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RETINITIS PIGMENTOSA – SCOPE OF AYURVEDA

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ABSTARCT:

Retinitis pigmentosa is one of the most common form of inherited retinal degeneration .It is a type of progressive retinal dystrophy, a group of inherited disorders in which abnormalities of the photoreceptors (rods & cones) or the retinal pigment epithelium lead to progressive visual loss. The world wide prevalence of the disease is 1 in 5000 population

Genetic defect causes shortening of outer segment of photoreceptors (especially rod cells). Repeated shortening leads to degeneration or loss of photoreceptors and causes alteration in retinal pigment epithelium. RPE disintegrates & pigments are migrated to inner retinal layers and aggregated around the blood vessels in the periphery of retina

The functional unit of eye which performs vision is known as Drishti & all the visual components which are essential for the perception of vision are included under it. Drishtipatala (Retina) is a major part of drishti. Most of the diseases related with vision are explained in Drishtigatarogas by our acharyas.

While going through the netraroga vijnana, we won't get references for genetic predisposition of diseases. But it is clearly mentioned by our acharyas in some other contexts like adibalapravrutha rogas, Janmabala pravrutha rogas, beeja bhaga dushti etc.

KEYWORDS: Retinitis pigmentosa, Drishtigatarogas, Janmabala pravrutha rogas, beeja bhaga dushti

INTRODUCTION

Inherited retinal disorders form the second largest single cause of blindness in the developed world. Retinitis pigmentosa is one of the most common form of inherited retinal degeneration .It is a type of progressive retinal dystrophy, a group of inherited disorders in which abnormalities of the photoreceptors (rods & cones) or the retinal pigment epithelium lead to progressive visual loss. The world wide prevalence of the disease is 1 in 5000 population.

Since it is a collection of many different genetic diseases, the etiology is remarkably variable. Exact etiology of the disease is unknown. Most of the cases are due to genetic mutation. Recent studies show that mutation of more than 100 different genes can causes the disease. Affected individuals first experience defective dark adaptation and nyctalopia, followed by reduction of the peripheral visual field and gradually loss of central vision, late in the course of the disease.

PATHOPHYSIOLOGY

Genetic defect causes shortening of outer segment of photoreceptors (especially rod cells). Repeated shortening leads to degeneration or loss of photoreceptors and causes alteration in retinal pigment epithelium. RPE disintegrates & pigments are migrated to inner retinal layers and aggregated around the blood vessels in the periphery of retina. This is the main pathology of the disease. Later degenerative changes occur in inner retinal neurons, blood vessels and optic nerve head & the entire retina may get affected.

SIGNS & SYMPTOMS

1. Night blindness is the earliest symptom in RP & starts several years before fundus changes appear in the patient. Usually starts in first to second decades of life
2. Delayed dark adaptation.

3. Gradual progressive loss of visual field. An annular/ring scotoma starts in the equatorial zone of retina which gradually increases & ultimately only central vision is left (Tubular /Tunnel vision)

4. In advanced stage, central vision is also lost and the patient becomes blind.
5. Photopsia, colour vision defect etc.

6. OPHTHALMOSCOPIC FINDINGS

1. Bone spicule pigmentation mainly in equatorial region near blood vessels. In progressive stages entire retina may be affected

