



# Ayurvedic Management of Diabetic Macular Oedema — DME (*Sannipataja timira*) — A Case Report

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## Abstract

**Background:** Diabetic Macular Edema (DME) is the primary cause of visual loss in Diabetic Retinopathy (DR). The hyperglycemic state promotes the activation of multiple interlinked pathways leading to DME. The current guidelines in contemporary science recommend Anti VEG-F injections as the first line of treatment for this condition. Repeated Anti-VEG-F injections cause much financial burden on the patient and their family, at the cost of minimal visual outcome. From the signs and symptoms, it was diagnosed as *Sannipataja timira* according to Ayurveda. A 53-year-old male patient sought Ayurvedic treatment when his vision in the right eye did not improve after the injection of Accentrix for DME. His ophthalmologist advised him to repeat the injection after six months but did not assure him of complete resolution of edema. So, he opted for Ayurvedic treatment. His treatment comprised internal medicines consisting of *Punarnavadi kashaya*, *Guduchyadi kashaya*, *Chandraprabha vati*, *Gomutra haritaki lehya*; external treatments like *Talpodichil* with *Punarnavadi churna* and *Pratimarsha nasya* with *Anu taila*; *Kriyakalpas* (eye treatments) like *Vidalaka* and *Anjana karma*. At the end of 7.5 months of Ayurvedic treatment, his visual acuity improved from 6/60 to 6/6. Optical Coherence Tomography (OCT) affirmed the full resolution of DME. Ayurvedic treatment effectively reversed the process of macular edema, thereby bringing about marked visual outcomes in DME. Such patients shall be encouraged to go for Ayurvedic treatments, not the expensive and invasive Anti-VEGF injections.

**Keywords:** Anti VEG-F, Vidalaka, Anjana Karma, Ayurveda, Proliferative Diabetic Retinopathy

## 1. Introduction

DME is characterized by vascular leakage through endothelial trans-cellular and para-cellular routes. This clinically manifests as tissue edema and the deposition of exudates in the macula. DME is responsible for significant visual impairment in diabetic patients. Although it can occur in any stage of Diabetic Retinopathy (DR), it is commonly seen in eyes with more advanced stages of DR, including Non-proliferative

Diabetic Retinopathy (NPDR) or Proliferative Diabetic Retinopathy (PDR). It is influenced by higher baseline HbA1c and systolic blood pressure<sup>1</sup>. The conventional system of medicines treats this condition through Anti-VEG-F therapy. Despite halting the disease temporarily, repeated and long-term injections that are commonly needed eventually lead to systemic adverse events and devastating ocular complications<sup>2</sup>.

From the Ayurvedic point of view, based on the symptoms like *Avila Darshana* (smoky vision) and

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signs like aneurysms, macular edema, and exudates, DME shall be considered as *Tridosha vikriti* (vitiating of all the three dosas of the body)<sup>3</sup>.

## 2. Patient Information

A 53-year-old male patient who had diabetes for seven years complained of blurred vision for one week and approached an ophthalmologist. He diagnosed his condition as DME in the right eye and administered the injection Accentrix. Since his vision did not improve, they advised him to take another course of the same injection after six months. Nonetheless, he opted for Ayurvedic treatment. Upon arrival, he complained of blurred vision in his right eye, as if seeing through a white cloth. However, his left eye had normal vision. He had no history of any eye-related problems earlier and his family history also was not remarkable.

## 3. Clinical Findings

The visual acuity was 6/60 in the right eye and 6/6 in the left eye. Both the corneas appeared normal. On slit-lamp examination, both the lenses showed cataract changes with nuclear sclerosis of grade 1. The anterior chamber and the vitreous humor appeared normal in both eyes. From the Ayurvedic perspective, the absence of Raga prapti (change in the color of the eyes) helped differentiate *Sannipataja kacha* from *Sannipataja timira*.

## 4. Diagnostic Assessment

The history, signs and symptoms were clearly suggestive of DME, and there were no challenges in the diagnosis. OCT of the right eye showed macular edema with a Central Macular Thickness (CMT) of 445µm, an average macular area volume of 11.83mm<sup>3</sup>, and the presence of hard exudates.

## 5. Therapeutic Intervention

The patient was prescribed the following Ayurvedic medicines for a month.

1. *Punarnavadi kashaya*<sup>4</sup> - 15ml *kashaya* + 45ml of warm water- morning and evening, before food.

2. *Guduchyadi kashaya*<sup>4</sup> - 15ml *Kashaya* + 45ml of warm water- morning and evening, before food.
3. *Chandraprabha vati*<sup>4</sup> - 1 tablet (20gm) before food, morning.
4. *Shiva gulika*<sup>4</sup> - 1 tablet (20gm), before food, evening.
5. *Gomutra haritaki lehya*<sup>4</sup> - 1 teaspoon at bedtime.

Later, the following medicines were prescribed and continued till the end of the treatment.

1. *Drakshadi kashaya*<sup>4</sup> - 15ml *Kashaya* + 45ml of warm water- morning and evening, before food.
2. *Triphala churna*<sup>3</sup> - 1 tsp + 1/2 tsp ghee + 1/4 tsp honey at bedtime.

Other treatments involved:

1. *Pratimarsha nasya* (nasal drops) with *Anu taila*<sup>5</sup> - 5 drops in both nostrils- morning & evening (from the first follow-up visit till the end of the treatment).
2. *Talapodichil* (covering the whole head with herbal paste) - with *Punarnavadi churna*- morning (for one week, after the first follow-up visit). Table 1 mentions the successful order of oral medication and its possible effects.

The patient also underwent *Kriyakalpa* procedures (eye treatments), which included -

1. *Vidalaka* (application of medicinal paste on the closed eyelids) with *Mukkadi purambada*, once daily, in the morning (for the initial two weeks of the treatment).
2. *Anjana karma*- with *Elaneer kozhumb*<sup>6</sup> — once daily, in the morning started after a month of internal medication and continued till the end of the treatment.

Later, as his condition improved, evident from the betterment of vision, suggesting Pitta and Rakta Dosas to have attained normalcy, all the medicines were stopped, and *Drakshadi kashaya* was prescribed in a dose of 20ml + 40ml of warm water twice daily, to maintain this normalcy. However, *Anu taila* in the form of nasal drops and *Elaneer kozhumb* in the form of *Anjana* were further continued. Table 2 enlists the

**Table 1.** List of internal medicine with their possible effects

Serial No.	Medicine	Dose	Possible effect
1.	<i>Guduchyadi kashaya</i>	10 ml + 20 ml of warm water- twice daily	<i>Pitta vata shamana</i> (alleviates Pitta and vata dosas)
2.	<i>Punarnavadi kashaya</i>	10 ml + 20 ml of warm water- twice daily	<i>Shophahara</i> (alleviates swelling)
3.	<i>Drakshadi kashaya</i>	20ml + 40ml of warm water- twice daily	<i>Pitta shamana</i> (alleviates Pitta dosas)
4.	<i>Chandraprabha vati</i>	1 tablet with <i>Punarnavadi kashaya</i> -once daily	<i>Kapha pitta hara</i> (alleviates kapha and pitta dosas)
5.	<i>Triphala churna</i>	1 teaspoon + 1/4 <sup>th</sup> teaspoon of ghee + 1/2 teaspoon of honey.	<i>Chakshushya rasayana</i> (eye rejuvenator).
6.	<i>Shiva gulika</i>	1 tablet with <i>Guduchyadi kashaya</i> -once daily	<i>Kapha pitta hara</i> (alleviates kapha and pitta dosa)
7.	<i>Gomutra haritaki lehya</i>	1 teaspoon at bed time	<i>Kapha vata hara</i> (alleviates kapha and vata dosas)

