

Ayurvedic Management of *Avabahuka* (Frozen Shoulder) – A Systemic Review

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ABSTRACT

Avabahuka, commonly known as frozen shoulder or adhesive capsulitis, is a musculoskeletal disorder, which is primarily attributed to the vitiation of *Vata Dosha*, leading to pain, stiffness, and limited mobility. The prevalence rate of frozen shoulder is 2–5% in the general population, with a higher incidence in over the age of 40 years. Our *Acharya's* described the various treatment approaches in *Samhitas*, which pacify *Vata Dosha* and alleviate symptoms of *Avabahuka*. This review article summarizes research on *Avabahuka* (frozen shoulder) management through Ayurvedic interventions. A systematic search was conducted across multiple databases, including PubMed, Ayush Research Portal, J-Gate, and Shodhganga, for relevant articles published between January 2000 and December 2024. The search focused on studies evaluating the efficacy of Ayurvedic management for *Avabahuka*. Included studies comprised randomized controlled trials (RCTs), non-RCTs, before-and-after studies, and single-group clinical studies assessing various Ayurvedic modalities. Despite many studies remaining unpublished (gray literature), evidence-based medicine is crucial for optimal patient care. We reviewed 241 studies (January 2000–December 2024) from various search engines. Among these, 85 studies involved clinical interventions. This review highlights the efficacy of various Ayurvedic interventions in managing *Avabahuka* by alleviating pain, stiffness, and restoring mobility, and emphasizes the need for further evidence-based research.

Keywords: *Apabahuka*, *Avabahuka*, Frozen shoulder

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INTRODUCTION

In this era of rapid technological advancement, *Avabahuka* is one such disease, among many diseases which may not be life-threatening but can significantly hamper the daily activities. *Avabahuka* is correlated with frozen shoulder also known as adhesive capsulitis in modern medical literature. It is an idiopathic painful condition of shoulder joint which is more prevalent in females in their fifties.^[1] This condition is characterized by inflammation and adhesion in the shoulder joint capsule, resulting in decreased range of motion and painful movements. Epidemiological studies showed that the estimated prevalence rate of frozen shoulder is 2–5% in the general population, with a higher incidence in individuals over 40 years old.^[2]

Avabahuka is condition primarily affecting *Amsa sandhi* (shoulder joint) attributed to the *Vata dosha* imbalance. *Avabahuka* is described by all the *Acharya* under the context of *Vataja vyadhi*. *Acharya Sushruta* has mentioned that, in *Ansa pradesha*, the morbid *Vata dosha* leads to *Shosha* in the *Ansa bandhan* and produce *Sira aakunchan* which is known as *Avabahuka*.^[3] *Avabahuka* is challenging to treat, but Ayurvedic interventions focus on balancing *Vata Dosha* to improve quality of life. This article reviews clinical studies and therapeutic interventions for *Avabahuka* (Frozen shoulder) in *Ayurveda*.

Due to accessibility limitations, comprehensive thesis work conducted at various research institutes, unpublished data, and gray literature from postgraduate institutes were excluded. A systematic search was conducted using multiple search engines between January 2000 and December 2024.

MATERIALS AND METHODS

A comprehensive review was conducted of classical Ayurvedic texts, including *Charaka Samhita*, *Sushruta Samhita*, *Astanga Hridaya*, *Chakradatta*, *Yoga Ratnakara*, *Bhaishajya Ratnavali*, and

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Sharangdhar Samhita, to analyze *Avabahuka* and its management. A systematic search was performed across multiple databases, including Google Scholar, Ayush Research Portal, J-Gate, DHARA, AYU, PubMed, Shodhganga, JAIM, Elsevier, and NIH, using keywords such as "*Avabahuka*," "*Apabahuka*," and "Frozen shoulder" [Table 1]. Boolean operators (AND, OR, and NOT) were employed to refine the search, and filters were applied to include only clinical trials and free full-text articles. This systematic review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses statement. Relevant research papers specifically addressing *Avabahuka* management were then reviewed in detail.

Selection Criteria

The following criteria were included in this review: (1) Studies published in English language; (2) Patient with classical symptoms of *Avabahuka*, that is, *Bahupraspandanahar* (restricted movement of shoulder joint), *Shoola* (pain), and *Stanbdhata* (stiffness) in *Amsa Pradesha* (shoulder region). The following articles were excluded: (1) Lacking the search terms in titles and abstracts; (2) studies with incomplete data; and (3) reviews or systemic reviews.

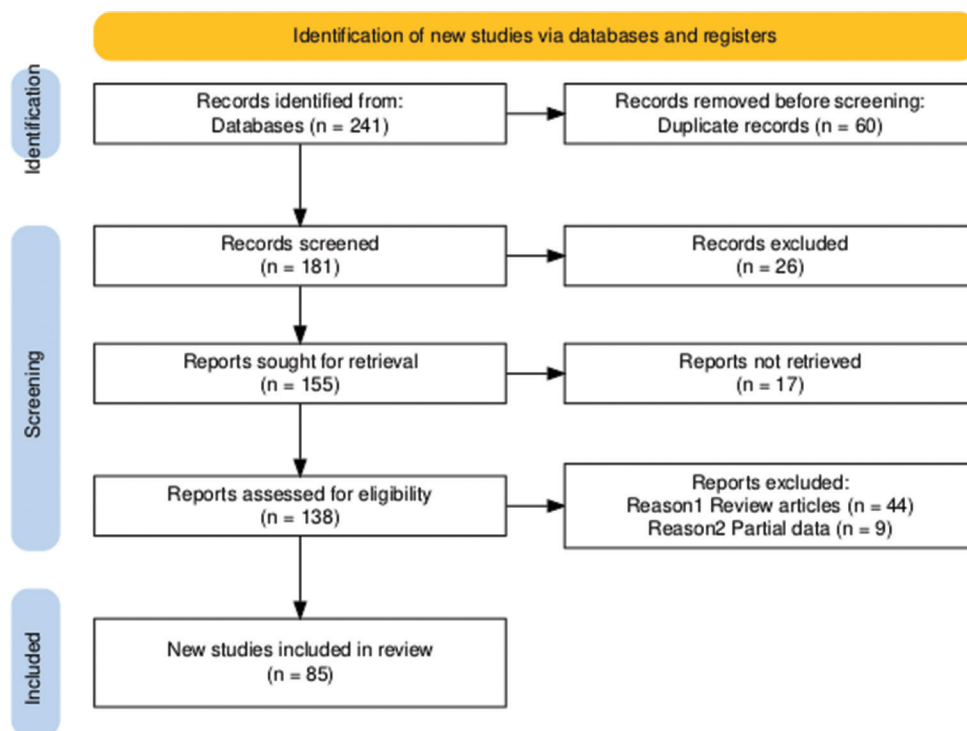


Figure 1: Preferred Reporting Items for Systematic Reviews and Meta-Analyses flow diagram

Table 1: Available research article by keywords on each given database

Keywords	Google scholar	Ayush Research Portal	J-Gate	DHARA	AYU	PubMed	Shodhganga	JAIM	Elsevier	NIH
Avabahuka	65	14	78	4	3	3	4	0	0	2
Apabahuka	29	7	21	2	1	1	1	2	0	4
Total	94	21	99	6	4	4	5	2	0	6

Observation

A comprehensive search of online databases revealed a substantial number of research studies on *Avabahuka* or Frozen Shoulder, a condition prevalent among older adults that has garnered significant attention from researchers. Our search yielded 85 non-duplicate research works published on digital platforms. After applying inclusion criteria, we selected clinical studies for this review article, as depicted in Figure 1.

Our analysis revealed that many research trials employed evidence-based medicine approaches, including meta-analysis, risk analysis, and prognosis analysis. These studies examined various modalities and interventions, including *Shodhana Chikitsa*, herbal or herbomineral Ayurvedic medicines [Table 2]. We identified 43 case reports [Table 3] and one case series [Table 4] on diverse drug formulations and administration routes provide valuable insights into the safe utilization of various therapeutic approaches for managing the same disease. Twenty-eight comparative studies between two or three groups enabled the evaluation of different treatments and their effects on the same disease [Table 5]. Nine single-arm studies [Table 6] and four pilot studies [Table 7] with large patient samples enhance our understanding of the disease, drug action, adverse drug reactions, and prognosis.

The studies demonstrated varying effects of different interventions on *Avabahuka* [Table 8]. We found that the maximum

Table 2: Number of articles as per study design

S. No.	Study design	Total article
1	Case report/case study	43
2	Case series	01
3	Comparative clinical study	28
4	Single arm clinical study	09
5	Pilot study	04
Total		85

studies are done on *Nasya karma*, while 15 studies explored the combined effects of *Nasya chikitsa* and other interventions.

All studies demonstrated varying effects on both subjective and objective parameters, as outlined in the results section.

DISCUSSION

This review employed a comprehensive and systematic data mining approach, utilizing multiple search engines. Evidence-based medicine provides a structural framework for achieving optimal outcomes and ensuring patient safety. This review analyzed various studies, highlighting different interventions for treating *Avabahuka* (Frozen shoulder).

Analyzed articles identified pain, stiffness, and decreased range of motion in the shoulder joint as primary characteristics of *Avabahuka*. These symptoms were assessed using standardized

Table 3: Case report/case study

S. No.	Authors	Title	Methodology	Results
1	Krishnaprabha et al., 2016 ^[4]	A case study on the ayurvedic management of <i>Apabahuka</i> with <i>Karpasasthyadi Taila Nasya</i> and physiotherapy.	Intervention: <i>Nasya</i> with <i>karpasasthyadi taila</i> and physiotherapy Matra: 8 bindu Duration: 16 days Follow-up: weekly	Patient got relief from pain and stiffness and marked improvement in the range of movements (ROM) in the affected hand without any complication.
2	Kumari and Laxmikant, 2017 ^[5]	Ayurvedic approach in the management of <i>Avabahuka</i> (Adhesive Capsulitis Stage 2) in a diabetic patient with <i>Panchatikta Prasratika Basti</i> – A case report.	Intervention: <i>Kaala basti</i> (<i>Panchatikta prasratika basti</i> and <i>Anuvasana basthi with Moorchita ghrita</i>) Matra: <i>Anuvasana basti</i> – 90 mL Duration: 15 days Follow-up: 15 days	Overall, treatment showed 90% of improvement observed in pain and stiffness and 100% improvement observed in restricted movement.
3	Nirmal et al., 2017 ^[6]	Management Of <i>Avabahuka</i> (Frozen shoulder) with <i>Abhyanga Swedana</i> , <i>Pratimarsha Nasya</i> and Ayurveda Medicines: A case study.	Intervention: <i>Abhyanga</i> with <i>Dashmula taila</i> , <i>Swedana</i> with <i>Dashmula kwath</i> , <i>Pratimarsha Nasya</i> with <i>Anu-taila</i> . Matra: 2 drops Duration: 15 days Follow-up: 15 days	Patient had complete relief in pain and stiffness in shoulder joint. There was full range of shoulder movement.
4	Rao, 2017 ^[7]	<i>Agnikarma</i> in the management of <i>Avabahuka</i> (frozen shoulder).	Intervention: <i>Agnikarma</i> Sittings: 3 Interval: 7 days Follow-up: 1 month	Result of this study shows that after <i>Agni karma</i> , there is relief of signs and symptoms of frozen shoulder.
5	Deshpande et al., 2018 ^[8]	Effect of <i>Karpasasthyadi Taila Nasya</i> and <i>Trayodashanga Guggulu</i> in <i>Apabahuka</i> – A case study.	Intervention: <i>Nasyakarma</i> with <i>Karpasasthyadi Taila</i> and <i>Trayodashanga Guggulu</i> as <i>Shamanaushadhi</i> Matra: 8 bindu Duration: <i>Nasya karma</i> for 7 days and after that <i>trayodashanga guggulu</i> for 30 days Follow-up: weekly	Patients got tremendous relief from pain and stiffness and marked improvement in the range of movements (ROM) in the affected hand without any untoward effect.
6	Kamdi et al., 2019 ^[9]	Management of frozen shoulder by <i>Suchivedha</i> with <i>Agnikarma</i> (Therapeutic Cauterization): A case study	Intervention: <i>Suchivedha</i> with <i>Agnikarma</i> Needle no.- 26 Oral medicine: <i>Shatavari+Ashwagandha Churna</i> Dose: 5 gm/day with milk for 1 week Duration: 7 days	Patient got 50% relief in reducing pain.
7	Baswraj et al., 2019 ^[10]	<i>Avabahuka</i> : A case study	Intervention: <i>Panchakarma</i> (<i>Snehana</i> , <i>Nadi sweda</i> and <i>Patrapottali sweda</i>) and <i>Shamana Chikitsa</i> (<i>Punarnavashtak kwath</i> 80 ml BD and Tab. Ashtarthro 250 mg BD) Duration: 15 days	Patient got complete relief in pain and stiffness. Moderate improvement in ROM.
8	Sharma et al., 2020 ^[11]	Management of <i>Avabahuka</i> (Frozen Shoulder) with Ayurveda therapeutic regimen: A case study.	Intervention: <i>Abhyanga</i> with <i>Balataila</i> , <i>Sarvanga Swedana</i> with <i>Bashpasweda</i> , <i>Patrapinda Sweda</i> with <i>Nirgundipatra</i> , <i>Pratimarsha Nasya</i> with <i>Anu Taila</i> Oral ayurvedic medicine: <i>Mahayogaraja Guggulu</i> and <i>Maharasnadi kwath</i> Interval: 15 days Duration: 60 days Follow-up: 15 days	The patient had marked relief in pain and stiffness in the right shoulder joint. There was a full range of shoulder movement.

