Association of Parafoveal Telangiectasia with Diabetic Retinopathy

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Retinal telangiectasia, a term proposed by Reese, refers to a developmental retinal vascular disorder characterized by an ectasia of capillaries of the retina, in which irregular capillary dilatation and incompetence occur in the retinal periphery or the macula. If only the capillaries of the foveal avascular zone are involved, it is known as parafoveal telangiectasia. It is a condition characterized by microaneurysmal and saccular dilatation and capillary non-perfusion of the parafoveal capillaries.

Parafoveal telangiectasia can be broadly divided into two basic forms;
1) A developmental or congenital vascular anomaly
2) An acquired form found in middle-aged and elderly persons. Although the cause of parafoveal telangiectasia is unknown, the association of the acquired form with diabetic retinopathy is well known.

Case report

A 49-year-old lady presented with dimness of vision in the right eye. She was a known case of type 2 diabetes mellitus since 10 years on regular treatment. Systemic examination was unremarkable. On ocular examination, her best-corrected visual acuity was 6/9 in the right eye and 6/6 in the left eye. Anterior segment examination and intraocular pressure by applanation tonometry were unremarkable. Fundus photograph of the right eye showed changes of moderate non-proliferative diabetic retinopathy and a zone of retinal whitening in the temporal parafoveal region (Fig.1). Left eye fundus photograph (Fig.2) also revealed changes of moderate non-proliferative diabetic retinopathy. There were hard exudates located temporal to macula about two disc diameters from the fovea. There was also a zone of retinal whitening in the parafoveal region, more marked temporally.

Fundus fluorescein angiography confirmed the findings of moderate non-proliferative diabetic retinopathy in both eyes. FFA of right eye (Fig.3) in the arteriovenous phase showed capillary dilatation of the parafoveal capillary network, more marked temporally. In the late phase of FFA (Fig.4) right eye showed cystoid accumulation of the dye in the temporal macula and there was staining of the parafoveal retina.

FFA of left eye in the arteriovenous phase (Fig.5) showed vascular abnormalities in the form of capillary dilatation and micro aneurysmal dilation of the parafoveal capillary network, which were more marked temporally. In the late phase of FFA (Fig.6) left eye showed increased leakage of the dye from the vascular abnormalities and typical staining of the parafoveal retina.

Discussion

We present a case of parafoveal telangiectasia along with diabetic maculopathy. Though the association of
Fig. 1. Fundus Photograph of the Right Eye showing changes of non-proliferative diabetic retinopathy and a zone of retinal whitening temporal to the parafoveal area.

Fig. 2. Fundus photograph of the left eye showing changes of non-proliferative diabetic retinopathy and a zone of retinal whitening temporal to the parafoveal area.

Fig. 3. Fluorescein angiography of right eye: Arterio-venous phase of the angiogram showing telangiectasia of the parafoveal net.

Fig. 4. Late phase angiogram of the right eye showing cystoid accumulation of the dye in parafoveal area and staining of the retina.

Fig. 5. Fluorescein angiogram of the left eye showing aneurismal dilatation of the parafoveal capillary net.

Fig. 6. Late phase angiogram of the left eye showing progressively increasing leakage of the dye from the vascular abnormality of the parafoveal area and staining of the temporal retina.
Parafoveal telangiectasia and diabetic retinopathy is well known, there are very few case reports. Green et al.\(^2\) described clinical and histopathologic features of parafoveal telangiectasis in a 58 year old woman. Light and electron microscopy had demonstrated narrowed capillary lumina. Localized endothelial defects were found in the temporal parafoveal area. There was degeneration of the pericytes with accumulation of lipid within the capillary walls and the presence of multilaminated basement membrane. These retinal capillary changes were similar to those observed in the diabetic and pre-diabetic state. Diaz-Rodriguez\(^3\) also reported that the changes found in parafoveal telangiectasia are similar to those that appear in the beginning of diabetic retinopathy.

Millay et al.\(^4\) postulated that parafoveal telangiectasia may be caused by abnormal glucose metabolism. This view is also supported by Chew et al.\(^5\)

The purpose of this case report is to highlight the association of parafoveal telangiectasia with diabetes mellitus and diabetic retinopathy. Parafoveal telangiectasia has got characteristic clinical and angiographic features and it should not be confused with diabetic maculopathy. Whereas CSME in diabetic maculopathy responds to focal laser photocoagulation to microaneurysms, there is no role for laser photocoagulation in parafoveal telangiectasia.

References