**Table 2.** List of treatments with their possible effects

Serial No.	Treatment	Possible Effect
1.	<i>Pratimarsha nasya</i> (nasal drops) with <i>Anu tailam</i> .	<i>Tridosha shamana</i> (alleviates all the 3 <i>dosas</i> of the body).
2.	<i>Talapodichil</i> with <i>Punarnavadi churna</i> .	<i>Pitta shamana</i> (alleviates <i>Pitta dosa</i> ), <i>Shophahara</i> (alleviates swelling).
3.	<i>Vidalaka</i> (application of medicinal paste around the eyes) with <i>Mukkadi purambada</i>	<i>Pitta shamana</i> (alleviates <i>Pitta dosa</i> )
4.	<i>Anjana karma</i> (application of collyrium) with <i>Elaneer kozhumb</i> .	- <i>Pitta shamana</i> (alleviates the <i>pitta dosa</i> ). - <i>Ropana</i> (healing).

subsequent order of treatments and their possible effects.

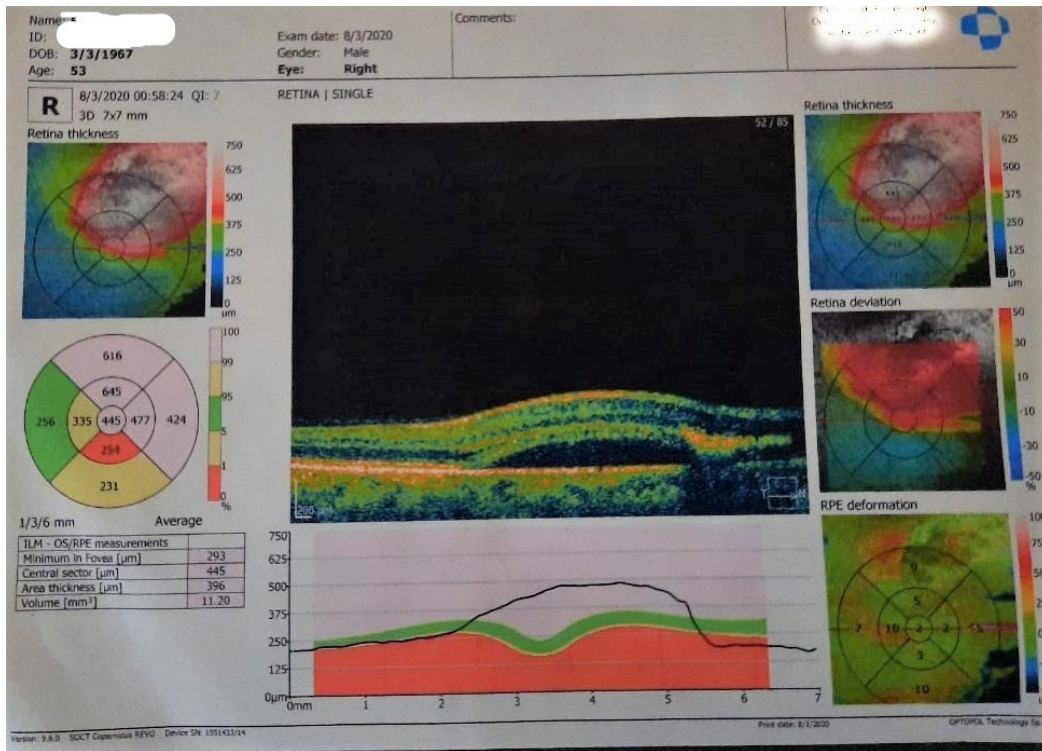
## 5.1 Diet and Regimen

Diet and regimen play a vital role in abet treatments' effects. Here, the patient was advised to follow a diet and regimen that would help balance all the three dosas. Food like spicy, sour, oily, fermented and refrigerated ones were avoided. Day sleep, going out in the sun, waking up till late at night, visualizing bright, shining objects were restricted.

