

A COMPREHENSIVE REVIEW ON ARMA WITH SPECIAL REFERENCE TO PTERYGIUM

Dr. Akshita Sharma^{*1}, Dr. Vijayant Bhardwaj², Dr. Sukhdev Singh³,
Dr. Hardev Thakur⁴

¹PG Scholar, Dept. of *Shalakya Tantra*, Rajiv Gandhi Post Graduate Ayurvedic College & Hospital, Paprola, Himachal Pradesh.

²Professor & H.O.D., Dept. of *Shalakya Tantra*, Rajiv Gandhi Post graduate Ayurvedic College & Hospital, Paprola, Himachal Pradesh.

³Professor (Retd.), Dept. of *Shalakya Tantra*, Rajiv Gandhi Post Graduate Ayurvedic College & Hospital, Paprola, Himachal Pradesh.

⁴Lecturer, Dept. of *Shalakya Tantra*, Rajiv Gandhi Post Graduate Ayurvedic College & Hospital, Paprola, Himachal Pradesh.

Article Received on 15 Sept. 2026,

Article Revised on 05 Oct. 2026,

Article Published on 16 Oct. 2026,

<https://doi.org/10.5281/zenodo.23432745>

*Corresponding Author

Dr. Akshita Sharma

PG Scholar, Dept. of *Shalakya Tantra*,
Rajiv Gandhi Post Graduate Ayurvedic
College & Hospital, Paprola, Himachal
Pradesh.



How to cite this Article: Dr. Akshita Sharma^{*1},
Dr. Vijayant Bhardwaj², Dr. Sukhdev Singh³,
Dr. Hardev Thakur⁴ (2026). A Comprehensive
Review On Arma With Special Reference To
Pterygium. World Journal of Pharmaceutical
Research, 15(20), 1472–1482.

This work is licensed under Creative Commons
Attribution 4.0 International license.

ABSTRACT

Arma, described in *Ayurveda* under *Shuklagata Netra Roga*, is a fleshy growth originating at the inner (*Kaneenika*) or outer (*Apanga*) canthus and progressively invading the cornea (*Krishna Mandala*). Rather than grouping cases by shape as in modern systems, the Ayurvedic perspective focuses on clinical features, the doshic disturbances involved, and underlying imbalances. Classical sources attribute *Arma* to derangement of *Pitta* and *Kapha*, often promoted by environmental triggers such as prolonged sun, dust, or heat exposure. Treatment in *Ayurveda* combines conservative and operative methods: non-surgical care uses therapies like *Anjana*, *Tarpana*, and *Nasya* with herbal preparations to pacify the *doshas* and limit progression, while advanced lesions are managed by surgical excision (*Chedana Karma*) followed by pacifying (*Shamana*) and rejuvenative (*Rasayana*) measures to support healing and

reduce recurrence. This review synthesizes teachings from Ayurvedic classics and commentaries alongside contemporary ophthalmology to present a holistic view of *Arma*,

underlining the importance of individualized, dosha-focused management for durable outcomes and prevention of relapse.

KEYWORDS: *Arma*, *Shuklagata Netra Roga*, Pterygium.

INTRODUCTION

Vision is an essential sensory function making the eyes an essential *Gyanendriya*. *Ayurveda* provides detailed descriptions of eye disorders; classical authorities such as *Sushruta* and *Vagbhata* include *Arma* among the *Shuklagata Netra Roga*.^[1] This condition arises from the conjunctival (*Shleshmaka Kala Bhag*) tissue and gradually extends onto the cornea (*Krishna Mandal*), progressively impairing vision.^[2] Although pterygium rarely leads to major systemic problems, its advancement into the clear visual axis can obstruct sight.

AIMS AND OBJECTIVES

To review the concept of *Arma*, and correlate its clinical features, pathogenesis, classification, and management with pterygium.

MATERIALS AND METHODS

As this was a review-based study, relevant information on *Arma* was collected from *Samhitas*, classical commentaries, textbooks, and contemporary ophthalmic literature. The identified sources were critically reviewed, organized, and analyzed to develop a comprehensive understanding of the disease and its management.