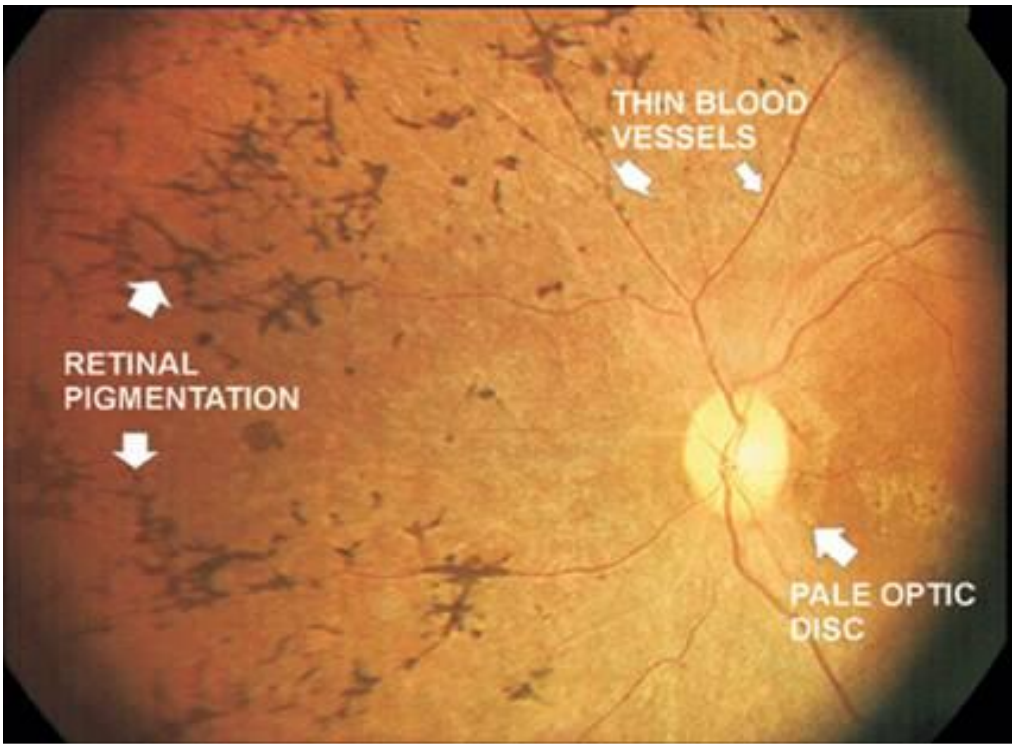
2. Blood vessels especially arteries are narrowed and may become thread like in late stages.

3. Optic disc becomes pale waxy in later stages and may occurs consecutive optic atrophy

4. Dust like colourless particles in vitreous, posterior vitreous abnormalities & vitreous collapse may occur.

5. Anterior segment abnormalities include posterior subcapsular cataract, open angle glaucoma etc.

Figure No 1 :



CLASSIFICATION

There are different types of classification.

1.BASED ON TYPE OF INHERITANCE:

1. Autosomal recessive RP: Most frequent type & affects 41% of cases. In this case both the parents carry the genes responsible for RP

2. Autosomal dominant RP: Second most frequent, 16% of case. Here only one parent is affected.

3. X-linked RP: Least frequent & most severe form of RP, around 6-9% of cases. Here females carry the genes for RP

2. BASED ON FUNDUS APPEARANCE

1. RP sine pigmento
2. Retinitis punctata albescens
3. Sectorial RP
4. Unilateral RP
5. RP inversus / Pericentral RP

SYSTEMIC ASSOCIATIONS

The disease can be isolated or associated with systemic diseases such as Usher's syndrome, Lawrence-moon biedl syndrome, Abetalipoproteinemia, Refsum syndrome, Kearns-sayre syndrome etc.

INVESTIGATIONS

1. Visual acuity-May reaches up to CF or PL only, in advanced cases.

2. Visual field- Should be analyzed by both confrontation test & Perimetry

3. Ophthalmoscopy-Both Direct & Indirect ophthalmoscopy should be done

4. Electroretinography- It is subnormal or abolished in RP
5. Electrooculography- it shows absence of light peak

MANAGEMENT

There is no effective treatment for the disease in modern medicine. So the management includes early diagnosis & subsequent genetic counseling. There are some measures to stop progression which includes Vasodilators, Retinal transplants, Artificial retinal implants etc. Also they advices low vision aids like magnifying glasses, night vision device etc. Most of all genetic counseling plays an inevitable role.

AYURVEDIC APPROACH

The functional unit of eye which performs vision is known as Drishti & all the visual components which are essential for the perception of vision are included under it. Drishtipatala (Retina) is a major part of drishti. Most of the diseases related with vision are explained in Drishtigatarogas by our acharyas.

While going through the netraroga vijnana, we won't get references for genetic predisposition of diseases. But it is clearly mentioned by our acharyas in some other contexts like adibalapravrutha rogas, Janmabala pravrutha rogas, beeja bhaga dushti etc.

Susruthacharya mentioned about adibalapravrutha rogas during the context of classification of vyadhis

Disorders of sukra & sonitha of parents may affect the child and produce some diseases. All the hereditary diseases can be included under this heading.

Disorders produced in child due to the apathyachara of mother during pregnant state are included under this. These are some congenital anomalies.

Manifestation of diseases due to impairment at chromosome level itself is clearly mentioned by Charakacharya,

The abnormalities in beeja as a whole or any part of beeja may causes abnormalities in curresponding part of the fetus. Here in RP, the mutated genes transmitted from parents to the child are responsible for the disease.

Mainly five diseases are mentioned among netrarogas in which night blindness is a common symptom. They are,

Doshandha , Kaphavidagdha , Ushnavidagdha , Nakulandha , Hraswa jadya

DOSHANDHA:

This is a kapha pradhana tridoshaja roga. Patient is having normal vision during day time & the main symptom is night blindness. This is mentioned as sukhasadhya roga by acharyas.

KAPHAVIDAGDHA:

Due to vitation of Kapha, objects seen as white in colour & drishti also shows white colour. The patient can see during day time due to kapha vilayana, but there is night blindness. It is a sukha sadhya roga.

Both the disease can be correlated to night blindness due to vitamin A deficiency. Treatment is direct & indirect supplementation of vitamin A. Same treatment is mentioned in our classics also- intake of spleen &liver of buffalo fried with oil & ghee & tender leaves of Jeevanthi, atimukta, eranda, sohala, abhiru,agasthi etc. fried in ghee.

USHNAVIDAGDHA:

Tridosha & Rakta are involved in this disease.Vision during day time is decreased & night blindness is the main symptom. It may be due to some inflammation of Retina. This is also a sukhasadhya Roga.

NAKULANDHA

A person who is blind like Nakula is known as Nakulandha. This disease is explained by Susruthacharya as,Vision resembles like that of Mongoose. This can be interpreted in two ways. Some of the studies show that mongoose eyes contain only cone cells. So it can't see during night time. Usually while looking an object mongoose turns its head towards the object. From this we

can assume mongoose may have constricted visual field. Patients with Retinitis Pigmentosa also have the same features. Also

Patient sees different colours during day time according to the corresponding dosha. So tridoshas are involved in the pathogenesis of the disease. Some vision is retained during day time, but there is severe night blindness.

Prognosis: Yapya by Vagbhatacharya and asadhya by Susruthacharya which shows the progressive nature of the disease. So Nakulandha can be correlated to Retinitis pigmentosa.

HRASWAJADYA:

Night blindness along with altered day vision is the main symptom. Size of the drishti is reduced & objects will be seen constricted. This is an asadhya roga & can be correlated to tunnel vision in the advanced stage of Retinitis pigmentosa.

By evaluating the course of the disease, retinitis pigmentosa can be included in vata pradhana sannipataja roga. From the above 5 diseases we can compare RP with Nakulandha. Both of these diseases have same clinical features & both the diseases are progressive in nature. Both are tridoshaja disease. The advanced stage of the disease can be correlated with hraswajadya.

AYURVEDIC MANAGEMENT

Nakulandha chikitsa is applicable in RP- Sannipatika timira chikitsa.

DRUGS OF CHOICE

1. Snehapana: Jeevanthyadi Ghrita ,Mahatriphala Ghrita, Patoladi Ghrita etc

2. Nasya: Ksheerabala Taila, madhookadi thaila,Jeevaniya Ghrita etc.

3. Moordha taila : Ksheerabala Taila

4. Anjana : Choornithanjana , Usheeradi anjana
5. Tharpana : Jeevaniya Ghrita
6. Putapaka : Snehana putapaka
7. Vasthi: Chakshushya vasthi

Along with this treatment protocol, provide assurance and psychotherapy (satwavajaya chikitsa) to the patient & proper pathyakramas should be followed.

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