

EFFECT OF VIBHITAKADI VATAKA IN PANDU ROGA (IRON DEFICIENCY ANAEMIA)

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ABSTRACT

Pandu roga is one of the important diseases described in *Ayurvedic* classics under *Rasa Pradoshaja Vikara*, characterized predominantly by *Panduta* (pallor) of the skin and mucous membranes. *Pandu roga* develops due to the vitiation of *Pitta Dosha* associated with *Agnimandya*, leading to impaired digestion and *Ama* formation. This results in defective formation and inadequate nourishment of *Rasa* and *Rakta Dhatu*, resulting in the manifestation of *Pandu roga*. Clinically, the disease presents with *Panduta* (Pallor), *Daurbalya* (generalized weakness), *Shrama* (easy fatigability), *Aruchi* (loss of appetite), *Bhrama* (giddiness), *Shwasa* (dyspnea), *Hridspandana* (palpitations) etc.^[1] The diagnosis of *Pandu Roga* is established on the basis of a detailed evaluation of *Nidana*, *Dosha-Dushya Samurchana*, *Samprapti* and

characteristic clinical features described in the *Ayurvedic* texts, supported by hematological investigations for assessment of the severity of anaemia. In the contemporary era, *Pandu roga* is closely correlated with Anaemia especially Iron Deficiency Anaemia (IDA) because of the similarity in its clinical presentation. Ayurveda offers a comprehensive approach by emphasizing *Nidana Parivarjana*, *Deepana-Pachana*, *Shodhana*, *Shamana*, *Raktavardhaka* therapy, along with appropriate dietary and lifestyle modifications. *Vibhitakadi Vataka*, a classical formulation containing *Vibhitaki*, *Shunthi*, *Tila*, *Mandoora Bhasma*, and *Guda*, possesses *Tridoshashamaka* especially *Pitta Doshashamaka*, *Deepana*, *Pachana*, *Srotoshodhaka*, *Raktavardhaka*, *Balya* and *Dhatu poshana* properties. These attributes help restore *Agni*, improve *Rakta Dhatu* formation and alleviate the clinical manifestations of

Pandu Roga. Hence, *Vibhitakadi Vataka* may serve as an effective and holistic therapeutic option in the management of *Pandu roga* (Iron Deficiency Anaemia).

KEYWORDS: *Pandu Roga*, Iron Deficiency Anaemia, *Vibhitakadi Vataka*, *Agnimandya*, *Rakta Dhatu*.

INTRODUCTION

Health is considered the foundation of a productive and meaningful life. According to *Ayurveda*, maintenance of the equilibrium among *Dosha*, *Dhatu*, *Mala*, and *Agni* is essential for preserving health, whereas disturbance of this balance leads to disease. Among the disorders affecting *Rasa-Rakta Dhatu*, *Pandu Roga* occupies a prominent place because of its high prevalence and significant impact on quality of life.

The term *Pandu* denotes pallor or whitish- yellow discoloration of the body. Since *Panduta* (Pallor) is the cardinal clinical feature of the disease, it is designated as *Pandu roga*. *Pandu roga* is described in detail in the classical *Ayurvedic* texts, including its *Nidana*, *Samprapti*, *Lakshana*, *Bheda*, *Sadhya-Asadhyata* and *Chikitsa*. *Pandu Roga* is predominantly a *Pitta-pradhana* disorder, although the involvement of other *Doshas* is also recognized. Excessive intake of *Amla* (sour), *Lavana* (salty), *Kshara* (alkaline) foods, consumption of *Viruddha Ahara* (incompatible diet) and *Asatmya Ahara* (unsuitable or unwholesome food), *Ativyayama* (excessive physical exertion), *Chinta* (excessive worry) etc. lead to *Agnimandya*, resulting in *Ama* formation and impaired nourishment of *Rasa and Rakta Dhatu*. Consequently, patients develop pallor, fatigue, generalized weakness, dyspnea on exertion, palpitations, anorexia, and reduced exercise tolerance. These clinical manifestations closely resemble with Anaemia, which is characterized by reduced haemoglobin concentration in blood below the lower limit of the normal range for the age and sex of the individual. In adults, the lower extreme of the normal haemoglobin is taken as 13.0 g/dl for males and 12 g/dl for females.^[2] IDA is the most common nutritional deficiency disorder worldwide and remains a major public health concern, particularly among women of reproductive age, pregnant women, adolescents and young children because of increased iron requirements, menstrual blood loss, pregnancy and inadequate dietary intake. Although *Ayurveda* and modern medicine differ in their conceptual understanding of disease, both acknowledge that impaired blood formation results in reduced tissue oxygenation and systemic weakness. The *Ayurvedic* approach not only aims to improve haematological parameters but also emphasizes restoration of *Agni*, elimination of etiological factors, correction of *Dosha* imbalance,

