



Case Report

Five years of disease-free survival in a case of recurrent, post-op, grade 3, stage 2, Malignant Spindle Cell Melanoma treated with Ayurvedic medicines: A case report

Ranjit G. Nimbalkar^a, Anil T. Pawar^b, Amol A. Tagalpallewar^b, Akshay M. Baheti^b, Satish Chapadgaonkar^c, Manasi R. Nimbalkar^{d,*}^a Ayurved Practitioner, Anubandha Health Care, Comprehensive Cancer Care Clinic, Tilak Road, Pune, India^b School of Health Sciences and Technology, Dr. Vishwanath Karad MIT World Peace University, Pune, India^c Poornayu Ayurved Chikitsalaya Evam Anusandhan Vidyapeeth, Dayoday Tirth, Tilwaraghat, Jabalpur, India^d Department of Kriya Sharir, Ashtang Ayurved Mahavidyalaya, Pune, India

ARTICLE INFO

Keywords:

Ayurveda

Disease-free survival

Rasayana

Spindle cell cancer

Sukumara ghritam

ABSTRACT

Malignant spindle cell melanoma is a rare cancer with a questionable prognosis because of limited published case reports. This article discusses a male patient with a history of Spindle cell melanoma tumor, Rt heel, Grade 3 (Gr 3) Stage 2 (St 2) seen in our OPD treated with supporting herbo-mineral combination of Ayurvedic medicine. Such types of cancers are of concern and can be more troublesome to the patient. The initial chief complaint of the patient was a palpable corn-like growth in the right heel, which was surgically removed at that time. When it recurred after one year, it was investigated thoroughly and it was found malignant, and then operated again.

The patient came to us after his second operation. After appropriate analysis based on Ayurvedic and modern parameters, the patient was treated with Ayurved treatment. As there was no other treatment suggested by oncologists, he was on supportive Ayurvedic treatment only. Ayurvedic treatment continued for 2 years afterwards. The treatment module showed complete relief in the symptoms (100%), by the end of treatment. Follow-up PET scans showed further improvement and a complete reversal of residual disease was observed. The last PET scan did not show any evidence of abnormality. To date, there has been no recurrence and the patient has been living completely normally for the last almost 5 years (karnofsky score 90/100). It can be concluded that the addition of Ayurvedic treatment might have helped this patient of malignant spindle cell melanoma for regression of residual disease, prevention of metastasis to date, and a good quality of life. We have observed 5+ years of disease-free survival and near-normal quality of life for this patient, and still ongoing.

1. Introduction

Melanoma is an aggressive tumor and has a propensity to metastasize to lymph nodes, lungs, liver and any other sites of the body [1,2]. An uncommon subtype of malignant melanoma called spindle cell melanoma (SCM) has spindled neoplastic cells organized in sheets and fascicles [3]. The prevalence rate for SCM ranges from 3% to 14%. SCM can appear anywhere on the body and frequently resembles amelanotic lesions, including scarring and inflammation, making the diagnosis of SCM difficult [4,5]. Histologically, SCM's cytologic characteristics are indistinct and frequently mistaken for those of other epithelial

neoplasms, such as lymphomas and sarcomas [6–9]. Malignant spindle cell melanoma is not a very commonly diagnosed cancer but can be fatal if left untreated. It comprises a diverse range of diseases with different histologically defined subgroups, clinical manifestations, therapeutic responses, and outcomes (prognoses) [10]. SCM diagnosis is often delayed until patients demonstrate advanced-stage disease, which is typically accompanied by widespread metastases and poor treatment outcomes [11]. This paper aims to discuss and report a case of malignant spindle cell melanoma of the Rt heel, grade 3 stage 2 patient.

Peer review under responsibility of Transdisciplinary University, Bangalore.

