



Unilateral Purtscher's Retinopathy

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Abstract : A 23 year old man presented to our casualty with sudden decrease in vision in the left eye of 1 day duration following a road traffic accident. He sustained chest injuries, with fracture of ribs and leg. On examination his vision in the left eye was counting fingers at 1m, had minimal restriction of ocular movements and grade 3 RAPD rest of anterior segment examination was normal. Fundus examination revealed multiple areas of superficial retinal hemorrhages and multiple patches of retinal edema at the posterior pole. OCT showed gross macular edema. He was managed conservatively. On follow up his ocular movements improved, macular edema substantially decreased but there was no improvement in visual acuity. This case is presented for rarity of purtschers retinopathy as a uniocular phenomenon.

Keyword : chest injury, purtschers retinopathy, retinal edema, OCT.

Case report

A 23 year old man presented to our casualty with sudden decrease in vision in the left eye of 1 day duration. A day prior to presentation he was involved in a road traffic accident and sustained chest injuries with fracture of the ribs and left leg. On examination his vision in the left eye was counting fingers at 1m, had minimal restriction of ocular movements and grade 3 RAPD; rest of anterior segment examination was normal. Right eye was found to be normal; visual acuity 6/6. Fundus examination revealed multiple areas of superficial retinal hemorrhages and multiple patches of retinal edema at the posterior pole. (Figure 2)



Fig.1: Right eye normal fundus

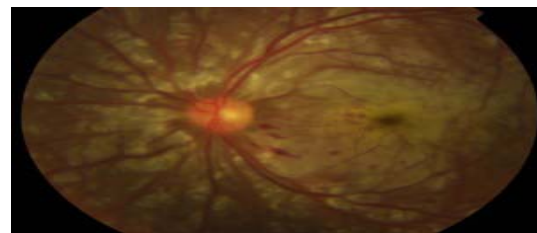


Fig.2: Fundus photo 1st day post injury

OCT in the 1st post injury day showed gross macular edema. (Figure 2)

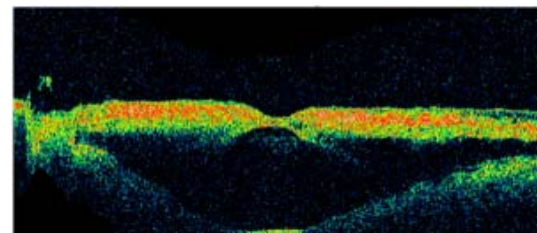


Fig.2: OCT 1st day post injury showing gross macular edema

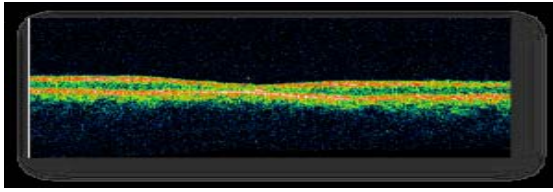
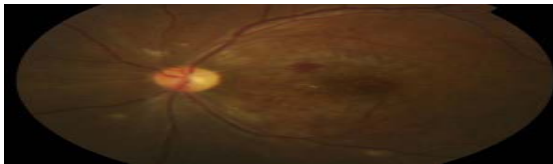


Fig.3: OCT 1 month post injury



**Fig.4: Fundus photo
1 month post injury**

History of severe compressive chest injury with fracture of the leg and the associated fundus findings pointed towards the diagnosis of Purtscher's retinopathy. He was managed conservatively. On follow up his ocular movements improved, macular edema substantially decreased but there was no improvement in visual acuity. (Figure 3,4) Discussion Purtscher's retinopathy is a haemorrhagic and vaso-occlusive vasculopathy. It is usually a bilateral condition following compressive injury of chest and thigh.(2) This case is presented for rarity of purtscher's retinopathy as a unioocular phenomenon. The condition presents as multiple patches of superficial retinal whitening & retinal haemorrhage around a hyperaemic optic nerve. The FFA shows leakage of dye from vessels and arteriolar obstruction in more severe cases. (1) Pathological factors contributing to the disease have been found to be retinal vascular injury and endothelial damage, intravascular clotting due to complement induced granulocyte aggregation - Leukoembolisation, and this causes arterial occlusion and infarction of microvascular bed. Leucocyte aggregation induced by complement C5a is believed to be most likely mechanism of embolisation because of its association with trauma. Other possible sources of emboli are, air embolism in crushing chest injury or fat embolism with long bone fracture. Other proposed mechanisms are angiospasm due to sudden increase in venous pressure from compressive chest injury or acute head injury and endothelial cell damage from acutely elevated intraluminal pressure.

A recent paper modeling shear stress in the retina suggests that Purtscher's retinopathy may be a rheological event at the posterior pole foci of vascular endothelial dysregulation, followed by downstream endothelin induced vasculopathy.

References:

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