Etiology (*Nidana*)

Ayurvedic literature describes *Arma* as arising from several predisposing factors, including irregular sleep habits, sudden contact with cold water after exposure to heat, excessive perspiration, and environmental irritants such as smoke and dust. Dietary factors, particularly frequent consumption of sour preparations such as *Shukta* and *Aarnala*, along with excessive intake of meat, are also considered contributory. These factors may disturb the *Doshas* and affect vulnerable ocular tissues, ultimately leading to the development of *Arma*.

From a modern ophthalmic perspective, pterygium is associated with chronic exposure to ultraviolet radiation, wind, dust, and airborne allergens. It is regarded as a degenerative disorder of the conjunctiva that becomes more common with advancing age and is frequently observed among people living in hot, dry, and sun-exposed environments.

Ayurvedic Classification of Arma

Ayurvedic literature categorizes *Arma* into five varieties according to the *doshas* involved and the characteristic appearance of the lesion.^[3]

- *Prastari Arma*: A delicate, diffuse growth that spreads over the ocular surface and may show a reddish or bluish coloration; it is associated with *Tridosha* involvement.
- *Shukla Arma*: A slowly enlarging, pale or white lesion primarily related to aggravated *Kapha dosha*.
- *Kshataja* or *Lohita Arma*: A red, fleshy, elongated growth associated with the involvement of *Rakta*.
- *Adhimamsa Arma*: A thick, soft mass with an appearance similar to liver tissue, attributed to the combined aggravation of the three *doshas*.
- *Snayu Arma*: A light-coloured lesion with linear or cord-like streaks, also linked to *Tridosha* involvement.

Modern Classification of Pterygium^[4]

- **Progressive pterygium**: A thick, fleshy lesion containing prominent blood vessels and associated corneal changes, including Fuchs' spots and Vogt's islets.
- **Atrophic pterygium**: A thin, flat, and relatively avascular growth that may be accompanied by Stocker's line, a linear iron deposit within the corneal epithelium.

Pathogenesis

According to *Ayurveda*, vitiated *doshas* migrate toward the ocular tissues that are most vulnerable, disturbing their normal function and contributing to the development of *Arma*. When *Kapha* is predominantly involved, the lesion mainly affects the *Shukla* region, or the white part of the eye, and is regarded as comparatively more difficult to manage.

In modern ophthalmology, pterygium is considered a degenerative and proliferative disorder of the conjunctiva. It involves elastotic degeneration in the subepithelial conjunctival tissue, followed by the growth of fibrovascular or granulation tissue toward the cornea.^[5] As the lesion advances, it may cross the limbus, disrupt Bowman's layer, and interfere with vision.

Signs and Symptoms

- Initial stage: The condition may remain asymptomatic or cause mild ocular irritation and an intermittent foreign-body sensation.

- Advanced stage: Extension onto the cornea may result in reduced visual acuity, astigmatism, or diplopia.
- Head: The portion of the lesion that extends onto the cornea.
- Neck: The area where the lesion crosses or meets the limbus.
- Body: The part located over the scleral conjunctiva.
- Cap: A crescent-shaped infiltrative zone situated in front of the advancing apex.

Stocker–Busacca’s line is an iron deposit that may appear in the corneal epithelium near the advancing tip of the pterygium. The lesion commonly develops on the nasal side because of greater exposure to sunlight, pooling of tears near the medial canthus, and accumulation of dust or other environmental irritants.

Diagnosis

Pterygium is usually diagnosed through a detailed ocular examination, which may include:

- Torch-light examination: Provides an initial view of the conjunctival growth.
- Slit-lamp examination: Allows close assessment of the lesion, cornea, limbus, and surrounding ocular tissues.
- Visual-acuity assessment: Determines whether the lesion has affected vision.
- Corneal topography: Detects corneal curvature changes and astigmatism caused by the pterygium.

Differential Diagnosis^[6]

Pterygium should be differentiated from other conjunctival and ocular-surface lesions, including.

- Pinguecula: A yellowish, raised lesion near the limbus that does not extend onto the cornea; its pointed end is directed away from the corneal surface.
 - Pseudopterygium: A fold or adhesion of scarred conjunctiva to the peripheral cornea or sclera, usually developing after inflammation, trauma, or other ocular injury.
 - Conjunctival papilloma: A generally lobulated growth that may be supplied by a prominent sentinel blood vessel.
 - Ocular Surface Squamous Neoplasia (OSSN): A potentially neoplastic ocular-surface lesion that may appear lobulated and demonstrate prominent feeder or sentinel vessels.
- An inflamed pterygium may also resemble episcleritis, scleritis, or phlyctenular conjunctivitis. These inflammatory disorders usually present as localized nodular or

diffuse inflammation, whereas pterygium typically has a characteristic triangular or wing-shaped fibrovascular appearance.