* Corresponding author. Manasi R. Nimbalkar

E-mail address: manasi.dr@gmail.com (M.R. Nimbalkar).<https://doi.org/10.1016/j.jaim.2024.100976>

Received 12 January 2023; Received in revised form 10 May 2024; Accepted 14 May 2024

0975-9476/© 2024 The Authors. Published by Elsevier B.V. on behalf of Institute of Transdisciplinary Health Sciences and Technology and World Ayurveda Foundation This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

2. Patient information

A 76-year-old male patient with a history of surgically removed corn of Rt heel visited the OPD on 07/11/2018. He was a coal mine engineer with history of direct exposure to coal in his occupation. His height was about 5 Ft and weight was 56 kg with moderate build (BMI 24.2 kg/m²).

2.1. Past medical history

The patient had hypertension since 2008, well-controlled with medication. He also experienced a CVA in April 2015. He recovered from his CVA.

2.2. Present medical history

The patient first noticed a corn in the right heel in November 2017. It was surgically removed. He again experienced ulceration and corn at the same location almost a year later (October 2018). This time, it was investigated and a biopsy revealed a malignant spindle cell tumor. It was operated. Biopsy and immunohistochemistry (IHC) confirmed its subtype as malignant melanoma. This time, wide local excision (WLE) was done, with a skin graft from the right thigh. Inguinal lymph nodes were also excised because they were palpable and found metabolically active in pre-op PET CT scan. All the excised mass was again investigated and found to be malignant Spindle cell melanoma. One month after surgery, the patient visited our OPD, where Ayurvedic treatment was initiated, in November 2018.

3. Clinical findings

When the patient arrived at the OPD, a detailed examination revealed the following findings.

3.1. Dashavidha pariksha (Tenfold examination)

The patient's *vaya* (age) was *vrudhavadhastha* (old age), His *prakriti* (physical attributes) was *Vata-pittaja* (predominant *Vata* and *Pitta*), *Rakta* (blood), *Meda* (Fat) and *Asthi* (bones) were *Asara* (~weakness of *Dushya* or tissue elements), *Pramaana* (measurement of body constituents) was *madhyama* (moderate built), *Saatmya* (suitability) *Madhura* excessive, especially after meals. *Samhanana* (tissue or organ compactness) was *shithila* (loose) and *Sattva* (psychic condition) were *Pravara* (good); the patient's *Aharashakti* (power of food intake and digestion) was *Madhyama* (Medium) and *Vyayama shakti* (power of exercising) was *Alpa* (low).

3.2. Systemic examination

He did not exhibit any icterus, cyanosis, clubbing, or pallor. The tongue was moist and clear (*Niraama*). The bladder was normal and the bowel was normal with occasional flatulence. Sleep was normal. Although anxious, he was conscious and well-organized (CNS). Respiratory system (RS) and Cardiovascular Systems (CVS) were both within normal limits. The wound that had developed after surgery was healing properly. Skin removal from the thigh showed some stretched feeling. The patient was on antihypertensive medicines and his blood pressure was 130/80 mm of Hg. His karnofsky score was 50/100.

3.3. Primary concerns and symptoms of the patient

1. Post-operative pain and discomfort at the right heel and thigh region (skin graft)
2. Post-operative pain at the right inguinal region
3. Quality of life
4. Delay/prevent recurrence

4. Time line and diagnostic assessment

1. The patient noticed a corn-like growth in November 2017, which was operated. It was again visible at the same place after one year (Recurrence).
2. So, the patient underwent a PET scan before surgery, as per the oncologist's recommendation, on 16th October 2018. It showed evidence of low-grade metabolically active soft tissue and skin thickening involving the right heel region, metabolically active rt inguino-femoral metastatic nodes.
3. F/U PET was done post-op, in January 2019, (after beginning Ayurvedic treatment in November 2018). It showed that the residual metabolic activity of skin and soft tissue was still present. Inguino-femoral LNs were not seen this time (post-op status).
4. Again a follow-up scan was done on 22nd August 2019, which showed that the residual disease present on the first two PET scans was completely gone and there was no evidence of metabolically active disease anywhere in the body.
5. Again a follow-up PET was done on our advice on 9th December 2021. This time also, there were no signs of recurrence and the scan was absolutely normal.