nourishment of *Rakta Dhatu*, and improvement of overall physiological function. Among the various formulations described for the management of *Pandu Roga*, *Vibhitakadi Vataka*, mentioned in *Sushruta samhita uttar Tantra*, *Adhyaya 44*, is a classical preparation possessing *Tridoshashamaka* especially *Pitta Doshashamaka*, *Deepana*, *Pachana*, *Srotoshodhana*, *Raktavardhaka*, *Raktastambhana*, *Raktaprasadaka*, *Balya* and *Dhatuposhana* properties. These pharmacological actions help correct the underlying pathology of *Pandu Roga*. Therefore, the present review aims to highlight the therapeutic role of *Vibhitakadi Vataka* in the management of *Pandu Roga* (Iron Deficiency Anaemia).

MATERIAL AND METHOD

For this article literature review is done from *Charaka Samhita*, *Sushruta Samhita*, *Ashtanga Hridaya* and *Dravyaguna-Vigyana* by *Acharya Priyavrata Sharma* along with relevant theses, published research articles and modern medical literature.

NIDANA

Nidana (etiological factors) of *Pandu Roga* are mainly related to improper diet, unhealthy lifestyle, and psychological factors that vitiate *Pitta Dosha*, impair *Agni*, and affect *Rasa* and *Rakta Dhatu*.

1. Aharaja Nidana (Dietary factors)

- ❖ Excessive intake of *Amla* (sour), *Lavana* (salty), *Kshara* (alkaline) foods
- ❖ Consumption of *Viruddha Ahara* (incompatible diet) and *Asatmya Ahara* (unsuitable or unwholesome food)
- ❖ frequent consumption of *Nispava* (beans), *Masha* (black gram), *Pinyaka* (oil-cake residue), *Tila* (sesame seeds), and *Tila-taila* (sesame oil).
- ❖ Intake of *Atiushna* (Excessively hot), *Atitikshna* (very pungent) ahara
- ❖ *Mrid-bhakshana* (eating mud/clay)