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Table 3: (Continued)

S. No.	Authors	Title	Methodology	Results
9	Satvi et al., 2020 ^[12]	Management of frozen shoulder (Avabahuka) By Agnikarma with Chitraka Moola (Plumbago zeylanica) – A case study.	Intervention: Agnikarma with chitraka moola Duration: 3 sitting Interval: 7 days	Result of this study showed that Agni karma there is relief of signs and symptoms of frozen shoulder. Local tenderness and stiffness are decreased markedly
10	Shinde et al., 2020 ^[13]	A case study of Agnikarma in the management of Avabahuka with special reference to frozen shoulder.	Intervention: Agnikarma with Panchadhatu shalaka Duration: twice in 7 days Sittings: 3	Result of this study showed that there is significant reduction in pain, there is no tenderness at shoulder joint with improvement in range of movement.
11	Kapadiya et al., 2021 ^[14]	Agnikarma with adjuvant drug in the management of frozen shoulder (Avabahuka) – A case report.	Intervention: Agnikarma by Panchadhatu Shalaka Total sitting: 4 Interval: 7 days Duration: 28 days Follow-up: weekly	There was complete pain less abduction and flexion achieved while internal rotation did not completely achieve after the 28 th day of treatment.
12	Gadve and Urhe, 2021 ^[15]	A clinical case study of Agnikarma with Panchdhatu Shalaka in Avabahuk WSR to frozen shoulder.	Intervention: Agnikarma by Panchadhatu Shalaka Sitting: 3 Interval: 7 days	Result of the case study showed better result in the symptoms, especially Stabhadhata (stiffness), Ruka (pain), Spandana (throbbing pain), and Gaurava (heaviness in shoulder joints).
13	Biswas, 2021 ^[16]	Effect of Nasya Karma in the management of Avabahuka – A case study.	Intervention: Nasya karma with Anu Tailam Matra: 8 drops Duration: 15 days Follow-up: 15 days	Result of this study showed that marked relief of the symptoms such as pain and stiffness. Hence, Nasya karma significantly effective and clinically safe
14	Iddalagimath and Hosamani, 2021 ^[17]	A case study on the effect of Jambheera Pinda Sweda and Mahamasha Taila Nasya in the Management of Avabahuka W. S. R. Frozen Shoulder.	Intervention: Jambheera Pinda Sweda and Nasya with Mahamasha Taila Matra: 8 drops Duration: 10 days Follow-up: 7 days	Result of this study showed that significant reduction in the pain, stiffness of the shoulder joint and the range of movement of the shoulder joint was improved.
15	Sharma et al., 2021 ^[18]	Evaluation of Marma point stimulation in Avabahuka with respect to periartthritis shoulder.	Intervention: Stimulation of Marma points Duration: 8 weeks Follow-up: 14 days	The effect of Marma Chikitsa was shown from the first sitting and by the end of eight sittings, the patient has got about 90% to 95% of relief.
16	Sonekar et al., 2021 ^[19]	To evaluate the effect of Agnikarma in the management of frozen shoulder (Avabahuk) – A case study	Intervention: Agnikarma with Panchakola shalaka Sittings: 1 Follow-up: 3 months	Result of this study showed mild improvement in ROM of shoulder.
17	Kumar et al., 2022 ^[20]	The role of Agnikarma in management of Avabahuka: A case report.	Intervention: Agnikarma with tamra shalaka Sittings: 5 Interval: 7 days Follow-up: 1 month	Result of this study showed that complete relief in the symptoms of Avabahuka.
18	Joshi and Bahatkar, 2022 ^[21]	Role of Upanaha Sweda in the management of Avabahuka – A case study.	Intervention: Upanaha sweda with vata-kaphahara Dravya Bandhan kala: 12 hours Duration: 14 days	Upanaha Sweda proves very beneficial in reducing pain, stiffness, and increase restricted movements of Ansa Sandhi.
19	Raikwar et al., 2022 ^[22]	Management Of Avabahuka (Frozen Shoulder) by Marma Chikitsa – A case study.	Intervention: Pressure was applied on Marma sites Frequency: Twice a day. Duration: 15 days Follow-up: 7 days	Results of this study showed complete and pain free movement of shoulder joint within 15 days of Marma Chikitsa.
20	Roy, 2022 ^[23]	Effect of Jambira Pinda Sweda in the Management of Avabahuka.	Intervention: Abhangya by Tila taila, Swedana by Jambira Pinda Sweda. Duration: 15 days	Patient was relieved from the symptoms of Avabahuka by the Jambira Pinda Sweda.

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Table 3: (Continued)

S. No.	Authors	Title	Methodology	Results
21	Patel and Patel, 2023 ^[24]	Effect of <i>Nasapana</i> in the management of <i>Avabahuka</i> WSR to frozen shoulder: A case study.	Intervention: <i>Nasapana</i> with <i>Balamula kwatha</i> (with <i>hingu</i> and <i>saindava lavana</i>) Dose: 24 mL Route of administration: through nostrils Duration: 7 days Follow-up: 15 days	Treatment had shown clinically significant results in reducing symptoms, specially stiffness of shoulder joint and patient do her daily activities with ease and sound sleep.
22	Kapadiya and Dudhamal, 2022 ^[25]	Management of <i>Avabahuka</i> (stage I primary frozen shoulder) through Wet cupping therapy: A single case report.	Intervention: Cupping with <i>shringa yantra</i> Interval: 7 days Sittings: 3 Duration: 21 days Follow-up: after each sitting	Result of this study showed that primary frozen shoulder can be successfully managed with wet cupping therapy.
23	Atri and Wadkar, 2022 ^[26]	Effect of multimodality Ayurveda treatment in <i>Avabahuk</i> w.s.r. to frozen shoulder – A case study	Intervention: <i>Snehana</i> , <i>Jambeera Pinda Sweda</i> , <i>Nasya</i> with <i>Karpasasthyadi Taila</i> and <i>Gandusha</i> Matra: 8 drops Duration: 7 days Follow-up: 14 days	Significant relief in the symptoms was shown after the treatment.
24	Yadav <i>et al.</i> , 2023 ^[20]	A case report role of <i>Agnikarma</i> on <i>Avabahuka</i> Management.	Intervention: <i>Agnikarma</i> with gold made <i>shalaka</i> Sittings: 6 Interval: weekly Follow-up: 2 months	Results of this study showed that discomfort and stiffness of shoulder region is decreased after five <i>Agnikarma</i> sessions, and the range of motion also improved.
25	Yadav <i>et al.</i> , 2023 ^[27]	An observational study on <i>Agnikarma</i> in management of <i>Avabahuka</i> : A case report.	Intervention: <i>Agnikarma</i> with gold made <i>shalaka</i> Sittings: 6 Interval: weekly Follow-up: 2 months	Results of this study showed that discomfort and stiffness of shoulder region is decreased after five <i>Agnikarma</i> sessions, and the range of motion also improved.
26	Kumari <i>et al.</i> , 2023 ^[28]	Ayurvedic <i>Panchakarma</i> Management of <i>Avabahuka</i> – A case report.	Intervention: <i>Snehana</i> with <i>sahacharadi taila</i> and <i>Patra Pottali Swedana</i> along with oral Ayurvedic <i>Aushadhi</i> Duration: for 7 days Follow-up: After 14 days	Results of this study showed that <i>panchakarma</i> along with <i>shaman chikitsa</i> give better management for <i>Avabahuka</i> .
27	Yadav and Pandey, ^[29]	Integrated approach of pain management in <i>Avabahuka</i> (Frozen Shoulder) – A case study.	Intervention: <i>Abhyanga</i> with <i>Mahanarayana Tail</i> , <i>Patra Potli Pinda Sweda</i> , <i>Nasya</i> with <i>Anu Tail</i> along with motion-stimulating exercises Matra: 4 drops Follow-up: 15 days	The results of this study showed significant relief in pain and stiffness. After using <i>Panchakarma</i> procedure and some exercises, the full range of shoulder movement is present.
28	Patel <i>et al.</i> , 2023 ^[30]	Management of <i>Abhighatjanya Apabahuka</i> (Traumatic frozen shoulder) by Ayurveda: A case study.	Intervention: <i>Sthanika abhyanga</i> with <i>murivenna taila</i> , <i>sthanika swedana</i> with <i>patra pinda sweda</i> , <i>rasnadi lepa</i> , and <i>Shaman aushadhi</i> Duration: 22 days	Treatment showed highly significant relief in pain, stiffness, and restricted painful movement of the shoulder.
29	Patil <i>et al.</i> , 2023 ^[31]	Management of frozen shoulder with <i>Jaloukavcharan</i> and phytotherapy: A case study	Intervention: <i>Sthanika Snehan</i> with <i>Tila Taila</i> and <i>Swedana</i> with <i>Dashamula Kwath</i> for 9 days, <i>Jaloukavcharan</i> – 2 sittings. <i>Shaman aushadhi</i> : <i>Panchatiktakghrita</i> Guggulu 250 mg BD and <i>Dashamularista</i> 30 ml BD for 30 days	Result of this study showed that <i>Jaloukavcharan</i> is effective in management of Frozen shoulder.
30	Parmar and Daga, 2023 ^[32]	Case study <i>Siravedh</i> – An approach to deal with the pain of <i>Avabahuk</i> W.S.R. to frozen shoulder	Intervention: <i>Siravedha</i> on <i>Kurpur Sandhi</i> with 18 no. needle Sitting: 1 placebo medicine during follows up i.e., for 15 days Follow-up: 15 th day after <i>siravedhan</i>	Result showed that it reduces pain and increases ROM of shoulder.