Table 1 shows the timeline of the current case. The patient compliance towards the treatment was very good (*Bhishag-vashya*, *Dnyapak* and *sattwawan*).

5. Therapeutic interventions

Few points were taken into consideration while designing the treatment Viz. the patient's old age, somewhat *asarata* of *Rakta*, *Meda* and *Asthi*, *saatmya* of excessive *Madhura* (sweet dominated diet) as provided by *Dashavidha pariksha*, disease aggressiveness, involvement of *Rakta* and *Asthi Dhatu*, healing of the wounds following surgery, and psychological trauma.

Accordingly, it was considered as chiefly *Vata-Pitta* dominating *Tri-dosha awastha*, with vitiation of mainly *Asthi* and *Rakta dhatus*, with vitiation of *Oja* due to previous psychological trauma, and Ayurvedic

Table 1
Timeline.

Investigation	Date	Remark
Positron Emission Tomography (PET) Scan	16/10/2018	Low-grade metabolically active soft tissue and skin thickening involving the right heel region. Metabolically active right inguinal lymph nodes appear metastatic.
Biopsy	18/10/2018	Moderate pleomorphism. Malignant spindle cell tumor.
Surgery	25/10/2018	WLE right heel ulcer, Rt inguinal block dissection, reverse sural artery flap, skin grafting
Immunohistochemistry (IHC)	28/10/2018	Tumor cells positive for Vimentin, S-100 protein and Melan-A, s/o Malignant melanoma.
Histopathology (HPE)	31/10/2018	Acanthotic and hyperkeratotic skin with an ulcer, Infiltrative tumor in the dermis, of spindle and polygonal cells, LN shows poorly differentiated metastatic tumor, 1/6 nodes positive with perinodal spread
Follow Up (F/U) PET scan	23/01/2019	Persistent low-grade metabolically active soft tissue and skin thickening involving rt heel region. No disease elsewhere
F/U PET scan	22/08/2019	No abnormal metabolically active soft tissue and skin thickening in the right heel region.
F/U PET scan	20/12/2021	No abnormal metabolically active soft tissue and skin thickening in the right heel region.

treatment was planned accordingly.

Medication, nutrition, and regimen have been the three parts of the therapeutic intervention. The patient received the medication which is listed in Table 2. Along with the medication, a simple, balanced diet was suggested, and it was urged to avoid consuming too much sweet, sour, pungent, salty and oil-rich, deep-fried food. It was also suggested to get enough rest and practice some light exercises. His wounds began to heal over time, and his general health improved. For six months, the same routine was followed. Improvement in patient state is mentioned in Table 4.

F/U PET scan in January 2019, three months after the surgery, revealed residual disease. The same treatment was therefore continued.

Following complete wound healing and health restoration, an F/U PET scan was done in August 2019 (i.e. 10 months from initiation of Ayurved treatment). It showed that there was no residual disease left. So, the treatment plan was slightly modified to place greater emphasis on preserving health, improving quality of life and preventing/prolonging recurrence. Accordingly, the treatment was modified as shown in Table 3. Two more years of treatment were suggested. But, after slightly more than a year, the patient decided to stop the treatment on his own (December 2020). We had also planned for 14 days of *Tikta ksheera ghrta basti* (enema-like treatment). However, it was not possible due to the patient's unwillingness and several other practical issues (such as the outbreak of COVID-19). We respected his decision and he has not taken any medication from January 2021 till date. He didn't practice any preventive home remedies for COVID-19 as well. He is still being monitored and comes intermittently for checkups. As per our advice, he got his PET done in December 2021, which was also normal as described previously.

6. Follow-up up and outcome

Malignant spindle cell melanoma is a highly aggressive condition with an 8–9 month median survival rate. But even after 5 years, this patient is doing quite well. His Karnofsky score is 90/100. Most probably supporting Ayurvedic treatment considerably enhanced the patient's overall health, quality of life and disease-free survival. It also helped in the wound-healing process.