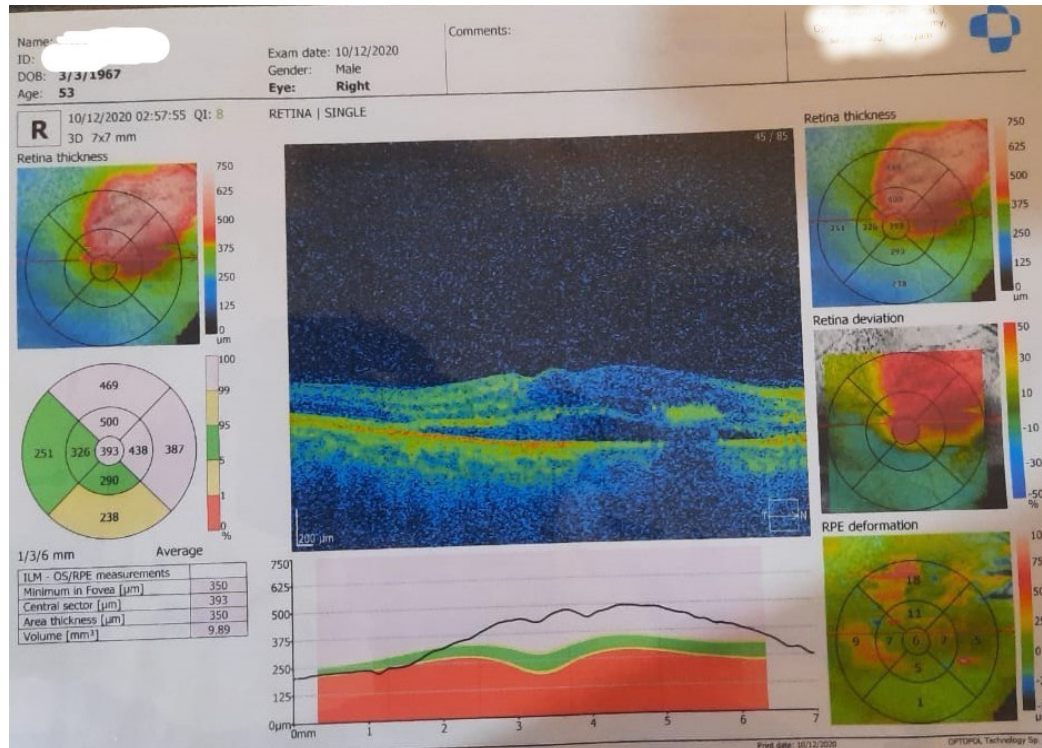
## 6. Follow Up and Outcomes

After three months of treatment, the patient reported improvement in his vision. His visual acuity in the right

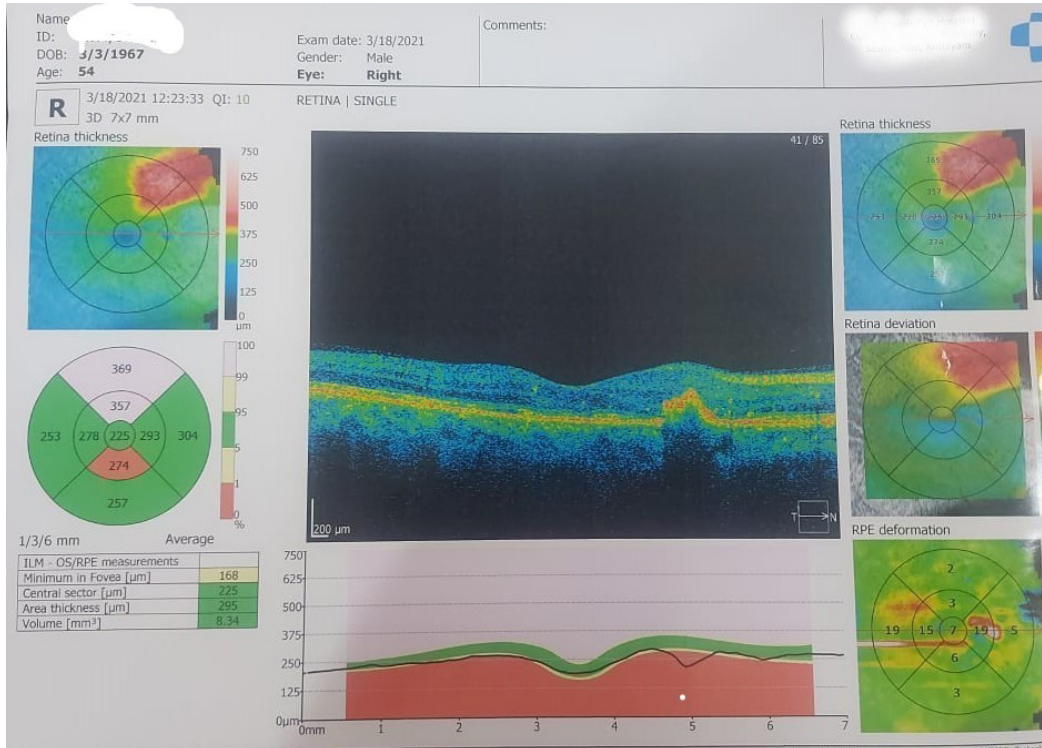
eye improved from the baseline 6/60 to 6/12; the CMT was reduced to 372  $\mu\text{m}$  and an average macular area volume of 10.12 $\text{mm}^3$ . This encouraged him to continue the treatment. Upon consultation in the fifth month of treatment, his vision further improved to 6/9. At the end of 8 months of treatment, his vision was 6/6; CMT was 224  $\mu\text{m}$  and an average macular area volume of 8.43 $\text{mm}^3$ . Figures 1, 2 and 3 show the OCT of the patient's right eye before, during, and after treatment. Figure 4 shows the consolidated OCT reports of the visits in the first, third and eighth months of treatment. Figure 5 shows the Timeline of events.



**Figure 1.** The OCT (OD) Before treatment.



**Figure 2.** The OCT (OD) During treatment.



**Figure 3.** The OCT (OD) After treatment.



**Figure 4.** The consolidated OCT reports (OD) in the 1st, 3rd and 8th month.

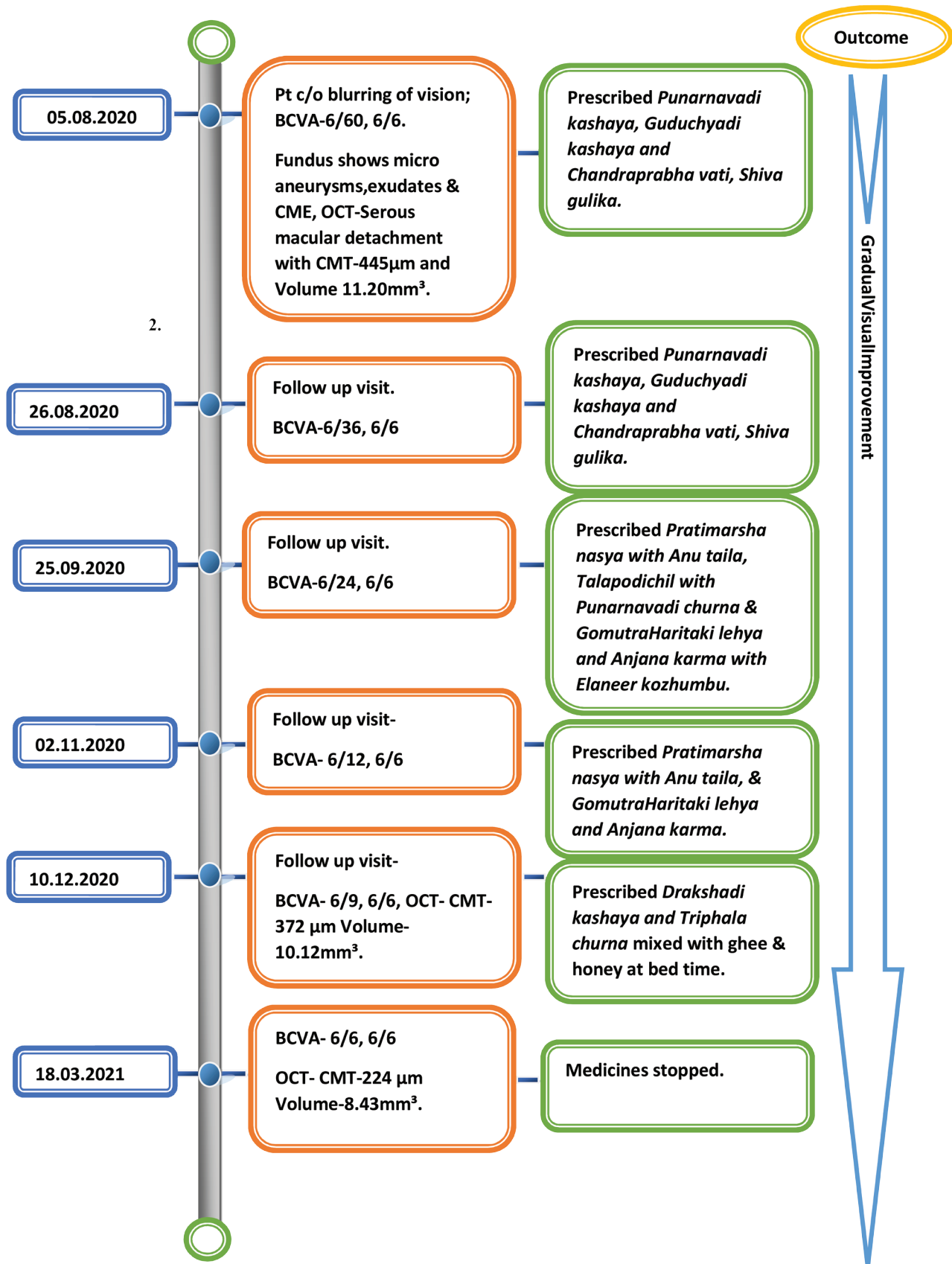


Figure 5. Timeline of events.

## 7. Discussion

### 7.1 Strengths and Limitations

This article does not contain the month-wise evaluation of DME through OCT which would have helped project the subtle changes in the reversal of pathology through the treatment. Nonetheless, the strength of the article is the consolidated OCT report taken in the first, third, and eighth months which clearly points out the improvement in the condition.

### 7.2 The Rationale Behind Ayurvedic Intervention

From the Ayurvedic point of view, this was a case of *Kapha pradhana*, *Sannipataja netra roga* (eye disease caused by all the three dosas of the body, especially Kapha). The underlying cause is *Prameha* (diabetes), and the predominantly vitiated *dosa* is *Kapha*<sup>7</sup>. This *Kapha dosa*, along with *Rakta* (the blood component of the body), when lodged in the *Drishtimandala* (the innermost part of the eye), manifests as signs of aneurysms, hemorrhages, etc. *Kapha* and *Vata dosa* cause *Shopha* (edema)<sup>7</sup>. Exudates