Coastline like peripheral chorioretinal degeneration as a suspected cause of nasal retinal dialysis

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Retinal dialysis is mostly associated with blunt trauma or at times spontaneous. A patient presented to us with fresh rhegmatogenous retinal detachment with no telltale history or signs of trauma. The causative break was retinal dialysis noted on the superonasal periphery. A characteristic peripheral chorioretinal degeneration simulating a coastline almost extending six clock hours was seen in both the eyes. We have discussed this rare presentation and the possibilities of the association between this newly identified lesion and spontaneous retinal dialysis in the following case report.

Key words: Peripheral chorio-retinal degeneration, retinal dialysis, rhegmatogenous retinal detachment

Retinal dialysis, though most likely is secondary to blunt trauma, may also be spontaneous because of intricate changes at the level of ora serrata.[1] Numerous peripheral chorioretinal degenerations (CRD) have been reported ever since the discovery of indirect ophthalmoscopy. We report a rare finding of a peripheral CRD resembling a coastline, in association with retinal dialysis, which was incidentally noted and has not been mentioned in the literature before. The discussion deals with the possible cause of such a lesion and its indirect association with spontaneous retinal dialysis.

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Case Report

A 25-year-old male presented with complaints of a sudden loss of vision in his right eye (OD) since 20 days with no history of ocular trauma in the past. There was no history of retinal detachment among the family members. His best correct visual acuity (BCVA) OD was finger counting close to the face and in the left eye (OS) was 6/6. The refractive status of the left eye was –0.25 D sphere. Fundus OD showed total rhegmatogenous retinal detachment with corrugations. A nasal peripheral pigmentary CRD was evident which had wavy margins extending almost 6 clock hours resembling a coastline [Fig. 1a]. On Indentation, superior-nasal retinal dialysis was seen spanning 1 clock hour. Enclosed oral bays (EOBs) were also visible on the temporal periphery OD [Fig. 1b]. Clinically, there was no evidence of any vitreous abnormality. Fundus OS showed a similar type of CRD on the temporal periphery [Fig. 2a and b]. On indentation, there was no evidence of any retinal dialysis. He also had a twin brother, who on fundus screening did not show any similar lesion. The patient underwent OD scleral buckling surgery. A 276 silicone tire was used during the surgery. Six weeks postoperatively OD retina was attached with a BCVA of 6/24.

Discussion

The presence of superior nasal retinal dialysis was neither explained by a suitable history of trauma nor by any

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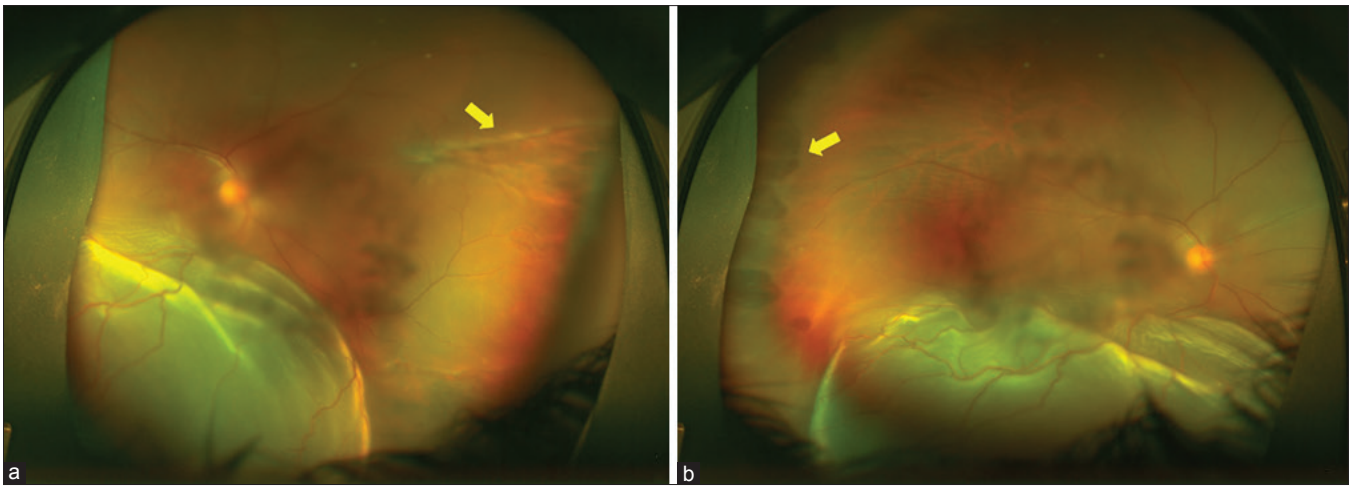

Figure 1: (a) Ultra-wide field fundus image of the right eye showing rhegmatogenous retinal detachment with the peripheral coastline like degeneration on the nasal side (yellow arrow). The degeneration had well-defined margins with hypopigmented border. (b) Temporal periphery of the same eye showing multiple patchy isolated degenerations simulating oral bays