7. Discussion

Malignant spindle cell melanomas are a very rare type of clinical condition. In any malignancy, responses and prognoses change as per grade and stage of disease. In this case, the tumor cells were showing moderate pleomorphism, and the cells in the metastatic inguinal lymph nodes were showing poor differentiation. So, it was a grade 3 tumor.

Table 2
Therapeutic intervention (7/11/2018 to 4/9/2019, 10 months)

No.	Medicine	Dose	Time
1.	<i>Suvarna Malini Vasanta</i>	125 mg	<i>Rasayana</i> (Morning empty stomach)
2.	<i>Dhatri</i> (<i>Embllica officinalis</i> Gaertn)	500 mg	Morning empty stomach and at bedtime
3.	<i>Guduchi</i> (<i>Tinospora cordifolia</i> (Willd.) Hook. f. and Thoms)	500 mg	Morning empty stomach and at bedtime
4.	<i>Vacha</i> (<i>Acorus calamus</i> Linn)	500 mg	Before lunch and dinner
5.	<i>Sookshma Triphala</i> (mixture of <i>Kajjali</i> and <i>Terminalia chebula</i> , <i>Terminalia bellerica</i> , <i>Embllica officinalis</i>)	250 mg	Before lunch and dinner
6.	<i>Sukumar Ghrutam</i> (herbal classical ghee preparation)	5 ml	Before lunch and dinner
7.	<i>Guduchi Yashiti Ksheer</i> (Liquorice and <i>Tinospora cordifolia</i> boiled milk)	100 ml	<i>Rasayana</i> (Morning empty stomach), with <i>Suvarna Malini Vasanta</i>

Table 3

Medicines after complete wound healing (5/9/2019 to 7/12/2020, 15 months)

No.	Medicine	Dose	Time
1.	<i>Suvarna Malini Vasanta</i>	125 mg	<i>Rasayana</i> (Morning empty stomach)
2.	<i>Dhatri</i> (<i>Embllica officinalis</i> Gaertn)	500 mg	Morning empty stomach and at bedtime
3.	<i>Guduchi</i> (<i>Tinospora cordifolia</i> (Willd.) Hook. f. and Thoms)	500 mg	Morning empty stomach and at bedtime
4.	<i>Vidari</i> (<i>Ipomea paniculata</i> (L.) R.Br.	500 mg	Before lunch and dinner
5.	<i>Panchatikta Ghrta Guggulu</i> (Classical herbal preparation)	500 mg	Before lunch and dinner
6.	<i>Sukumar Ghritam</i> (herbal classical ghee preparation)	5 ml	Before lunch and dinner

Table 4

Improvement in patient.

No.	Symptom	Grade (Out of 10) ^a		
		Pretreatment	Post-treatment 1 Month	Post-treatment 6 months
1.	Pain at heel wound	5	2	0
2.	Pain at thigh wound	8	3	0/1
3.	Pain at inguinal wound	6	2	0
4.	Weakness	4	1	0

^a Gradations of symptoms decided as per Visual Analogue Scale.

Involvement of inguinal lymph node with perinodal invasion was a concern and it suggested stage 2. All these evidences were pointing towards a bit guarded prognosis.

Initially, *Suvarna Malini Vasanta*, *Dhatri*, *Guduchi*, *Vacha*, *Sookshma Triphala*, *Sukumar Ghrutam*, *Guduchi Yashiti Ksheer* were given.