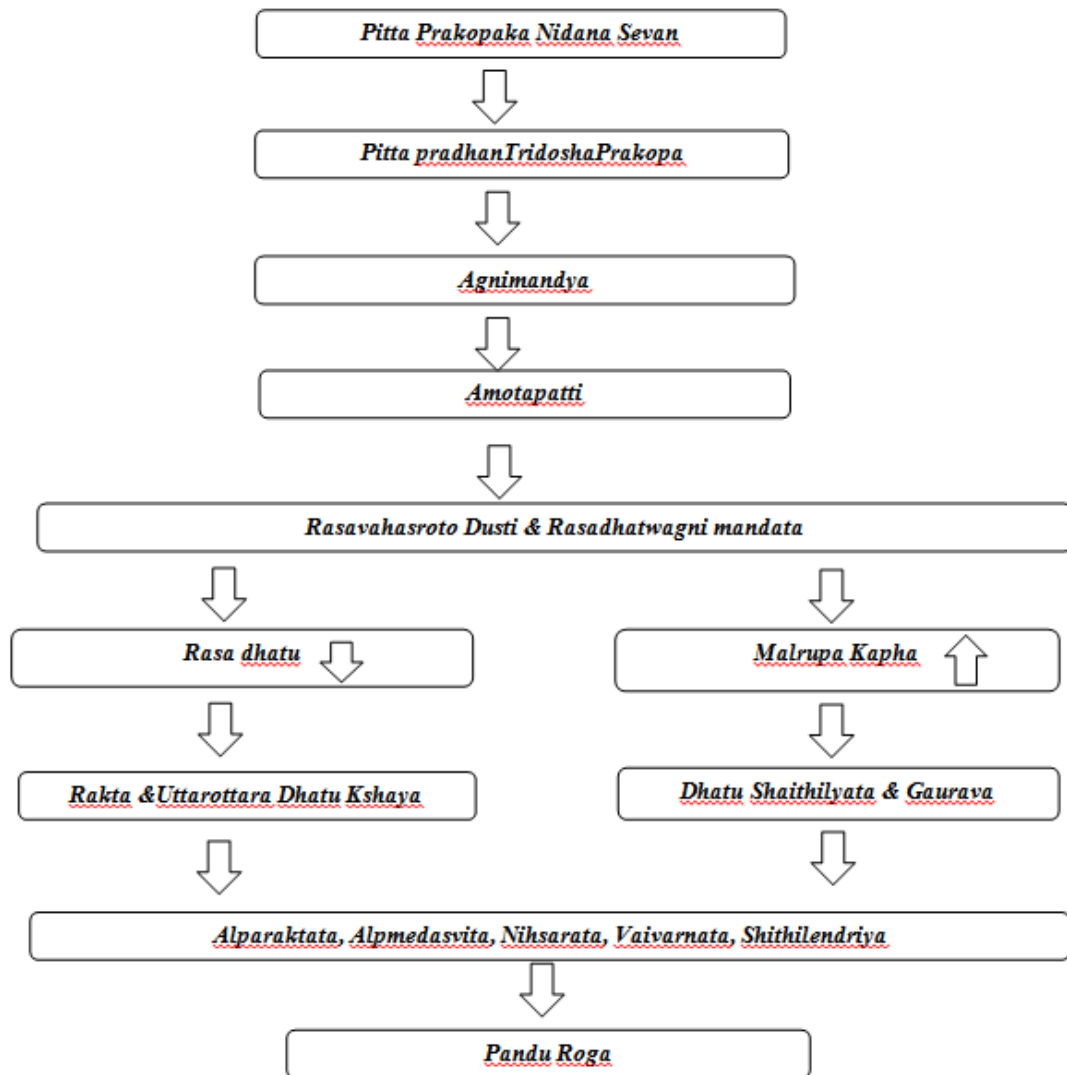
2. Viharaja Nidana (Lifestyle factors)

- ❖ *Ativyayama* (excessive physical exertion)
- ❖ *Divaswapna* (daytime sleep)
- ❖ *Atimathuna* (excessive sexual activity)
- ❖ *Pratikarma-vaishamya* (improper therapeutic procedure)
- ❖ *Vegadharana* (Suppression of natural urges)

3. Manasika Nidana (Psychological factors)

- ❖ *Kama* (excessive sensual desire)
- ❖ *Chinta* (excessive worry)
- ❖ *Bhaya* (fear)
- ❖ *Krodha* (anger)
- ❖ *Shoka* (grief)

SAMPRAPTI OF PANDU ROGA



CONTENT OF VIBHITAKADI VATAKA^[3]

विभीतकायोमलनागराणांचूर्णतिलानाञ्चगुडश्चमुख्यः।

तक्रानुपानोवटकःप्रयुक्तःक्षिणोतिघोरानपिपाण्डुरोगान॥(सु.उ.त. 44/ 27)

1. *Vibhitaki* (*Terminalia bellirica*), Combretaceae
2. *Shunthi* (*Zingiber officinale*), Zingiberaceae
3. *Tila* (*Sesamum indicum*), Pedaliaceae
4. *Mandoora Bhasma*
5. *Guda* (*Saccharum officinarum*), Gramineae

PHARMACOLOGICAL PROPERTIES OF DRUG^[4]