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Table 3: (Continued)

S. No.	Authors	Title	Methodology	Results
31	Metri et al., 2023 ^[33]	Role of the <i>Agnikarma</i> in the management of frozen shoulder	Intervention: <i>Agnikarma</i> with <i>Panchadhatu Shalaka</i> Sittings: 4 Duration: 28 days Interval: 7 days	Results of this study showed pain and stiffness is reduced after <i>Agnikarma</i> .
32	Mulay and Pai, 2023 ^[34]	Ayurvedic Management of <i>Avabahuka</i> – A case report	Intervention: <i>Panchakarma</i> along with <i>Shaman Aushadhis</i> Duration: 2 months	It gives significant result in reducing the symptoms of <i>Avabahuka</i> .
33	Godase et al., 2024 ^[35]	Role of <i>Viddhakarma</i> in <i>Avabahuka</i> (Frozen Shoulder) – A case study	Intervention: <i>Viddhakarma</i> with <i>suchi</i> Sitting: 3 Interval: 7 days Duration: 21 days	It gives instant pain relief in <i>Avabahuka</i> .
34	Juyal et al., 2024 ^[36]	Management of <i>Avabahuka</i> with <i>Prasarni Taila Nasya</i> and <i>Sthanik Patra Pinda Swedana</i> – A case study	Intervention: <i>Sthanika patra pinda sweda</i> followed by <i>Prasarni Taila Nasya</i> Matra: 8 drops Duration: 7 days	After <i>Nasya</i> patient got relief in pain, stiffness, and increase range of motion of shoulder joint.
35	Chouhan et al., 2024 ^[37]	Efficacy of <i>Marma Chikitsa</i> in the management of <i>Avabahuka</i> (frozen shoulder) – A single case study	Intervention: stimulate the 8 <i>marma</i> points Duration: 10 days Follow-up: 7 days	Patient got significant relief in pain, stiffness, disturb sleep and increase range of motion of shoulder joint.
36	Kolar et al., 2024 ^[38]	An Ayurvedic approach in the management of <i>Avabahuka</i> (frozen shoulder) – A case study	Intervention: <i>Sthanika patra pinda sweda</i> , <i>Mahamasha Taila Nasya</i> and <i>Rasnadi Guggulu</i> Matra: 8 drops Dose: 500 mg BD for 30 days Duration: 7 days	Patient got significant relief in symptoms and range of motion was improved.
37	Chaudhari et al., 2024 ^[39]	Efficacy of <i>Marma Chikitsa</i> and shoulder exercises in the management of <i>Avabahuka</i> (Frozen Shoulder) – A case study	Intervention: stimulate the 8 <i>marma</i> points twice a day Duration: 15 days Follow-up: 7 days	This study showed significant improvement in limited movements, relieving pain and stiffness.
38	Mohanty and Iche, 2024 ^[40]	Case Study on <i>Avabahuka</i> (Frozen Shoulder)	Intervention: <i>Panchakarma</i> and <i>Shaman aushadhi</i> such as <i>Rasnadi guggulu</i> , <i>Suvarna malini vasant</i> , <i>Chitrakadi vati</i> Dose: 250 mg BD Duration: 15 days	This study showed Marked improvement in management of <i>Avabahuka</i> .
39	Bhise et al., 2024 ^[41]	A role of ayurvedic management of <i>Avabahuka</i> W.S.R. frozen shoulder (Adhesive Capsulitis) – A case study	Intervention: <i>Panchakarma</i> including <i>sthanik snehan swedana</i> and <i>Manya basti</i> with <i>dashamula</i> and <i>dardnasha</i> oil for 6 days, <i>Viddha karma</i> – 6 sittings. <i>Shaman Aushadhi</i> - <i>Triphala Guggulu</i> , <i>Punarnava Guggulu</i> Dose: 500 mg BD	This study showed marked reduction in pain and stiffness. Improved range of motion
40	Dhurve, 2024 ^[42]	<i>Avabahuka</i> (Adhesive Capsulitis) is Managed with <i>Sirovirechana</i> and <i>Uttarbhattika Snehapana</i> : A case study	Intervention: <i>Panchakarma</i> (<i>Snehan-swedana</i> - <i>shirovirechan</i> with <i>Mahamasha Taila</i> for 24 days) along with <i>Shaman Aushadhi</i> (<i>Guggulutiktak ghrita</i> 20ml/day and <i>Vatagajankush rasa</i> 1 BD) Duration: 1 month Nasya matra: 2ml each nostril	Significant relief in stiffness, pain and increase ROM.
41	Malagi and Belavadi, 2024 ^[43]	Management Of <i>Avabahuka</i> with special reference to frozen shoulder through Ayurveda: A case report	Intervention: <i>Sthanika Abhyanga</i> with <i>parinatakerakshiradi Taila</i> and <i>Sthanika Jambira pinda sweda</i> Duration: 8 days <i>Shaman aushadhi</i> : <i>Mahayogaraja Guggulu</i> - 1 tab TDS, <i>Shalakadi vati</i> - 1 tab BD, <i>Astavarga kashaya</i> - 4 tsp. TDS.	Moderate improvement is seen in relieving pain but no difference seen in arm rotation.