Suvarna Malini Vasanta (SMV) [12–14] contains *Suvarna bhasma* (Calcined Aurum), *Jasad bhasma* (Clacined Zinc) *Maricha*, *Mukta* (Pearl), with trituration in *navaneeta* (butter) and *Nimbu Ras* (Lemon juice). *Suvarna bhasma* (Calcined Aurum) is a potent *vishghana* (detoxifier) *Rasayana* and *Ojavaradhaka* (immunity booster) which protects healthy tissues, especially useful against the history of psychological trauma in the patient (*Hetu pratyaneeka*) [15]. It also contains *Jasada bhasma*, which is zinc-based *bhasma*, which is a very good medicine for maintaining the metabolism (*Dhatu-sneha parampara*). Through transcription factors, zinc regulates gene expression and functions as a cofactor in the production of DNA, RNA, and proteins. Additionally, zinc aids in bone metabolism, glucose metabolism, immunological function, apoptosis, reproduction, vision maintenance, protein digestion, blood coagulation, and growth and development [16]. *Maricha* has *sookshma* (micro) and *teekshna* (penetrating) properties, which were fortified by *Bhavana* (Levigation) *Dravyas* along with butter and lemon juice. This combination thereby helps in cleansing of internal *srotasas* (channels) detoxifies the body and also nourishes tissues through specific pathways. Therefore, it was the first drug of choice.

To add to the cleansing property of SMV, *Vacha* and *Sookshma Triphala* were added to the prescription, to hasten the wound cleansing and healing. *Vacha* (*Acorus calamus* Linn), being of *Sookshma* (micro-penetrating), *Pramathi* (penetrating and cleansing) property, helps to keep channels clear and open, detoxifier, cleansing of remnants of previous wounds if any, and is useful to prevent recurrence [17,18]. *Sookshma triphala* contains *Kajjali* and *Triphala churna* in 1:10 ratio. It's a well-known antiseptic and wound healer in Ayurved [19]. *Rasayana* as well as cleansing Drugs like *Dhatri* and *Guduchi* were also included primarily for general health maintenance and to aid in wound healing [20, 21]. An increase in the activity of extracellular signal-regulated kinase 1/2, as well as increases in DNA, type III collagen, acid-soluble collagen,

aldehyde content, shrinkage temperature, and tensile strength, are all signs that *Dhatri* increased cellular proliferation and collagen cross-linking at the site of the wound and help in wound healing [21].

In order to address *Rakta dhātu*, the dryness of the internal environment, and its *Rasayana* qualities, *Sukumara ghrītam* [22] was also added. *Sukumara ghrīta* consist of Punarnava (*Boerhaavia diffusa* L.), Bilva (*Aegle marmelos* L.), Agnimantha (*Premna mucronata* L.), Shyonaka (*Oroxylum indicum* L. (Kurz)), Patala (*Stereospermum suaveolens* (Roxb) DC), Gambhari (*Gmelina arborea* Roxb), Brihati (*Solanum indicum* L.), Kantakari (*Solanum xanthocarpum* L), Gokshura (*Tribulus terrestris* L), Shalaparni (*Desmodium gangeticum* DC), Prishnaparni (*Uraria picta* (Jacq.) Desv. ex DC), Payasya (Kshirakakoli) (*Roscoe purpurea* Sm), Ashwaganda (*Withania somnifera* L), Eranda (*Ricinus communis* L), Shatavari (*Asparagus racemosus* Willd), Darbhāmoola (*Erianthus arundinaceum* Retz.), Kushāmoola (*Desmostachya bipinnata* L.), Kashāmoola (*Saccharum spontaneum* L.), Shara moola (*Saccharum arundinaceum* Retz.) Welker), Ikshumoola (*Saccharum officinarum* L), Potagala moola (*Typha elephantina* L), Guda (Jaggery), Eranda taila (Castor oil), *Ghrīta*, *Ksheera*, *Krishna* (Long piper fruit), *Krishnamoola* (Long piper root), *Saindhava Lavana* (rock salt), *Yashti* (Licorice) *Madhuka* (*Madhuka longifolia* Roxb), *Mridvika* (Raisins), *Yavani* (*Trachyspermum ammi* L), *Nagara* (Ginger).

