Introduction

This case reports a post viral olfactory dysfunction (PVOD) due to SARS-CoV-2 infection, since six months treated effectively by a unique integrative approach with Ayurveda and Traditional Chinese Acupuncture (TCA). It started as a sudden onset of anosmia in the month of August 2020 with fever history two weeks prior. After three months Parosmia commenced which gradually worsened. A month later she experienced dysgeusia and nausea leading to tremendous stress and sleep disturbances. Ayurveda treatment included Shabdindu taila marsha nasya for seven days followed by Shabdindu taila pratimarsha nasya (intra nasal oil instillation) for a period of four months. Naradiya laxmivilasa rasa orally for one month. GV.20, LI.20, Ex.1, H.7, LI.11, GB.8, GB.21 and GV.25 Points were selected for TCA. The Indian Smell identification test score on day one of treatment was zero, day seven was four, at the end of one month was eight and after four months it was ten. Parosmia was assessed by VAS which was ten on day one and zero on day seven. We could achieve complete normalcy in olfactory function within four months of this treatment. This integrative approach was found to be safe and effective in treating Post covid parosmia.

Case report

This case is about a post viral olfactory dysfunction due to SARS-CoV-2 infection, since six months treated effectively by a unique integrative approach with Ayurveda and Traditional Chinese Acupuncture (TCA). It started as a sudden onset of anosmia in the month of August 2020 with fever history two weeks prior. After three months Parosmia commenced which gradually worsened. A month later she experienced dysgeusia and nausea leading to tremendous stress and sleep disturbances. Ayurveda treatment included Shabdindu taila marsha nasya for seven days followed by Shabdindu taila pratimarsha nasya (intra nasal oil instillation) for a period of four months. Naradiya laxmivilasa rasa orally for one month. GV.20, LI.20, Ex.1, H.7, LI.11, GB.8, GB.21 and GV.25 Points were selected for TCA. The Indian Smell identification test score on day one of treatment was zero, day seven was four, at the end of one month was eight and after four months it was ten. Parosmia was assessed by VAS which was ten on day one and zero on day seven. We could achieve complete normalcy in olfactory function within four months of this treatment. This integrative approach was found to be safe and effective in treating Post covid parosmia.

Keywords:
Ayurveda
Traditional Chinese acupuncture
Integrative approach
Parosmia

1. Introduction

This case reports a post viral olfactory dysfunction (PVOD) due to SARS-CoV-2 infection, since six months treated effectively by a unique integrative approach with Ayurveda and TCA. Post covid parosmia is not a minor issue since it causes serious problems with eating and mental well-being [1]. In an international study of people with recent smell loss, seven percentage of more than 4000 respondents reported experiencing parosmia [2]. But in a recent survey study of six month follow up, of a cohort of 434 subjects; almost half had parosmia [3]. A systematic review showed that there is no strong evidence for different pharmacologic agents in treating post viral olfactory dysfunction [4]. Ayurveda considers olfactory function being executed by Vata dosha [5] and Parithivadraya [6] (Kaphadosha) and hence olfactory dysfunction is due to vitiated vata and kapha dosha. In this case we included Marsha nasya and Pratimrashanasya (intra nasal oil instillation) with Shabdindu taila [7] and oral intake of Naradiya laxmivilasa rasa [8]. Clinical studies showed that TCA was effective in PVOD [9,10]. We report this case as the integrative approach resulted in rapid improvement of parosmia and quality of life.

2. Case presentation

We present a case of 20 years old female complaining of change in the perception of smell since six months. It commenced as a sudden onset of anosmia in the month of August 2020 with a fever history which had appeared two weeks prior. She underwent treatment for five days with oral antibiotics and nasal drops of which the details are not known. But there was no change in her anosmia. After three months she started perceiving foul smell while eating which gradually worsened. She had to avoid all her favorite foods and drinks due to the mal odor. A month later she started experiencing impaired sense of taste along with nausea while eating. This resulted in tremendous stress leading to sleep disturbances and she opted for Ayurveda Treatment. She was
advised to undergo test for Covid IgG Antibodies and was found to be reactive that confirms the diagnosis of post Covid parosmia.

3. Clinical findings

Anterior Rhinoscopy was normal except for Type I DNS towards left. There was no history of any head injury, epilepsy, upper respiratory tract infections, chronic sinusitis and any medications. The patient had no other complaints pertaining to the nervous system except olfactory dysfunction or other symptoms in the post-covid period.

4. Diagnostic assessments

Olfactory function was assessed based on Indian Smell identification test (ISIT). ISIT score for anosmia scoring was zero [11]. Parosmia was evaluated based on quantitative and qualitative measures where in it showed severe alteration in quantitative and VAS Score of ten in qualitative aspect [12]. The quantitative aspect was assessed with a scale of normal, mild alteration, moderate alteration and severe alteration.

5. Therapeutic intervention

Ayurveda treatment given is depicted in Table 1. We selected GV.20, LL.20, Ex.1, H.7, LL.11, GB.8, GB.21 and GV.25 points for TCA. The therapeutic intervention of these points is depicted in Table 2. The schematic representation of the same given in Fig. 1

7. Discussion

The integrative approach was effective in improving the anosmia (ISIT score from zero to ten) after four months of treatment and in relieving parosmia completely within a week. There are evidences that hypothesize the pharmaco-dynamic effects of Marsha nasya/Pratimarsha nasya via olfactory bulb and neuro-epithelia, making them primary treatment modalities in parosmia [14]. Shadbindu taila was selected in treating this case as it pacifies vitiated Vata and Kapha dosha which causes parosmia. A study of skin irritation potential on rabbit skin showed that Shadbindu taila did not produce any adverse events and safe to use in humans [15]. Naradiya laxmivilasa rasa reduces vitiated Vatakapha dosha and it is indicated in nasal disorders as well.

### Table 1

| Treatment                           | Dose                | Anupana          | Time       | Duration        |
|-------------------------------------|---------------------|------------------|------------|-----------------|
| Nasya with Shadbindu taila done by the therapist. (Ingredients of Shadbindu taila are depicted in Table 2) | Eight Bindu (4 ml) instilled into each nostrils | --       | Morning hours | Seven days     |
| Acupuncture done by the physician   | --                  | --               | Afternoon  | 20 min duration for seven days |
| Naradiya laxmivilasa rasa tablet (Ingredients are depicted in Table 3) | One tablet (250 mg) | Lukewarm water | Thrice daily after food | One month |
| Pratimarsha nasya with Shadbindu taila done by the patient during follow up period. | Two Bindu (1 ml) instilled into each nostrils | --       | Thrice daily  | Day eight to the end of four months |

### Table 2

| S.no | TCA Point Selected | Indication                      | Anatomical location | Needling angle         |
|------|--------------------|---------------------------------|---------------------|------------------------|
| 1    | GV.20              | Powerful sedative point         | At the vertex of the head in a depression in the midline of the cranium on the line which joins the tip of one ear to the other. The point is 7 cun above the posterior hairline, and 5 cun above the anterior hairline. In the nasolabial groove, at the level of the midpoint of ala nasi | Perpendicular or oblique insertion 0.3–0.5 cun. |
| 2    | LL.20              | For all nasal disorders         | In the nasolabial groove, at the level of the midpoint of ala nasi | Perpendicular or oblique insertion 0.3–0.5 cun. |
| 3    | Ex. 1              | Rhinorrhea, Insomnia            | At the forehead, in the midpoint between the two medial end of the eyebrows | Perpendicular or oblique downward insertion 0.8–1.5 cun. |
| 4    | LL.11              | All chronic infectious disorders Antibiotic point or best Immunity improving point. | When the elbow is flexed, the point is found in the depression at the lateral end of the transverse cubital crease | Perpendicular or oblique downward insertion 0.8–1.5 cun. |
| 5    | H.7                | Anxiety, Insomnia, Psychosomatic disorders | On the radial side of the tendon of the flexor carpi ulnaris, on the transverse crest of the wrist. | Perpendicular insertion 0.3–0.5 cun. |
| 6    | GB.8               | Depressive Psychosis, vertigo, Ear diseases | Directly above the apex of the ear, 1.5 cun above the hairline. | Subcutaneous 0.5–0.8 cun. |
| 7    | GB.21              | Endocrine point                 | Midway between the tip of acromion and C7 spinous process, at the highest point of the shoulder | Perpendicular 0.5–0.8 cun. |
| 8    | GV.25              | Nasal obstruction, Rhinorrhea   | On the region of the face, on the tip of the nose. | Straight 0.2–0.3 cun. |
effectiveness of certain specific acupuncture points such as distal points and confluential points can be explained based on the Thalamic neuron theory [16]. The Thalamic Neuron Theory postulates that the central nervous system is involved in all disease processes, it maintains homeostasis for the entire body by sending commands to the periphery. Pathologically habituated states can be reversed by dehabituation through manipulation or rectification of the abnormal neural circuits by physical means (physical neuromodulation) like acupuncture [17]. In this case pathologically habituated state refers to altered smell perception which can be dehabituated and restore the normal smell perception with the help of acupuncture.