Drug	Rasa	Guna	Virya	Vipaka	Doshakarma	Therapeutic uses	Pharmacological Action
<i>Vibhitaki</i>	<i>Kashaya</i>	<i>Laghu, Ruksha</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Tridosahara mainly Kapha-shamaka</i>	<i>Deepana, Rakta-sathamabhaka, Krimighana</i>	Antioxidant, Anti-inflammatory, Hepatoprotective, Wound healing activity, Immunomodulator, Antimicrobial
<i>Shunthi</i>	<i>Katu</i>	<i>Laghu Snigdha</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Kapha Vatashamaka</i>	<i>Deepana, Rochana, Raktashodhaka</i>	Antioxidant, Anti-inflammatory, Appetite stimulant, Bioavailability enhancer
<i>Kala tila</i>	<i>Madhura</i>	<i>Guru snigdha</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Vatahara Kapha-Pitta Prakopaka</i>	<i>Deepana</i>	Haematogenic, Antioxidant, Wound healing activity
<i>Mandura Bhasma</i>	<i>Kashaya</i>	<i>Sheeta</i>	<i>Sheeta</i>	<i>Katu</i>	<i>Pittashamaka</i>	<i>Rochana Deepan Raktavardhana</i>	Haematogenic, Hepatoprotective, Anti-inflammatory
<i>Guda</i>	<i>Madhura</i>	<i>Snigdha</i>	<i>Natisheeta</i>	<i>Madhura</i>	<i>Vatanashaka Pittanashaka</i>	<i>Raktashodhana Balavardhana</i>	Haematogenic, Improves Metabolism
<i>Takra</i>	<i>Amla, Madhura</i>	<i>Laghu Ruksha</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Kapha-Vata-hara</i>	<i>Deepana</i>	Improves digestion

VIBHITAKI

It possesses *Tridosahara, Deepana, Krimighna, Raktastambhana, Dhaturvardhana* property.

Chemical composition- Gallic acid, Ellagic acid, Chebulagic acid, Beta-Sitosterol, Flavonoids, Lignans etc.

Pharmacological activity^[5]

- ❖ *Vibhitaki* possesses potent antioxidant activity due to its rich phenolic constituents. It scavenges reactive oxygen species (ROS), reduces oxidative stress, and protects cells from free radical-induced damage.
- ❖ *Vibhitaki* exhibits significant hepatoprotective activity by protecting hepatocytes against toxic injury, reducing oxidative stress biomarkers, and improving liver function.
- ❖ *Vibhitaki* has demonstrated significant wound healing activity by enhancing fibroblast function, promoting the production of glycosaminoglycan and collagen, and accelerating wound contraction and epithelialization. These actions improve tissue repair and regeneration.

SHUNTHI

It possesses *Kapha-Vatashamaka, Rochana, Deepana, Hridya. AmaPachana, Raktashodhak* property.

Chemical composition

Iron, Phosphorus, Curcumene, Zingiberenes, Zingiberol, Gingerol, Ascorbic acid, Protein.

Pharmacological activity

- ❖ Ginger has been reported to improve gastrointestinal absorption of iron, thereby increasing the effectiveness of oral iron therapy and Bioactive compounds of ginger may support erythropoiesis and help improve haemoglobin levels.^[6]
- ❖ Ginger can be regarded as the storehouse of antioxidants. It has an extraordinary property of scavenging reactive oxygen species (ROS), free radicals, peroxides, and various other damaging oxidants. The active ingredients like gingerols, shogaols, zingerone, and so forth present in ginger exhibit antioxidant activity. It inhibits an enzyme, namely, xanthine oxidase, which is mainly involved in the generation of reactive oxygen species.
- ❖ Ginger and its constituents show a vital role in ulcer prevention via increasing mucin secretion.
- ❖ It acts as digestive stimulant and sialagogue. It stimulates bile acid production in the liver and its secretion in the bile duct. Also, it significantly provokes the activity of various digestive enzymes such as pancreatic lipase, amylase and proteases like trypsin, chymotrypsin and also intestinal enzymes.
- ❖ Methanolic extract of ginger rhizome exhibited dose-dependent positive inotropic activity.^[7]

TILA

It possesses *Vatashamaka, Deepana, Raktastambhana, Balya, Tvacya* properties.

Chemical composition

Seasmin, Sesamolin, Sesamol, Beta-sitosterol, Protein, Minerals (Ca, Fe, Mg, Zn), Vitamin B, Vitamin E-isoforms.