After the wound healing and a complete sense of well-being in the patient, the treatment plan was slightly changed. For the preservation of health and avoidance of the return of ulcerous development, wound healing drugs, *Sookshma triphala* and *Vacha*, were replaced by *Rasayana* drugs, viz. *Vidari* [21] and *Panchatikta ghrīta guggulu* [23] (made up of *margosa* leaves, *Tinospora cordifolia* L, *Adhatoda vasica* L, *Trichosanthes dioica* Roxb., *Solanum xanthocarpum* Schrad. and Wendl., *Ghee*, *Commiphora mukul* Hook). Now, the treatment plan was for overall health giving support to especially *Rakta* and *Asthī dhātus* and preventing a recurrence. After two years and a normal PET scan, the patient refused to receive any more treatment. He was very comfortable and had a sense of fulfillment in life and wanted to live his life freely. We respected his decision, but being aware of the fact that melanomas are extremely aggressive and known for recurrence, and sometimes lethal too, we requested him to continue active monitoring of his disease condition, to which he agreed. So, he is still in contact and visits the clinic at least once a year. Now he is free from the disease's fear, he is living normally and keeping himself busy with his social activities and other interests.

Generally in cancers, it is very difficult to give some specific name to that particular *awastha* (pathophysiological condition) at the time of diagnosis. So, in our routine practice, we are not very keen to use some specific nomenclature to describe the condition. We try to identify the *dosha* and the *dooshya* involvement, the nature of their vitiation and plan treatment to defend that particular *dosha-dooshya* status (*Samprapti bhnga*). In this case, we understood this condition as Vitiation of *Vata* and *Pitta* dominant *Tridoshas* and *Rakta*, *Asthī* and *Oja* (vigor) as principle *dooshyas*. All the medicines were chosen to neutralize/normalize their imbalance.

As far as his diet and lifestyle are concerned, he has a habit of having more sweet and some pungent and spicy food (*Katu* and *Vidahi*). Also, his diet timings used to keep on fluctuating (*Vishamashana*). All these habits have been described to cause *Vata Pitta* dominant *Tridosha* vitiation, leading to some serious disease conditions. In this particular case, the patient being a coal mine engineer, also had a long history of coal exposure during his professional life. We counseled the patient to slowly modify his habits, which he agreed to and followed. Discontinuation of a pungent and spicy diet and consuming food at regular times, might have helped the medicines to attain the *dosha* normalcy faster.

The patient took Ayurvedic treatment for almost two years, and now for the last three years, there has been no treatment. But still, there is no recurrence and the patient is totally symptom-free. The questions of "whether the medications may have been helpful now or could the illness be self-limiting?" naturally arises. The answer to these questions are a bit difficult and partially discussed previously. The incidence of

melanomas, especially spindle cell melanomas is very rare. Melanomas in elderly males (age >70) are generally more aggressive. Again, if they are recurrent, they become even worse. If there is an involvement of a distant lymph node, it is more difficult. In this particular case, all the risk factors were present (Elderly male, age 76 years, recurrent disease, involvement of distant (inguinal) lymph node). Despite all these risk factors and the patient showed regression in the PET lesions when he was only on Ayurvedic medication and also could manage disease-free active life at this age. Now the patient is around 81 years of age and not ready to undergo an F/U PET scan. So, good quality of life and disease-free survival might be attributable to the support of Ayurved treatment. It can be said that the Ayurvedic treatment might have helped to increase his inner strength and capacity to fight the disease (Immunity).

8. Conclusion

This patient with malignant spindle cell melanoma has benefited from the addition of Ayurvedic medicine in terms of good disease-free survival, good quality of life, and quantity of life (more than 5 good years to date and ongoing). We emphasize that the patient's diagnosis was a serious worry and that Ayurvedic treatment enhanced and maintained the patient's general health and immunity.

If traditional wisdom is well blended with modern intellect, the two sciences can join hands to offer a disease-free life with good quality, to cancer patients.

The important thing to remember and practice by clinicians is to maintain all reports and paperwork of clinical findings, to keep our point in an evidence-based manner. Gathering data from such situations will serve to spark the curiosity of scientific community, which will ultimately advance the field of study. In this instance, it can be said that the therapies were effective and directed in the right direction, and they are still having a positive impact.

We understand that this is a single case and case reports are at the bottom of research pyramids as far as its reliability is concerned. So, only one case is definitely a limitation of the study. This case report is just a humble effort to bring to the notice of the scientific world that though remote, there is a possibility of some good outcomes if Ayurvedic treatments are used as add-on therapies for cancer treatments.

9. Patient's perspective on treatment received

I made the choice to start taking the Ayurvedic medications right away after the surgery. I felt better thanks to the Ayurvedic drugs. The wound was well-healed. Additionally, the area of the thigh where the skin was removed for grafting felt slightly stretched. That too disappeared. The wound close to the groin also healed. There was an overall feeling of well-being. I felt well after completing the treatment and continued with my social work. I frequently travelled alone from Pune to Delhi and Nagpur comfortably, which helped me regain my confidence. I am doing quite well despite not receiving any treatment right now. All my reports are normal.

10. Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the forms, the patient has given his consent for his/her images and other clinical information to be reported in the journal. The patient understands that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Funding sources

This paper did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Conflict of Interest

None

Declaration of generative AI in scientific writing

The authors declare that they have not used artificial intelligence (AI)-tools for writing and editing the manuscript, and no images were manipulated using AI.

Author Contributions

RGN: Conceptualization, Investigation, Study design, Supervision, Formal analysis, Resources, Visualization, Validation; **ATP:** Data curation, Writing and Critical Editing of Draft, Data presentation; **AMB:** Writing-Original Draft, Review and Editing; **AAT:** Writing-Original Draft, Review and Editing; **SC:** Conceptualization, Supervision, **MRN:** Resources, Investigation, Data Collection, Data Curation and, Supervision.