are also suggestive of *Kapha & Pitta dosas*. So, the treatment was expected to act as *Tridosha shamana* (alleviate all the three dosas), *Rakta prasadaka* (purifies the blood component), and *Shophahara* (alleviate edema).

*Punarnavadi kashaya* contains *Dasamula* (a group of ten roots), *Shunti* (*Zingiber officinale*), and *Guggulu* (*Commiphora mukul*) as ingredients, along with *Chandraprabha Vati* made up of *Shilajit* (*Asphaltum punjabinum*), *Guggulu*, *Karpura* (*Cinnamomum camphora*), *Ativisha* (*Aconitum heterophyllum*), *Haridra* (*Curcuma longa*), etc. were *Shopha hara* (pacifies edema). *Guduchyadi kashaya* contains drugs like *Saptachada* (*Alstonia scholaris*), *Ativisha* (*Aconitum heterophyllum*), *Aragwadha* (*Cassia fistula*), *Amrita* (*Tinospora cordifolia*), *Patha* (*Cissampelos pareira*), *Musta* (*Cyperus rotundus*), *Katukarohini* (*Picrorhiza kurroa*), *Ushira* (*Vetiveria zizanioides*), etc which are *Tikta rasa pradhana* (bitter in taste) and of *Sheeta veerya* (cold attribute) in nature. They alleviated the *Pitta Vata and Rakta dosas*. *Shiva Gulika* contains *Triphala* (combination of *Haritaki-Terminalia chebula*, *Vibhitaki-Terminalia bellerika*, and *Amalaki-Embllica officinalis*), *Trikatu* (combination of *Shunti-Zingiber*