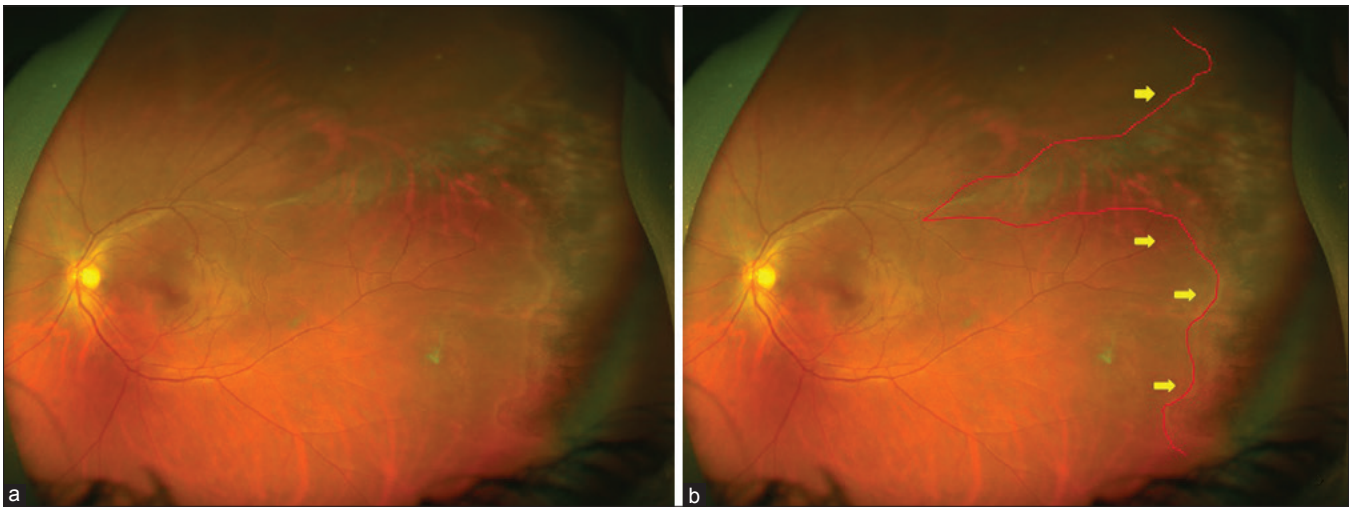

Figure 2: (a) Ultra-wide field fundus image of the left eye showing the well-demarcated coastline like coastline like chorioretinal degeneration (CCRD) on the temporal side. (b) The margins are marked (red line and yellow arrows). The CCRD shows mottled pigmentation with increased visibility of outer choroidal vessels suggesting the pathology is at the chorioretinal juncture. CCRD: Coastline like chorioretinal degeneration

appreciable signs ocular injury. A coastline like CRD (CCRD) having well-defined wavy margins with pigmentary changes was noted in the nasal periphery of the affected eye. The lesion was at the outer retinal level and uncharacteristically present on the nasal side in one eye and temporal side in the other eye. Some of the close differential diagnosis include confluent paving stone degenerations (PSD), partially EOB, and peripheral reticular degeneration (PRD). PSDs are patchy tend to occur in clusters and may occasionally coalesce to form extensive circumferential bands. But the margins of the confluent PSDs are scalloped and are often pigmented because of the proliferative pigment epithelium.[2] The lesion seen in our case showed wavy margins with a tinge of hypopigmentation along the border. Partially EOBs involve those areas where the pars plana ciliary epithelium extend posteriorly > 0.5 mm from the ora, but whose anterior surface width is less than half of the posterior surface's.[3] The posterior width of the lesion in our case was smaller and the patches were also more confluent, unlike the partial EOBs. PRDs described under various terms are mostly seen in the elderly population. The lesions are more polygonal forming geometric patterns in the peripheral fundus and occur in association with age-related macular degeneration unlike the lesion seen in our case.[4]

The margins of the dialysis were well defined and uniform and appeared as if the ora had receded from its junction with the pars plana. Though cystoid degeneration may predispose to idiopathic retinal dialysis, Cameron suspects differential growth of pars plana as compared with the peripheral retina as a more appropriate cause. Postnatal temporal growth of pars plana is well documented in the literature. An uneven excessive anterior growth of pars plana in emmetropic eyes is thought to express more traction over the peripheral retina ultimately snapping it off at the insertion.[1,5] A similar event could have led to retinal dialysis in this case albeit the location being nasal.

The CCRDs were bilateral and might be because of the differential growth of the pars plana and the anterior retina as suspected by Cameron. CCRD may be an indirect sign pointing

toward retinal dialysis in the future. A proper peripheral indentation in such cases may be required to rule out peripheral oral dis-insertions.

Though most reports have identified spontaneous dialysis on the temporal quadrant, a nasal preponderance in our case advocates that such rare findings do occur and trauma is not always the cause of superonasal retinal dialysis. Further reports and evidence are required to reiterate our findings. Another possibility is that the pigmentary changes might have been a mere association to the superonasal retinal dialysis which was instead a result of an unnoticed trivial trauma.

The cause and pathogenesis of spontaneous retinal dialysis in young patients should be explored and studied further. A proper peripheral indentation guided indirect ophthalmoscopy to look for retinal dialysis or any subclinical retinal detachments may be required when a patient presents with CCRD.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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