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Table 3: (Continued)

S. No.	Authors	Title	Methodology	Results
42	Iranagoudra et al., 2024 ^[44]	Management of Avabahuka Through Mashadi Navana Nasya Along with Bahya Snehana and Swedana W.S.R to Frozen Shoulder	Intervention: <i>Mashadi Taila Navana Nasya</i> along with <i>Snehan, Swedana. Shamana Aushadhi: Guggulu Tiktak kashaya</i> 3tsp BD and <i>Hingwachadi churna</i> 1tsp BD for 15 days Matra: 8 drops for 2 days and 12 drops for 5 days Duration: 8 days Follow-up: 15 days	Patient got relief in reducing pain, stiffness and having less difficulty in daily routine.
43	Tathe and Jain, 2024 ^[45]	Evaluate the Effect of <i>Marma Chikitsa</i> along with Ayurvedic Medication in Avabahuka (Frozen Shoulder) – A case study	Intervention: Stimulation of <i>Marma</i> points Sittings: Twice a day Ayurvedic medicine: <i>Sunthi churna</i> 3gm BD, <i>Ekangvir rasa</i> 2 BD, <i>Maharasnadi kwath</i> 15 mL BD. Duration: 2 weeks	The result showed moderate improvement in ROM and relieving pain.

Table 4: Case series

S. No.	Author	Title	Methodology	Result
1	Kapadiya, 2023 ^[46]	Management of primary frozen shoulder (Avabahuka) through <i>Agnikarma</i> (peripheral nerve field stimulation) and adjuvant therapy: A case series.	Patients: 4 Intervention: <i>Agnikarma</i> by <i>Panchadhatu shalaka</i> Interval: 1 week Duration: 4 weeks Follow-up: 6 months	Complete pain relief and reduced stiffness was noticed in all four cases, and the decreased range of motion was achieved to normal except for internal rotation.

Table 5: Comparative clinical study

S. No.	Authors	Title	Methodology	Result
1	Ramesh, 2010 ^[47]	A comparative clinical study of <i>kukkutanda sweda</i> & infra-red therapy on <i>Apabahuka</i> wsr to frozen shoulder.	Patients: 30 (divided into two groups) Intervention: <i>kukkutanda sweda</i> and infra-red therapy Duration: 14 days	Statistically significant improvement was observed in all the criteria of assessment that included pain, stiffness, and range of shoulder movement in both the groups equally.
2	Naveen, 2010 ^[48]	Role of <i>Lashuna</i> (<i>Allium sativum</i> Linn.) in <i>Apabahuka</i> wsr to Frozen Shoulder – A clinical study.	Patients: 40 (each group 20 pt.) Intervention: Group A- placebo as control, Group B- <i>Lashuna ksheerapaka</i> Duration: 15 days Follow-up: 1 month	Results showed good response through <i>Lashuna ksheerapaka</i> in the management of <i>Apabahuka</i> .
3	Bangali, 2010 ^[49]	Clinical Management of <i>Apabahuka</i> [Frozen Shoulder] Through <i>Nasya</i> and <i>Nasaapana</i> .	Patients: 30 (each group 15 pt.) Intervention: Group A – <i>Marsha Nasya</i> with <i>Mahamasha taila</i> , Group B – <i>Nasapaan</i> with <i>Dashamooli Bala Masha Kwatha</i> . Dose of <i>Kwath</i> : 25 mL Follow-up: 2 months	<i>Nasaapana</i> is found to be more effective than <i>Nasya Karma</i> .
4	Agadi, 2010 ^[50]	A clinical study to evaluate the effect of <i>Sahacharadi Taila Nasya</i> in the management of <i>Apabahuka</i> with special reference to frozen shoulder.	Patients: 47 (Group A: 23 and Group B: 24) Intervention: Group A – Oral ayurvedic medicine for 21 days, Group B – <i>Nasayakarma</i> with <i>sahacharadi taila</i> for 7 days	<i>Nasya karma</i> gives better result compared to oral Ayurvedic medicine.
5	Jeeson, 2010 ^[51]	A comparative clinical study on <i>Nasya</i> and <i>Paana</i> of <i>Rasona Taila</i> in the management of <i>Apabahuka</i> .	Patients: 40 (each group 20 pt.) Intervention: Group A: <i>Nasya</i> with <i>rasona taila</i> and Group B: <i>Paana</i> of <i>Rasona taila</i>	<i>Nasya</i> with <i>Rasona tailam</i> given better effect than <i>SnehaPaana</i> in relieving the symptoms of <i>Apabahuka</i>

(Contd...)

Table 5: (Continued)

S. No.	Authors	Title	Methodology	Result
6	Rahul, 2011 ^[52]	To evaluate the effect of two schedules of <i>Nasya Karma</i> with <i>Ksheerabala Taila</i> in the management of <i>Avabahuka</i> (Frozen Shoulder).	Patients: 30 (each group 15 pt.) Intervention: Group A: two schedules of <i>Nasya Karma</i> with <i>Ksheerabala Taila</i> and Group B: one schedule of <i>Nasya Karma</i> with <i>Ksheerabala Taila</i> Duration: 7 days	This study shows that, Two Schedules of <i>Nasya Karma</i> provides far better result in comparison with one schedule of <i>Nasya Karma</i> .
7	Shivalli, 2011 ^[53]	A study on the efficacy of <i>Jalaukavacharana</i> in the management of <i>Apabahuka</i> w.s.r. To froze shoulder.	Patients: 40 (20 in each group) Intervention: Group A: <i>jalaaukavacharana</i> and Group B were treated with <i>Upanaha</i> and <i>Shamana chikitsa</i> Duration: Group A: 3 siiting, once a week and Group B: 21 days	Result showed that <i>Jalaukavacharana</i> gives good result in as compared to <i>Upanaha</i> and <i>Shamana chikitsa</i> .
8	Hoolikatti, 2014 ^[54]	A Comparative Clinical Study in the Management of <i>Avabahuka</i> through <i>Shamana Oushadis</i> with <i>Nasya Karma</i> .	Patient: 30 Intervention: Group A – <i>Karpasasthyadi Taila Nasya</i> followed by <i>Vatahara Kashaya</i> and Group B – <i>Karpasasthyadi Taila Nasya</i> followed by <i>Maharasnadi Kwatha</i> .	Result of this study showed that <i>Karpasasthyadi Taila Nasya</i> followed by <i>Maharasnadi Kwatha</i> showed better result than <i>Karpasasthyadi Taila Nasya</i> followed by <i>Vatahara Kashaya</i>
9	Pillai, 2018 ^[55]	A comparative clinical study on <i>Parinatakerikskeeradi Taila Nasya</i> and <i>Karpasasthyadi Taila Nasya</i> in the management of <i>Avabahuka</i> .	Patients: 30 (each group 15 pt.) Intervention: Group A: <i>Nasya</i> with <i>Parinatakerikskeeradi Taila</i> and Group B: <i>Nasya</i> with <i>Karpasasthyadi Taila</i>	<i>Nasya</i> with <i>Parinatakerikskeeradi Taila</i> had a better effect than <i>Nasya</i> with <i>Karpasasthyadi Taila</i> in <i>Avabahuka</i> .
10	Yadav, 2018 ^[56]	A comparative clinical evaluation of <i>Masha Taila-3</i> with neurocare drops in the management of <i>Apabahuka</i> WSR to Frozen Shoulder, By <i>Nasya Karma</i> .	Patients: 30 Intervention: Group A: <i>Nasya</i> with <i>Masha taila-3</i> and Group B: Neurocare drops	<i>Nasya</i> with <i>Masha taila-3</i> showed better results than neurocare drops.
11	Beragi, 2018 ^[57]	Comparative clinical study to evaluate the efficacy of <i>Nasya Karma</i> with <i>Ksheerabala Taila</i> and <i>Parinatakeri Ksheeradi Taila</i> in <i>Apabahuka</i> .	Patients: 30 Intervention: Group A: Two shedual <i>Nasya</i> with <i>Ksheerabala Taila</i> and Group B: One shedual <i>Nasya</i> with <i>Parinatakeri Ksheeradi Taila</i> Duration: 7 days	Result of this study shows Two shedual <i>Nasya karma</i> with <i>ksheerabala taila</i> is more effective than the one shedual <i>Nasya</i> with <i>parinatakeri ksheeradi taila</i>
12	Sudhakaran, 2018 ^[58]	A comparative study on <i>Navana Nasya</i> with <i>Svalpamasha Taila</i> and <i>Samisha Mahamasha Taila</i> in <i>Apabahuka</i> .	Patients: 43 Intervention: Group A: <i>Navana nasya</i> with <i>Samisha Mahamasha Taila</i> and Group B: <i>Navana nasya</i> with <i>Svalpamasha Taila</i>	<i>Nasya</i> with both <i>Svalpamasha Taila</i> and <i>Samishamahamasha Taila</i> provided equal effect in <i>Apabahuka</i> .
13	Deshpande, 2018 ^[59]	A comparative clinical Study on <i>Apabahuka</i> WSR to frozen shoulder through <i>Nasya</i> and <i>Shamanoushadi</i> .	Patients: 40 (each group 20 pt.) Intervention: Group A: <i>Nasya</i> with <i>Parinatakeriksheera taila</i> and <i>Shamana Aushadhi</i> as <i>Nirgundi Guggulu</i> and <i>Anupana</i> with <i>Dashamoola Bala Masha Kashaya</i> . and Group B: <i>Nasya</i> with <i>Karpasasthyadi Taila</i> and <i>Shamanaushadhi</i> as <i>Trayodashanga Guggulu</i> and <i>Anupana</i> with <i>vatahara kashaya</i> . Follow-up: 1 month	<i>Nasya karma</i> with <i>parinatakeriksheera Taila</i> and <i>Nirgundi guggulu</i> given the highly significant result in relieving symptoms of <i>Apabahuka</i> .
14	Sreelakshmi, 2018 ^[60]	A comparative clinical study to evaluate the efficacy of <i>Prasarinyadi Kahaya</i> and <i>Amruta Bala Ksheera Kashaya</i> with <i>Sthanika Abhyanga</i> and <i>Nadi Sweda</i> in <i>Apabahuka</i> WSR to Fozen shoulder.	Patients: 40 (each group 20 pt.) Intervention: Group A: <i>Prasarinyadi Kahaya</i> and Group B: <i>Amruta Bala Ksheera Kashaya</i> Duration: <i>Kwath</i> for 30 days and <i>Abhyang, swedan</i> for 7 days Dose: 48 mL	<i>Prasarinyadi Kashaya</i> along with <i>Sthanika Abhyanga</i> and <i>Nadi Sweda</i> is more effective and useful in the management of <i>Apabahuka</i> .