*officinale*, *Maricha-Piper nigrum. L* and *Pippali-Piper longum. L*), *Dasamula* (a group of ten roots), *Gomutra* (cow urine), *Ghrita* (cow ghee), *Tila taila* (Sesame oil), etc. It had a *Lekhana* (scraping) effect on the excessive *Kapha dosa*. *Gomutra Haritaki lehya* contains *Gomutra* (cow urine) and *Haritaki* (*Terminalia chebula*). It also helped to scrape out the *Kapha dosa*. *Anu taila* did *Dosa shamana* while *Anjana karma* (application of collyrium) with *Elaneer kozhumb* which comprises drugs like *Daru haridra* (*Berberis aristata*), *Triphala*, *Karpura* (*Cinnamomum camphora*), *Saindhava* and *Narikela jala* (tender coconut water) alleviated the *Pitta Kapha dosas*, thereby reducing edema. Also, the *Ropana* (healing) property of this *Anjana* helped in the gradual healing of the lesion, resulting in improved vision. As his vision improved, all the above internal medicines were stopped, and he was prescribed *Drakshadi kashaya* for *Pitta shamana* (alleviate Pitta dosa). He was advised to take one teaspoon of *Triphala churna* along with ¼ teaspoon of plain ghee and ½ teaspoon of honey at bedtime. *Triphala* is the best *Chakshushya rasayana* (eye rejuvenator), as are ghee and honey. *Acharyas* have devised this combination to be consumed by a patient suffering from eye diseases. These helped to rejuvenate the damaged cells of the macula, thereby retaining the normal vision after the treatment.

## 8. Conclusion

The reversal of pathology, which was not attained through Anti VEG-F injection, was easily achieved by Ayurvedic treatment in a short period of 8 months with a minimal financial or mental burden on the patient. The pathological process of diabetes getting complicated to retinopathy and further to DME was slowed down, and the pathology of the already manifested DME was reversed to normalcy through Ayurvedic intervention in this case. However, clinical trials with large samples can help establish the potential of Ayurvedic treatment in cases of DME.

## 9. Take Away Message

DME can be managed well through Ayurvedic treatment. It probably works by reversing the pathology of DME, thereby bringing about considerable improvement

in vision and preventing further complications like neovascularisation.

## 10. Patient Perspective

“I experienced blurred vision in the right eye and consulted an Ophthalmologist. He examined my eyes and told me that I had developed retinopathy in my right eye as a complication of diabetes and advised me to take an injection. I took the injection but the vision did not improve. So, he advised me to undergo another course of the same injection but assured no improvement in the vision. But, I chose to try out Ayurvedic treatment and consulted the Doctor. She prescribed me a few *Kashayas*, tablets and nasal drops. I underwent eye treatments in the form of the application of medicine on the eyes and the use of collyrium. A specially prepared medicine was applied on the head also. The Doctor advised me to follow certain diet and daily regimen, which I strictly adhered to. As the treatment progressed, I started feeling better in terms of improvement in vision. This gave me confidence and I continued the treatment. After three months of treatment, upon taking the eye scan, the Ophthalmologist reported that the condition was improving. In about eight months, I regained my vision completely and I was able to read all the lines in the vision chart. The scan report also confirmed that there was no more swelling in nerve of my right eye. I am thankful to the Doctor and also to God for giving back my vision”.

## 11. Informed Consent

Written informed consent was obtained from the patient for publication of this case report and

any accompanying images are made available for verification by the Editor of the Journal.

## 12. Author Contribution

Both the authors made equal contribution in treating the case, documenting it and structuring the manuscript.

## 13. Conflict of Interest

None declared.

## 14. Sources of Funding

None declared.

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