Complications of Pterygium^[7]

Pterygium is generally benign, but complications may occasionally occur. These include.

- Cystic degeneration or secondary infection, although both are uncommon.
- Rare malignant changes, such as transformation into epithelioma, fibrosarcoma, or melanoma.
- Repeated inflammation, which may cause recurrent redness, irritation, foreign-body sensation, and ocular discomfort.

Ayurvedic Management of Arma

In *Ayurveda*, *Arma* is regarded as an abnormal growth involving the *Shukla Mandala*. Treatment is selected according to the lesion's characteristics, severity, and response to therapy. Conservative management should generally be considered before surgical intervention whenever clinically appropriate.

Treatment Classification

Lekhana-Sadhya

Lekhana-Sadhya refers to lesions that may be managed without surgery.

The *Arma* which is small, whitish, bluish or reddish and thin should not be removed by *Chedana*. It should be treated as the treatment of *Shukra*, where different type of *Lekhya Anjan* has been advised.^[8] It is also highly beneficial after the surgical treatment for prevention of relapse after surgery.

Chedana-Sadhya

Chedana-Sadhya denotes lesions requiring surgical excision, particularly it is progressive, visually significant, cosmetically problematic, or unresponsive to conservative measures.

Acharya Sushruta and *Vagbhata* described elaborately the surgical procedure of *Arma*.^[9] They also explain the pre-operative and post-operative aspects. According to modern medicine, surgery is the only treatment of pterygium.

Indications for Arma Chedana

Surgical excision is recommended when *Arma* becomes thick, firm, or leathery in consistency and is covered by *Snayu* and *Mamsa*. Surgery is also indicated when the lesion extends onto

the *Krishna Mandala*, particularly toward the visual axis. A growth that remains away from the central cornea may not significantly affect vision; however, progressive extension toward the pupillary area can obstruct sight. In such cases, removal of the *Arma* may help restore a clearer visual field.

Preoperative Measures

Before any surgical procedure, the aggravated *Doshas* should be brought into balance. *Ayurvedic* texts describe *Panchakarma* for bodily purification, after which the patient is considered fit for *Chedana Karma*. On the day before surgery, *Snehapana* or a suitably unctuous diet is advised, followed by a nourishing meal on the morning of the procedure.

To loosen the *Arma*, powdered *Lavana* is applied over the lesion using the *Anjana* method and then used to cleanse the eye. This produces local irritation and makes the growth easier to remove. *Acharya Vagbhata* recommends performing the operation with the patient lying down, while lemon juice may also be used to stimulate and soften the lesion.

➤ Instruments Required

The instruments should be properly prepared and sterilized before surgery. The main instruments include.

1. *Badisha Yantra*
2. *Muchundi Yantra*
3. Needles
4. *Mandalagra Shastra*

Main Surgical Procedure

After adequate *Snehan* and *Swedan*, the patient is seated comfortably and instructed to keep the head still and direct the gaze away from the lesion.

The elevated lesion is grasped with a *Badisha*, *Muchundi*, or thread and carefully excised using a sharp *Mandalagra Shastra*. The growth is dissected from the *Krishna Mandala* and *Shukla Mandala*, with care taken to preserve the surrounding ocular tissues. Incomplete removal may increase the risk of recurrence. Special attention should be given to the canthi, lacrimal passages, blood vessels, and nerves, as injury may cause persistent watering or other complications.

Postoperative Care

After excision, a paste prepared from *Yavakshara*, *Saindhava Lavana*, and *Trikatu* is applied to the operative site (*Pratisarana*). The eye is then managed with *Swedan* and *Vranabandha*, while *Snehan* is selected according to the patient's *Dosha*, strength, season, and clinical condition.

The *Bandha* is then removed after approximately three days, followed by *Hastasweda* and *Shodhana* and *Ropana Chikitsa* is done accordingly.

Pain-relieving measures

- *Aschoyatana* using a medicated milk decoction containing *Karanj*, *Amalaki*, and *Yashtimadhu* with *Madhu*.^[10]
- *Pralepa* prepared from *Yashtimadhu*, *Kamalkeshar*, *Durva*, *Dugdha*, and *ghee* may also be used.^[11]
- *Lekhana Anjana*: If small remnants remain after excision, this procedure may be considered for removing residual tissue.^[12]

Modern Treatment of Pterygium

➤ Surgical Methods^[13]

The choice of surgery depends on the size, progression, location, visual effect, and recurrence risk of the pterygium. Commonly used excision techniques include.

1. Simple excision: The abnormal fibrovascular tissue is removed without covering the resulting conjunctival defect.
2. Excision with primary conjunctival closure: After removing the pterygium, the adjacent conjunctiva is sutured to cover the exposed area.
3. Bare-sclera technique: The pterygium is excised while a portion of the underlying sclera is left uncovered.
4. Excision followed by grafting: A graft is placed over the exposed scleral region to promote healing and reduce recurrence. Grafting options include.
 - Free conjunctival autograft.
 - Amniotic membrane graft.
 - Mucous membrane graft.
 - Limbal-conjunctival graft.
 - Rotational conjunctival graft.

5. PERFECT procedure: Pterygium Extensive Removal Followed by Extended Conjunctival Transplantation is a more extensive technique designed to remove abnormal tissue thoroughly and reduce the likelihood of recurrence.

➤ Additional Treatments

Adjunctive therapies may be used to limit postoperative fibrovascular proliferation and recurrence.^[14]

- Thiotepe: May be administered as eye drops four times daily for approximately six weeks in selected cases.
- Mitomycin C: A 0.02% solution may be applied intraoperatively to the bare sclera under strict clinical supervision.
- Beta irradiation: May be used in selected cases to inhibit fibrovascular tissue proliferation.

Management of Corneal Opacity

When a pterygium has extended into the pupillary zone, residual corneal scarring or opacity may remain after excision. Depending on its depth and visual significance, treatment may include.

- Phototherapeutic keratectomy (PTK).
- Lamellar keratoplasty.

Preoperative Assessment

Before surgery, the patient may undergo relevant systemic and ophthalmic evaluation, including.

- Blood-pressure measurement.
- Blood-glucose testing.
- HIV and hepatitis B surface-antigen screening.
- Electrocardiography when clinically indicated.
- Assessment of bleeding and clotting parameters.

The required investigations should be tailored to the patient's medical history and the planned anesthetic procedure.

Surgical Technique

Anesthesia

For routine excision, topical 4% lignocaine may be combined with local infiltration using 2% lignocaine. Sub-Tenon's or peribulbar anesthesia may be considered when a grafting procedure is planned.

Operative Steps

1. Corneal dissection: The pterygium is gently elevated and separated from the corneal surface.
2. Conjunctival and scleral separation: The involved tissues are carefully dissected while preserving healthy surrounding structures.
3. Removal of the lesion: The fibrovascular tissue is excised with care to avoid damage to the medial rectus muscle.
4. Hemostasis: Bleeding is controlled using appropriate cautery or other hemostatic measures.
5. Conjunctival limbal autograft transplantation: A healthy conjunctival-limbal graft is transferred to the excised area and secured in position. This technique is widely used to reduce recurrence, while fibrin glue may facilitate graft adherence, improve postoperative comfort, and support faster healing.

Use of antimetabolites, beta irradiation, and grafting should be determined by an ophthalmic surgeon because these treatments can produce serious complications if improperly selected or applied.

Postoperative Care and Follow-up

After pterygium surgery, appropriate postoperative management is essential for healing and prevention of complications. Treatment may include.

- Topical corticosteroids: Fluorometholone or dexamethasone may be prescribed for approximately 4–6 weeks, depending on the degree of inflammation and the surgeon's assessment.
- Topical antibiotics: These may be used during the early postoperative period to reduce the risk of infection.
- Lubricating eye drops: Artificial tears help relieve dryness, irritation, and foreign-body sensation while maintaining ocular-surface moisture.

Complications of Pterygium Surgery

Intraoperative Complications

Possible complications during surgery include.

- Bleeding caused by damage to conjunctival blood vessels.
- Accidental perforation of the cornea or sclera.
- Trauma to the medial rectus muscle.

Postoperative Complications

Following surgery, patients may develop.

- Corneal opacity: This can occur when the lesion has extended deeply or beyond Bowman's membrane.
- Diplopia: Restricted eye movement may result from postoperative adhesions or scarring.
- