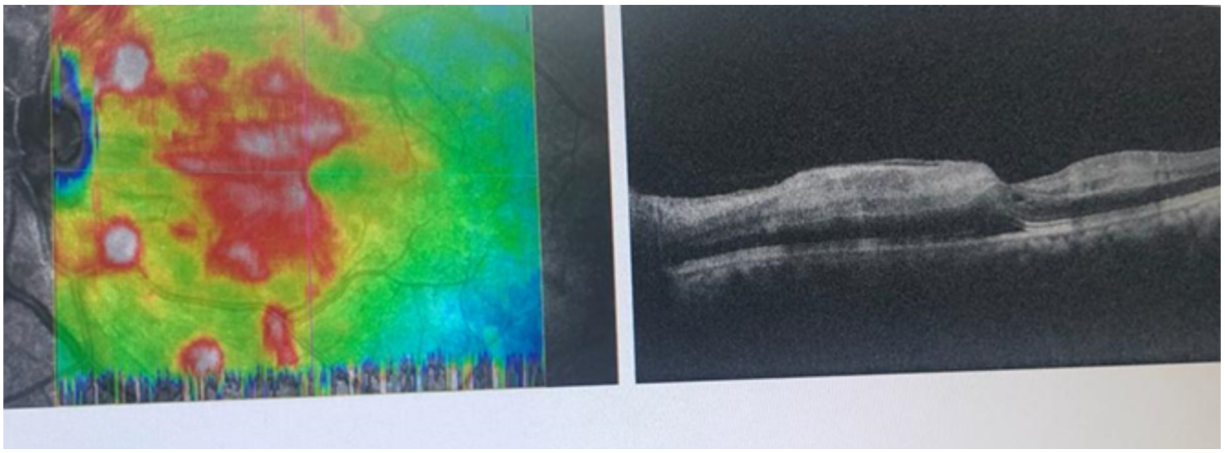
A

B

Figure 1: OCT of the right eye

A: Color-coded map thickness, with the red color indicating the area of the thicker retina

B:Horizontal cross OCT in the papillomacular bundle shows hyperreflectivity and thickening of the inner retinal layers (arrow), which corresponds to the area of cilioretinal artery occlusion.



A

B

Figure 2: OCT of the left eye

A: Colour-coded map thickness, with the red color indicating the area of the thicker retina (retinal edema).

B: Horizontal cross OCT in the papillomacular bundle shows hyperreflectivity and thickening of the inner retinal layers (arrow), which corresponds to the area of cilioretinal artery occlusion.

aggregation and stabilizing damaged neuronal membranes (2). Although there have been cases of improvement in vision after corticosteroid administration, these have not been found to show statistically significant improvement in outcomes and therefore remain controversial in this setting (7,2,11,12). Other treatments with benefits reported in several case reports include nonsteroidal anti-inflammatory drugs and hyperbaric oxygen (13,14). Given the lack of validated beneficial therapies, observation and aggressive treatment of the underlying etiology may be the most reasonable course of action.

It should be mentioned that the treatment of cilioretinal artery occlusion or any other retinal artery occlusion aims to improve blood flow to the retina and prevent further vision loss by some maneuvers such as ocular massage, anterior chamber paracentesis, systemic and topical antiglaucoma medications (6). These treatments need to be administered in a time window after which a permanent retinal damage might ensues if occlusion persists. This time frame was hypothesized to be from six to 6.5 hours (6). The literature has several case reports of Purtscher-like retinopathy secondary to pancreatitis that led to a reduction in vision, but in our case, the severe reduction in vision was due to the combined effect of Purtscher-like retinopathy and cilioretinal artery occlusion cilioretinal artery occlusions may in fact represent the extreme spectrum of Purtscher-like retinopathy.

Conclusion

In this case report, we described a patient who developed acute pancreatitis and bilateral central retinal artery occlusion. The patient's diagnosis was based on the patient's symptoms, medical history, and findings of examinations and imaging studies. This case is of particular interest because it highlights the complex and multifaceted nature of ocular conditions, as well as the critical importance of the timing of presentation. This suggests that the earlier a patient can be examined, the higher the possibility of providing timely and appropriate management to optimize the patient's prognosis and minimize the risk of complications.

Statement of Ethics

Written informed consent was obtained from the patient to publish this case report and any accompanying images.

Conflict of Interest Statement

The authors report no conflicts of interest.

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