(Contd...)

Table 5: (Continued)

S. No.	Authors	Title	Methodology	Result
15	Bagali, 2018 ^[61]	To Evaluate the Efficacy of <i>Nasya</i> with <i>Mahamasha Taila</i> and <i>Nasaapana</i> with <i>Dashamoolibalamasha Kwatha</i> in the Management of <i>Avabahuka Wsr</i> to Frozen Shoulder.	Patients: 100 (each group 50 pt.) Intervention: Group A: <i>Nasya</i> with <i>Mahamasha Taila</i> and Group B: <i>Nasaapana</i> with <i>Dashamooli balamasha Kwatha</i> Duration: 7 days Follow-up: 1 month	Result of this study shows that <i>Nasaapana</i> with <i>Dashamooli balamasha Kwatha</i> was more effective than <i>Nasya</i> with <i>Mahamasha Taila</i> in reduction of Signs and Symptoms of <i>Avabahuka</i> .
16	Akki et al., 2019 ^[62]	To evaluate the comparative efficacy of <i>Svalpamasha Taila Nasya</i> and <i>Parinata Keriksheeradi Nasya</i> in <i>Avabahuka</i> (Frozen Shoulder).	Patients: 30 (each group 15 pt.) Intervention: Group A – <i>Nasya</i> with <i>Svalpa masha taila</i> and Group B – <i>Nasya</i> with <i>Parinata keriksheeradi taila</i> Matra: 10 drops Duration: 14 days Follow-up: 14 days	Results of this study showed that <i>Svaplamasha taila</i> was more effective in reliving the symptoms of <i>Avabahuka</i> than <i>Parinata keriksheeradi taila</i> .
17	Pankaj, 2020 ^[63]	A clinico comparative study on the role of <i>Dashamooli Bala Masha Kwath Nasya</i> and <i>Nadi Sweda</i> in the Management of <i>Avabahuka WSR</i> to frozen shoulder.	Patients: 100 (each group 50 pt.) Intervention: Group A: <i>Nasya</i> with <i>Dashamooli Bala Masha Kwath</i> and Group B: <i>Nasya</i> with <i>Dashamooli Bala Masha Kwath</i> along with <i>nadi sweda</i> . Matra: 32 bindu Duration: 6 weeks Follow-up: after 14, 28 and 42 days of treatment.	Results of this study showed that <i>Nasya karma</i> along with <i>Nadi sweda</i> is Significantly effective in <i>Avabahuka</i> .
18	Costa et al., 2020 ^[64]	A comparative clinical study on the efficacy of <i>Nasya</i> with <i>Pinyaka/ Panchamula Taila</i> and <i>Swalpa Masha Taila</i> in <i>Apabahuka</i> wsr to frozen shoulder.	Patients: 40 (each group 20 pt.) Intervention: Group A: <i>Pinyaka/ Panchamula Taila Nasya</i> and Group B: <i>Swalpa Masha Taila Nasya</i> Matra: 8 bindu Duration: 7 days	<i>Nasya</i> with <i>Pinyaka Taila</i> showed better results in reducing pain (51.2%), Stiffness (48%), Tenderness (58.33%), and moderate improvement in shoulder ROM than <i>Nasya</i> with <i>Swalpa Masha Taila</i> .
19	Maitradevi and Patil, 2020 ^[65]	A comparative clinical study to evaluate the efficacy of <i>Sheetala Jala Nasya</i> and <i>Masha Taila Nasya</i> with <i>Rasnadi Guggulu</i> in the management of <i>Avabahuka</i> with special reference to frozen shoulder	Patients: 40 (each group 20 pt.) Intervention: Group A: <i>Sheetal Jala Nasya</i> and Group B: <i>Masha Taila Nasya</i> Matra: 8 bindu Duration: 7 days Oral medicine: <i>Rasnadi Guggulu</i> for both group Dose: 500 mg BD Duration: 21 days Follow-up: 30 days	<i>Masha Taila Nasya</i> gives more significant result in reliving symptoms.
20	Naik, 2021 ^[66]	Standardization of <i>Nasapana</i> procedure using Syringe and Neti Pot method in patients of <i>Avabahuka</i> .	Patients: 40 Intervention: Group A ₁ : <i>Nasapana</i> by Syringe method with fixed dose Group A ₂ : <i>Nasapana</i> by Syringe method with increasing dose Group B ₁ : <i>Nasapana</i> by Neti pot method with fixed dose Group B ₂ : <i>Nasapana</i> by Neti pot method with increasing dose Duration: 7 days Dose: fix dose – 24 mL and Increasing dose – 12–24 mL Follow-up: 14 days	Results of this study showed that moderate improvement in the symptoms of <i>Avabahuka</i> such as pain, stiffness and range of motion.
21	Sorte et al., 2022 ^[67]	Comparative evaluation of <i>Manjishthadi Taila</i> and <i>Mahamasha Taila Nasya</i> in the management of <i>Avabahuka</i> (Frozen Shoulder) – A study protocol.	Patients: 60 Intervention: Group A: <i>Manjishthadi tail nasya</i> , and Group B: <i>Mahamasha taila nasya</i> Duration: 14 days Follow-up: 15 th day	Result showed that <i>Manjishthadi tail Nasya</i> is very effective than the <i>Mahamasha taila Nasya</i> .