Pharmacological activity

- ❖ *Tila* is a rich source of iron and hence is prescribed for patients suffering from anaemia.
- ❖ Lignans (sesamol, sesamin) and tocopherols present in *Tila* exhibit antioxidant activity.^[8]
- ❖ Extracted lignans lower inflammatory indicators (such as COX-2 regulation and cytokine suppression), thereby exhibiting significant anti-inflammatory activity.
- ❖ Hepatoprotective effects through anti-inflammatory and antioxidant pathways.
- ❖ *Tila* show wound healing activity because of its lubricating, anti-inflammatory and mildly antimicrobial qualities.^[9]

MANDURA BHASMA

It possesses *Pittashamaka, Rochana, Deepana, RaktaVardhana, yakrituttejaka* properties.

Chemical composition - Potent source of iron.

Pharmacological activity

- ❖ *Mandura Bhasma* serves as a bioavailable source of iron, promoting haemoglobin synthesis and erythropoiesis (red blood cell formation).^[10]
- ❖ *Mandura Bhasma* maintained normal villous structure and intestinal enzyme activity, suggest that it may serve as a safer and effective alternative hematinic, especially where gastrointestinal tolerance is a concern.^[12]
- ❖ *Mandura Bhasma* is traditionally considered *Deepana-Pachana* (enhances digestive and metabolic functions), thereby improving nutrient assimilation and supporting correction of nutritional anaemia.^[13]
- ❖ The Ayurvedic processing (*Sodhana* and *Maraṇa*) converts raw iron into nano-sized iron oxide particles, which may facilitate absorption and assimilation of *mandura bhasma* into the body.^[11]

GUDA^[14]

It possesses *Vata-Pittashamaka, Kaphakaraka, Raktashodhana, Balavardhana* properties.

Chemical composition

Glucose, fructose, Sucrose, Proteins, Lipids, Vitamin (B-complex and Folic acid) and Minerals (Fe, Ca, P, Mg, K).

Pharmacological activity

- ❖ Jaggery contributes to the prevention of anaemia because it contains a significant amount of iron and folate. Additionally, jaggery powder provides quick energy, preventing body weakness and fatigue. Jaggery improves the body's ability to absorb iron when consumed along with meals that are high in vitamin C.
- ❖ Jaggery promotes to release of enzymes used for digestion, accelerating the process of digestion. Proper digestion improves in controlling bowel movements and protects against problems including gas, stomach parasites as well as constipation. This is very helpful to preserve the digestive system's function smoothly.
- ❖ Minerals and antioxidants namely Se and Zn, which are present within jaggery, contribute to reducing the risk of free radical damage. Additionally, these antioxidants and minerals support the body's improved resistance to various infection.
- ❖ Jaggery helps to cleanse the blood and leave the body healthy when consumed regularly.

ANUPANA

TAKRA^[15]

It possesses *Vata-Kaphashamaka, Deepana, Hridya* properties.

Chemical composition

Protein, Lactose, Lactic acid, Minerals (Calcium, Phosphorus, Potassium, Magnesium), Vitamins (especially riboflavin and vitamin B12), Probiotic bacteria.

Pharmacological activity

- ❖ Buttermilk has probiotic qualities that help to regulate the functions of gastrointestinal system as the probiotics introduce healthy bacteria into body, particularly into the digestive tract, where bacteria are essential for the breakdown and absorption of foods and their nutrients.

- ❖ Ayurveda has given prime importance to *Takra* due to its nutritional properties and because of which, it has been advocated both as diet as well as medicine. It is considered as a part of daily and a balanced diet which is wholesome for maintaining the good health.
- ❖ In Ayurveda, *Takra* is indicated in various disorders and mainly in gastrointestinal disorders as it facilitates proper digestion, absorption process and maintains the proper metabolism. Buttermilk is said to possess the properties of probiotics that help in the growth of good bacteria and reduction of bad bacteria, thereby alleviating the disorders of gastrointestinal system.

DISCUSSION

Vibhitakadi Vataka is a classical Ayurvedic formulation indicated in the management of *Pandu Roga*. The ingredients of the formulation, namely *Vibhitaki*, *Shunthi*, *Tila*, *Guda*, and *Mandoora Bhasma*, collectively possess *Tridoshashamaka* especially *pittadoshashamaka*, *Deepana*, *Pachana*, *Srotoshodhana*, *Raktavardhana*, *Raktastambhana*, *Raktashodhana*, *Balya* and *Dhatuposhana* properties. These properties help in correcting *Dosha vaishamyata*, *Agnimandya*, digesting *Ama*, improving *Rasa* and *Rakta Dhatu* formation, and relieving the clinical manifestations of *Pandu Roga*. From a modern perspective, the formulation exhibits hematinic, digestive stimulant, hepatoprotective, anti-inflammatory, antioxidant activities which contribute to the improvement of iron deficiency anaemia.

