Diabetic Eye Disease

"No Sweet Talk"

Diabetes is the single most important cause for death and disability worldwide. It affects almost all organs in the body. It is estimated that presently 19.4 million individuals are affected by this deadly disease and it is likely to go up to 57.2 million by 2025.

Diabetic Retinopathy is essentially a disease process, which affects the blood vessels of the retina. It is also an indicator of the status of blood vessels elsewhere in the body eg: kidney, heart, etc…

What happens to the retina in diabetes?

The pathological changes in diabetes lead to the lack of blood supply or ischaemia of the retina and hypoxia of retinal tissues. Long standing hypoxia leads to new vessel formation. These new vessels are fragile and bleed very easily. Excessive bleeding in the eye leads to vitreous haemorrhage, and loss of vision.

In some areas there is the swelling of the vessel wall and leakage of the fluid leading to retinal oedema. Involvement of macula, the central portion of the retina leads to severe drop in vision.

Scar tissue can also grow from ruptured blood vessels which will contract and pull the retina, detaching it with resultant loss of vision.

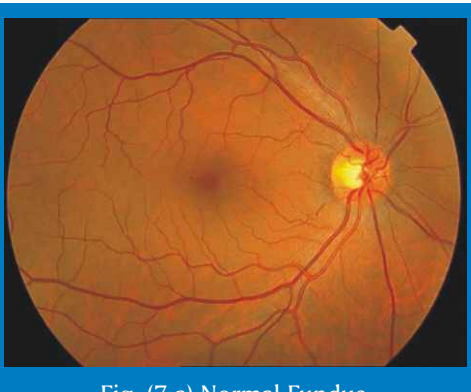

Fig. (7.a) Normal Fundus

Fig. (7.b) Diabetic Retinopathy

Facts about Diabetic Retinopathy

- Major cause of irreversible blindness in old age.
- Longer the duration of diabetes greater is the severity of retinopathy.
- Hypertension, Renal disease, Hyperlipidemia, Obesity, Smoking, Anaemia, has an adverse effect on Diabetic Retinopathy.

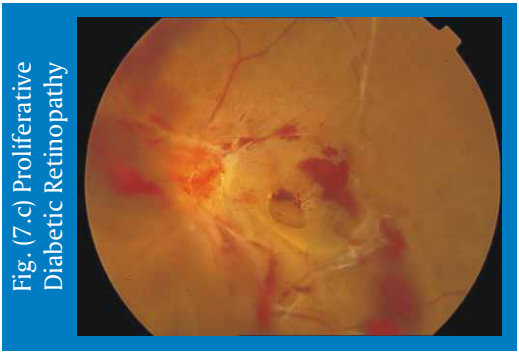

Fig. (7.c) Proliferative Diabetic Retinopathy

Fig. (7.d) Tractional Retinal Detachment

Advanced Diabetic Retinopathy

Bleeding in diabetic retinopathy causes formation of scar tissue. This pulls the retina and causes retinal detachment which leads to permanent loss of vision.

Fig. (7.e) Digital Topcon Fundus (Retina) Camera, Japan

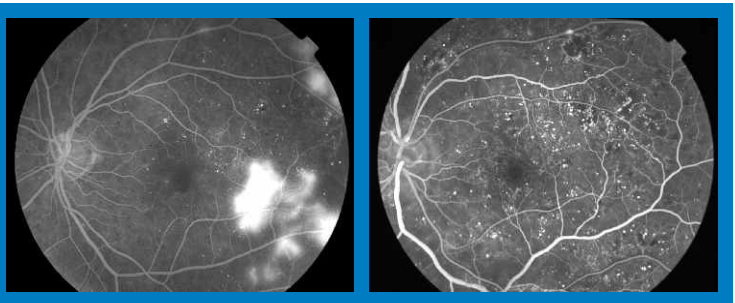

Fig. (7.f) FFA Picture of Diabetic Retinopathy

Diagnostic test

A special photographic process known as Fundus Fluorescein Angiogram (FFA) involves injection of dye through the vein in the arm into the blood stream. Continuous photographs of the retina are taken for detecting leakage or poor blood flow in the vascular system of the retina.

Management

Laser photocoagulation is the mainstay in the management of Diabetic Retinopathy. Focal, Grid and Pan Retinal Photocoagulation (PRP) are the different types of laser applications in diabetic retinopathy.

Fig. (7.g) Alcon Green Laser, USA.

BIOM (Binocular Indirect Ophthalmic Microscope) is used to visualize the retina during surgery.

Advanced diabetic eye disease comprising Vitreous Haemorrhage, Tractional Retinal Detachment, requires surgical intervention (Vitrectomy) and Endolaser photocoagulation.

Fig. (7.h) Pan Retinal photocoagulation

Fig. (7.i) BIOM

Fig. (7.j) Bausch & Lomb Millennium Vitrectomy System, USA

Fig. (7.k) Alcon Accurus Microsurgical System, USA.

Precautions to be taken

- Good control of diabetes by medication, diet and exercise.
- Control of associated disorders like hypertension, renal disease, hyper lipidemic status **is a must.**
- Diabetic Retinopathy patients with hypertension, renal disease or pregnancy should have regular ophthalmic check up every 6 months.
- Diabetic Retinopathy patients who have undergone Laser should have regular ophthalmic check up every 3 months.
- All Diabetics should have a mandatory eye check up once in a year.

Caveats :

- Strict control of Diabetes, Hypertension, Kidney function, Cholesterol, Anaemia is very important.
- Regular eye check up with the ophthalmologist.
- Treatment may be Laser photocoagulation, Vitrectomy + Endolaser depending upon stage of Retinopathy.
- Early diagnosis and treatment measure can prevent blindness due to retinopathy.