In general, principles used in selection of TCA points are a) all acupuncture points treat the disease of the pathway of channel and their pertaining organs. b) Acupuncture points have an effect

| S NO | INGREDIENTS | LATIN NAME | QUANTITY |
|------|-------------|------------|----------|
| 1 | Tila Taila | Sesamum indicum DC. | 768 ml |
| 2 | Aja Dugdha | Goats milk | 3.072lts |
| 3 | Bhringaraja | Eclipta alba Linn | 3.072lts |
| 4 | Eranda | Ricinus Comunis Linn | 19 gms |
| 5 | Tagara | Valeriana wallichii DC. | 19 gms |
| 6 | Shatuhva | Anethum sowa Kurz | 19 gms |
| 7 | Rasna | Pluchea lanceolata C.B.Clarke | 19 gms |
| 8 | Jeevanthi | Leptadinia retriculata (Retz.) Wt.etArn | 19 gms |
| 9 | Saindhava | Rock salt | 19 gms |
| 10 | Bringa | Cinnamomom zeylanicum Blume. | 19 gms |
| 11 | Vidanga | Embelia ribes Dur. | 19 gms |
| 12 | Yashhti | Glycerrhiza glabra Linn. | 19 gms |
| 13 | Vishwoushadha | Zingiber officinalis Rosc.Ex.Smith | 19 gms |

Manufacturer: Ayukalp, Gujrat, India.

Table 3: Ingredients of Shadbindu taila [7].
on the surrounding area of its location therefore useful for treating diseases of surrounding area [18]. Based on these principles eight TCA points were selected for treating this patient. The TCA points GV.20, LI.20, Ex.1, LI.11, GV.25 were selected due to their indication in nasal disorders. H.7 was selected since its mainly indicated in anxiety and sleep disturbance [13]. Acupressure on GB.21 TCA point is believed to reduce anxiety level which in turn helps in creating calmness and balance throughout the body and mind [19]. GB.8 was selected based on the effect of acupuncture point on the surrounding area of its location [13]. Since Ayurveda and Traditional Chinese Medicine (TCM) have common philosophical back ground [20] and TCA is a non-pharmacological intervention, we could infer that there will be no side effects by this unique integrative approach. There was considerable improvement in her quality of life in terms of sleep, food intake and psychological stress.

Table 4

| S NO | INGREDIENTS                  | LATIN NAME                  | QUANTITY |
|------|------------------------------|-----------------------------|----------|
| 1    | Abhroka Bhasma               | Purified and processed mica | 10 gms   |
| 2    | Shuddha Parada               | Herbal purified mercury     | 10 gms   |
| 3    | Shuddha Gandhaka             | Herbal purified Sulphur     | 10 gms   |
| 4    | Karpoora                    | Cinnamon camphora Nees & Eberm. | 10 gms |
| 5    | Jatiphala                   | Myristica fragrans Hentl.   | 10 gms   |
| 6    | Jatikoshka                  | Myristica fragrans Hentl.   | 10 gms   |
| 7    | Vridhadihara                | Argyrea speciosa Sweet.     | 10 gms   |
| 8    | Dhattura                    | Datura metel Linn           | 10 gms   |
| 9    | Bhangi                      | Cannabis sativa Linn        | 10 gms   |
| 10   | Vidari                      | Puertiae toberos DC.        | 10 gms   |
| 11   | Shatavari                   | Asperagus racemosus Wild.   | 10 gms   |
| 12   | Nagabala                    | Grewia populinolia Vahl.    | 10 gms   |
| 13   | Atibala                     | Abuation indicum Linn.      | 10 gms   |
| 14   | Gokshura                    | Tribulus terrestris Linn    | 10 gms   |
| 15   | Nichula                     | Stryxynus nuxvomica Linn    | 10 gms   |
| 16   | Nagavalli                   | Piper betel Linn            | 10 gms   |

Manufacturer: Dhootpapeshwar, Maharashtra, India.

Treatment outcome and follow up

Table 5

| S.no | Test | Symptom | Before treatment | On day 7 of treatment | After one month | After 4 months |
|------|------|---------|------------------|-----------------------|-----------------|----------------|
| 1    | ISIT | Anosmia | 0                | 4                     | 8               | 10             |
| 2    | VAS  | Parosmia| 10               | 0                     | 0               | 0              |
| 3    | Severity analysis | Parosmia | Severe alterations | Normal | Normal | Normal |

Showing the treatment outcomes in individual Symptom.

8. Conclusion

Post covid parosmia can hamper the quality of life in many ways and should be treated effectively by all means for a faster recovery. In this case, integrative approach of Ayurveda and TCA cured parosmia within a week and anosmia in four months and was found safe as well. Taking leads from this case, it would be tested on larger samples in the near future and later incorporate into clinical guidelines for integrative management of post covid parosmia.

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None.

Conflict of interest

The authors have no conflict of interest to declare.

Credit author statement

Akshatha K Bhat: Conceptualization, Methodology, Validation, Writing original draft. Krishna Kumar: Conceptualization, Resources, Writing – Review & editing. Jim Daniel Johnson: Conceptualization, Resources, Writing – Review & editing.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jaim.2022.100560.

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