According to *Rasa Panchaka*

Most of the ingredients of *Vibhitakadi Vataka* possess *Kashaya*, *Madhura*, and *Katu Rasa*, *Laghu-Snigdha Guna*, *Ushna Virya* (predominantly due to *Shunthi*), and *Madhura Vipaka*.

- *Vibhitaki*, owing to its *Kashaya Rasa*, *Madhura Vipaka*, and *Tridoshahara* properties, pacifies *Pitta* and *Kapha*, performs *Srotoshodhana*, and possesses *Raktastambhana* and *Dhatuvardhaka* actions. These properties improve tissue nutrition, support *Dhatu Poshana*, and help alleviate the clinical manifestations of *Pandu roga*.
- *Shunthi*, because of its *Ushna Virya* and *Katu Rasa*, acts as *Deepana* and *Pachana*, corrects *Jatharagni*, digests *Ama*, and enhances the absorption and assimilation of nutrients, including iron.
- *Mandoora Bhasma* acts as *Raktavardhaka*, promoting healthy erythropoiesis and improving haemoglobin concentration.

- *Tila*, because of its *Madhura Rasa*, *Guru-Snigdha Guna*, and *Madhura Vipaka*, acts as *Balya*, *Brimhana*, and *Dhatuposhaka*. These properties nourish *Rasa* and *Rakta Dhatu*, improve tissue strength, and help alleviate *Daurbalya* and *Shrama* associated with *Pandu Roga*.
- *Guda*, owing to its *Madhura Rasa*, *Guru-Snigdha Guna*, and *Madhura Vipaka*, acts as *Balya* and *Brimhana*, providing nourishment to the body. Its natural iron content and *Raktavardhaka* property support hemoglobin synthesis and help improve the clinical features of *Pandu Roga*.

According to Dosha Karma

Tridosahara action of the formulation helps pacify all the three *Doshas*, with predominant correction of *Pitta Dushti*, which is the principal factor in the pathogenesis of *Pandu Roga*.

- The *Deepana* and *Pachana* properties correct *Agnimandya*, digest *Ama*, and restore normal digestive and metabolic functions.
- *Srotoshodhana* action removes obstruction in *Rasavaha* and *Raktavaha Srotas*, facilitating proper circulation and nourishment of tissues.
- Restoration of *Samyaka Jatharagni* results in the formation of *Prakrita Ahara Rasa*, which nourishes *Rasa Dhatu* and subsequently promotes healthy *Rakta Dhatu* formation.
- *Samyaka Dhatvagni* ensures proper conversion of *Rasa Dhatu* into *Rakta Dhatu*, thereby increasing hemoglobin levels and correcting *Panduta*.
- *Raktavardhaka* property of *Mandura Bhasma* promotes healthy *Rakta Dhatu* formation, increases haemoglobin levels, and is traditionally beneficial in *Yakrit* (liver) and *Pliha* (spleen) disorders, thereby supporting normal hematopoiesis and iron metabolism.
- *Balya* and *Dhatuposhana* properties improve strength, reduce *Daurbalya* and *Shrama*, and enhance the overall nutritional status of the patient.
- The combined action of the formulation improves *Rasa* and *Rakta Dhatu*, corrects iron deficiency, increases hemoglobin concentration, and alleviates the classical symptom *Pandu Roga*.

CONCLUSION

In Ayurveda, *Pandu roga* has been described elaborately with respect to its *Nidana*, *Lakshana*, *Samprapti*, *Chikitsa*, and *Upadrava*. Various classical Ayurvedic formulations have been described by the *Acharyas* for the management of *Pandu roga*, among which *Vibhitakadi Vataka* is one such formulation. Based on the Ayurvedic principles and the

pharmacological activities of its individual ingredients, *Vibhitakadi Vataka* can be considered a valuable classical formulation for the management of *Pandu roga*. Such time-tested *Ayurvedic* formulations have the potential to provide safe and effective management and deserve wider scientific recognition through evidence-based evaluation.

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