Acknowledgements

None

References

- [1] Leong SP, Gershenwald JE, Soong SJ, Schadendorf D, Tarhini AA, Agarwala S, et al. Cutaneous melanoma: a model to study cancer metastasis. *J Surg Oncol* 2011;103(6):538–49. <https://doi.org/10.1002/jso.21816>.
- [2] Schmid-Wendtner MH, Baumert J, Schmidt M, Konz B, Hölzel D, Plewig G, et al. Late metastases of cutaneous melanoma: an analysis of 31 patients. *J Am Acad Dermatol* 2000;43(4):605–9. <https://doi.org/10.1067/mjd.2000.107234>.
- [3] Winnepenninckx V, De Vos R, Stas M, van den Oord JJ. New phenotypical and ultrastructural findings in spindle cell (desmoplastic/neurotropic) melanoma. *Appl Immunohistochem Mol Morphol* 2003;11(4):319–25. <https://doi.org/10.1097/00129039-200312000-00007>.
- [4] Díaz A, Valera A, Carrera C, Hakim S, Aguilera P, García A, et al. Pigmented spindle cell nevus: clues for differentiating it from spindle cell malignant melanoma. A comprehensive survey including clinicopathologic, immunohistochemical, and FISH studies. *Am J Surg Pathol* 2011;35(11):1733–42. <https://doi.org/10.1097/PAS.0b013e318229cf66>.
- [5] Dainichi T, Kobayashi C, Fujita S, Shiramizu K, Ishiko T, Kiryu H, et al. Interdigital amelanotic spindle-cell melanoma mimicking an inflammatory process due to dermatophytosis. *J Dermatol* 2007;34(10):716–9. <https://doi.org/10.1111/j.1346-8138.2007.00367.x>.
- [6] Jackson CR, Minca EC, Kapil JP, Smith SC, Billings SD. Superficial malignant peripheral nerve sheath tumor with overlying intradermal melanocytic nevus mimicking spindle cell melanoma. *J Cutan Pathol* 2016;43(12):1220–5. <https://doi.org/10.1111/cup.12834>.
- [7] Walia R, Jain D, Mathur SR, Iyer VK. Spindle cell melanoma: a comparison of the cytomorphological features with the epithelioid variant. *Acta Cytol* 2013;57(6):557–61. <https://doi.org/10.1159/000354405>.
- [8] Falconieri G, Bacchi CE, Luzar B. Cutaneous clear cell sarcoma: report of three cases of a potentially underestimated mimicker of spindle cell melanoma. *Am J Dermatopathol* 2012;34(6):619–25. <https://doi.org/10.1097/DAD.0b013e3182473190>.
- [9] Yeh I, Vemula SS, Mirza SA, McCalmont TH. Neurofibroma-like spindle cell melanoma: CD34 fingerprint and CGH for diagnosis. *Am J Dermatopathol* 2012;34(6):668–70. <https://doi.org/10.1097/DAD.0b013e318244819a>.
- [10] Xu Z, Shi P, Yibulayin F, Feng L, Zhang H, Wushou A. Spindle cell melanoma: incidence and survival, 1973–2017. *Oncol Lett* 2018;16(4):5091–9. <https://doi.org/10.3892/ol.2018.9247>.
- [11] Sundersingh S, Majhi U, Narayanaswamy K, Balasubramanian S. Primary spindle cell melanoma of the urinary bladder. *Indian J Pathol Microbiol* 2011;54(2):422–4. <https://doi.org/10.4103/0377-4929.81612>.
- [12] Bharat Bhaishajya Ratnakar kKhand 4, yoga No. 6971. New Delhi: B. Jain Publisher Pvt. Ltd.; 1999.
- [13] Rasyogasagar (RYS). Part II, Sr. No. 428. Varanashi. Krishandar Academy Publisher; 1998. p. 350.
- [14] Ratnavali Bhaishajya. Ch. 5-Jwaradhikar, shloka no. 1205-1207. Varanashi. Choukhambha Sanskrit Sansthan; 2001. p. 126.
- [15] Shastri KN. Sadanand sharma's rasataringini. New Delhi: Motilal Banarasidas Publications; 1979. p. 11.
- [16] MacDonald RS. The role of zinc in growth and cell proliferation. *J Nutr* 2000;130(5S Suppl):1500S. <https://doi.org/10.1093/jn/130.5.1500S>. 8S.
- [17] Sharma V, Sharma R, Gautam DS, Kuca K, Nepovimova E, Martins N. Role of Vacha (*Acorus calamus* Linn.) in neurological and metabolic disorders: evidence from ethnopharmacology, phytochemistry, pharmacology and clinical Study. *J Clin Med* 2020;9(4):1176. <https://doi.org/10.3390/jcm9041176>.
- [18] Tarasiuk A, Mosińska P, Fichna J. Triphala: current applications and new perspectives on the treatment of functional gastrointestinal disorders. *Chin Med* 2018;13:39. <https://doi.org/10.1186/s13020-018-0197-6>.
- [19] Peterson CT, Denniston K, Chopra D. Therapeutic uses of triphala in ayurvedic medicine. *J Alternative Compl Med* 2017;23(8):607–14. <https://doi.org/10.1089/acm.2017.0083>.
- [20] Sumitra M, Manikandan P, Gayathri VS, Mahendran P, Suguna L. Emblica officinalis exerts wound healing action through up-regulation of collagen and extracellular signal-regulated kinases (ERK1/2). *Wound Repair Regen* 2009;17(1):99–107. <https://doi.org/10.1111/j.1524-475X.2008.00446.x>.
- [21] Zia-Ul-Haq M, Riaz M, De Feo V. Ipomea hederacea Jacq.: a medicinal herb with promising health benefits. *Molecules* 2012;17(11):13132–45. <https://doi.org/10.3390/molecules171113132>.
- [22] Sharma R, Sharma S. Sahasra yoga. Ghrita prakarana. Reprint ed. New Delhi: Choukamba Sanskrit Pratishthana; 2012. p. 43.
- [23] Mishra SN, editor. Bhaishajya ratnavali of govinda das sen. Reprint ed. Varanasi: Chaukhambha Surabharati Prakashan; 2011. p. 882. Ch. 54, Ver. 228-231.