(Contd...)

Table 5: (Continued)

S. No.	Authors	Title	Methodology	Result
22	Ghore, 2022 ^[68]	Clinical comparative study to evaluate the efficacy of <i>Ksheerbala Taila Nasya</i> in the management of <i>Avabahuk</i> with special reference to frozen shoulder.	Patients: 80 (each group 40 pt.) Intervention: Group A – <i>ksheerbalataila nasya</i> and Group B- <i>Mashataila nasya</i> Matra: 8 drops Duration: 7 Sittings: 2 Interval: 15 days	Result showed that <i>Mashataila Nasya</i> is more effective than the <i>ksheerbalataila Nasya</i> .
23	Rani et al., 2022 ^[69]	Efficacy of <i>Nasya Karma</i> and <i>Trayodashanga Guggulu</i> for the Management of <i>Avabahuka</i> (Frozen Shoulder).	Patients: 36 Intervention: Group A – <i>Mahamasha Taila Nasya</i> along with <i>Trayodashang Guggulu</i> and Group B – <i>Tryodashanga Guggulu</i> Dose: <i>Nasya</i> -8 bindu and tablet- 3 g twice a day Duration: 21 days	Results of this study showed that <i>Nasya Karma</i> with <i>Mahamasha Taila</i> along with <i>Trayodashang Guggulu</i> was found to be better than <i>Tryodashanga Guggulu</i> .
24	Raveendran et al., 2023 ^[70]	A comparative clinical study to evaluate the efficacy of <i>Mridu Paka</i> and <i>Madhyama Paka Karpasasthyadi Taila Nasya</i> in the management of <i>Apabahuka W.S.R.</i> to frozen shoulder	Patients: 30 (each group 15 pt.) Intervention: Group A – <i>Mridu Paka Karpasasthyadi Taila Nasya</i> and Group B- <i>Madhyama Paka Karpasasthyadi Taila Nasya</i> Matra: 8 bindu Duration: 7 days	<i>Nasya</i> with <i>Mrudu Paka Karpasasthyadi Taila</i> gives significant result (53.36%) as compared to <i>Madhyam Paka Karpasasthyadi Taila Nasya</i>
25	Chinky and Jain, 2023 ^[71]	Comparative study to evaluate the efficacy of <i>Mahamasha Taila Brihana Nasya</i> and <i>Agnikarma</i> in Treatment of <i>Avabahuka</i> (Frozen Shoulder)	Follow-up: 21 days Patient: 60 (each group 20 pt.) Intervention: Group A: <i>Mahamasha Taila Brihana Nasya</i> Group B: <i>Agnikarma</i> – 3 sittings Group C: <i>Agnikarma</i> and <i>Nasya</i> both Matra: 8 bindu Duration: 21 days Interval: 7 days	Combined therapy (Group C) was found better in reducing VAS score, SPADI score, and improving ROM.
26	Juyal et al., 2024 ^[72]	A comparative clinical study of <i>Patra Pinda Swedana</i> and <i>Parisheka</i> in <i>Avabahuka</i>	Follow-up: 7 days Patients: 40 Intervention: Group A – <i>Sthanik patra pind sweda</i> and Group B – <i>Sthanik parisheka</i> Time: 30–40 min/day Duration: 7 days	Result of this study showed that <i>Sthanik patra pind sweda</i> was given significant improvement than <i>sthanik parisheka</i> .
27	Wairagade and Misar, 2024 ^[73]	Comparative clinical study of <i>Amsabasti</i> versus <i>Snehan Swedana</i> therapy by <i>Laghuvishgarbha Taila</i> along with <i>Trayodashang Guggulu</i> in <i>Avabahuka</i> (Frozen shoulder)	Patients: 140 (each group 70 pt.) Intervention: Group C – control group treated with <i>LaghuVishagarbha Taila Snehan Swedana</i> and Group E – Experimental group treated with <i>Amsabasti</i> with <i>LaghuVishagarbha Taila</i> Oral medicine: <i>Trayodashang Guggulu</i> for both group Duration: 21 days Follow-up: weekly	<i>Amsabasti</i> showed significant result in relieving symptoms of <i>Avabahuka</i> .
28	Ramoul et al., 2024 ^[74]	A clinical study to evaluate the effect of <i>Masha Taila</i> and physiotherapy in the management of <i>Avabahuka W.S.R.</i> to frozen shoulder	Patient: 30 (each group 15 pt.) Intervention: Group A: <i>Masha Taila (Matra basti and Sthanika Abhyanga)</i> along with Physiotherapy Group B: Physiotherapy Duration: 10 days Follow-up: two follow-up at an interval of 7 days	Group A got significant results in relieving pain and improving ROM compared to Group B.

Table 6: Single-arm clinical study

S. No.	Authors	Title	Methodology	Results
1	Banamali et al., 2010 ^[75]	A study on <i>Apabahuka</i> (frozen shoulder) and its management by <i>Laghumasha taila nasya</i> .	Patients: 15 Intervention: <i>Laghumasha taila marsha nasya</i> Matra: 6, 8, or 10 drops Duration: 7 days	<i>Nasya</i> with <i>Laghumasha taila</i> provided a moderate effect on the symptom <i>Bahupraspandita hara</i> and a mild effect on <i>Shoola</i> .
2	Shashirekha, 2012 ^[76]	Role of <i>Parinatha keerikskeeradi taila Nasya</i> and <i>Dhanvantara 101 avartita taila adhyantara prayoga</i> in the management of <i>Apabahuka</i> -A clinical study.	Patients: 30 Intervention:- <i>Parinatha keerikskeeradi taila nasya</i> along with <i>Dhanvantara 101 avartita taila abhyantara prayoga</i>	Results of this study show a highly significant effect on reducing the symptoms of <i>Apabahuka</i> .
3	Patil and Rao, 2014 ^[77]	Effect of <i>Masha Saindhava Taila</i> in the management of <i>Apabahuka</i> W.S.R to frozen shoulder.	Patients: 30 Intervention: <i>Masha Saindhava Taila Nasya</i> Matra: 8 drops Duration: 7 days Follow-up: weekly	Result of this study shows that <i>Nasya</i> with <i>Masha saindhav taila</i> give moderate improvement in the symptoms of <i>Apabahuka</i> .
4	Prasad et al., 2017 ^[78]	Clinical evaluation of <i>marma</i> therapy in <i>Avabahuka</i> WSR to frozen shoulder.	Patients: 30 Intervention: <i>Marma</i> therapy was done twice a day Follow-up: 1 month	<i>Marma</i> therapy in <i>Avbahuka</i> was found to be highly effective in most of the parameters like reduction in pain and stiffness, increase ROM.
5	Saini, 2018 ^[79]	A clinical study of <i>Shunthyadi Churnam</i> in <i>Apabahuka</i> .	Patients: 30 Intervention: <i>Shunthyadi Churnam</i> Dose: 1 karsh Duration: 14 days Follow-up: after one week	The results of this study showed moderate improvement in relieving symptoms of <i>Apabahuka</i> .
6	Htwe et al., 2019 ^[80]	Combination Effect of <i>Patrapinda Sweda</i> (Hot Fomentation) and Massotherapy on <i>Apabahuka</i> (Frozen Shoulder)	Patients: 40 Intervention: <i>Patrapinda Sweda</i> and Myanmar Massotherapy Time: 20 min/day Duration: 28 days Follow-up: weekly	The results of this study showed moderate effect in relieving the symptoms of <i>Apabahuka</i> .
7	Kamatagi and Jadhav, 2022 ^[81]	Clinical study on the effectiveness of <i>Vatagajankusha Rasa</i> with <i>Pippali Churna</i> and <i>Manjishta Kwatha</i> as <i>Anupana</i> in <i>Apabahuka</i> (Frozen Shoulder).	Patients: 30 Intervention: <i>Vatagajankusha Rasa</i> Tablet (125 mg), 30 min before food with <i>Anupana</i> , 15 ml <i>Manjishta Kwatha</i> and 3 gm <i>Pippali Churna</i> twice daily Duration: 7 days	The result of this study shows marked improvement in the ROM of shoulder joint and reducing the <i>shoola</i> .
8	Nath, 2022 ^[82]	An open clinical study of <i>Dvitivya Brihanmasha Taila Nasya</i> in the management of <i>Avabahuka</i> .	Patients: 30 Intervention: <i>Nasya Dvitiya Brihanmasha Taila</i> Matra: 8-8 drops into each nostril Duration: 7 days Follow-up: 15 days	Results of this study showed highly significant results in managing the symptoms such as <i>Stambha</i> , <i>Gaurava</i> , <i>Shoola</i> and functional inability
9	Gangaram et al., 2023 ^[83]	An open-label single arm clinical study of <i>Dashamooladi Yamaka Pratimarsha Nasya</i> and <i>Prasaranyadi Kashaya</i> in <i>Apabahuka</i> (Frozen Shoulder).	Patients: 30 Intervention: <i>Nasya</i> with <i>Dashamooladi Yamaka</i> and orally <i>Prasaranyadi Kashaya paana</i> Matra: 2 drops, twice a day Dose of <i>kwath</i> : 16 ml thrice per day Duration: 14 days	Results of this study showed significant improvement in symptoms like <i>Amsa Sandhi</i> , <i>Bahu prasapanditahara</i> and range of movement of shoulder joint.

tools, including visual analog scale for pain, grading scale for stiffness, and goniometry for range of movements measurement.

In this review, the above included studies have shown that *Nasya karma* alone or combined with other interventions, as well as different types of *Swedana*, yields better results in relieving pain, stiffness, and achieving full range of motion. As per Acharya Vagbhatta, *Nasya* is effective treatment for *Avabahuka*, as it alleviates *Vata Dosha*, a primary causative factor,^[88] while *Agnikarma* and *Marma chikitsa* have demonstrated moderate efficacy in

reducing pain and stiffness, with moderate improvement in range of motion due to increased blood circulation and alleviation of *Vata Dosha*. *Shamana Aushadhi* such as *Trayodashanga Guggulu*, *Vatagajankusha rasa*, *Gandharvahastadi Kashay*, *Dashamula Kashay*, *Sunthi Churna*, and *Rasona* (garlic) is beneficial due to their *Ushna Veerya* and *Vatashamak* properties.

Uniform content is crucial for scientific assessment and citation of research. However, our review revealed variability in methodology and assessment criteria across studies on Ayurvedic

Table 7: Pilot study

S. No.	Authors	Title	Methodology	Results
1	Tyagi, 2011 ^[84]	A Pilot Study of Agnikarma on Frozen Shoulder (Avabahuka).	Patients: 30 (divided into 2 groups) Intervention: Group 1 – Agnikarma, Group 2 – wax bath therapy Duration: 15 days Follow-up: 1 month	Agnikarma was slightly more effective compared to wax bath therapy in the management of Avabahuka.
2	Shweta et al., 2017 ^[85]	Evaluation of Nasya with Mashadi Siddha Taila in Avabahuka – A pilot study.	Patients: 15 Intervention: Nasya with Mashadi siddha taila Matra: 8 bindu Duration: 7 days	Statistical analysis of this study showed significant improvement on the symptoms such as Bahupraspandita hara, Shula and stambha.
3	Songara and Dash, 2024 ^[86]	Evaluation of the effect of Bala Tailam Nasya and Baladi Kwatha Pana in the management of Avabahuka – A pilot study	Patients: 10 Intervention: Nasya with Bala taila and Baladi kwath orally Matra: 8 drops Dose: 40 ml BD Duration: 21 days	Result of this study showed that 20% relief in pain, 30% relief in stiffness and 53.33% relief in Bahupraspandita hara.
4	Chouhan et al., 2024 ^[87]	Evaluation of the effect of Marma Chikitsa in the management of frozen shoulder (Avabahuka) – A pilot study	Patients: 7 Intervention: stimulation of 8 marma points once a day Duration: 10 days Follow-up: 7 days	Result of this study showed that 63.09% relief in pain, 50.19% relief in stiffness and moderately improvement in range of motion

Table 8: Different interventions in the management of Avabahuka

Interventions	No. of studies
Nasya karma	21
Nasya karma along with other intervention such as Swedana, Shamana Aushadhi, and physiotherapy	15
Shamana Aushadhi	03
Agnikarma	12
Marma Chikitsa	07
Different type of Swedana	05
Shodhana Chikitsa	18
Raktamokshan	03
Vidhakarma	01

management of Avabahuka, with some research works unavailable in the public domain (gray literature). Standardizing content and making data publicly accessible would facilitate meta-analysis of trials conducted at research institutes. Registering and publishing all trials in the Clinical Trials Registry India (CTRI) would enable future data collection and analysis. This article highlights the scientific process of data mining, methodology, and analysis of available digital data on Ayurvedic management of Avabahuka through various interventions.

CONCLUSION

This review suggests that various therapeutic interventions, both pharmacological and non-pharmacological, can alleviate pain, stiffness, and restore range of motion in Avabahuka by pacifying Vata Dosha, as described in ancient Ayurvedic texts. Notably, Nasya karma appears to yield the most promising results. Further evidence-based research is warranted to explore non-pharmacological treatments that are time-efficient and cost effective and provide instant relief for patients with Avabahuka. This study emphasizes the importance of registering clinical trials with the CTRI and publishing data online for future reviews. It also highlights the need for research on unexplored areas of Avabahuka treatment, as advocated by Acharya's, and

validates the efficacy of various interventions in managing Avabahuka.

Limitations

This review article includes only clinical studies available through online search engines.

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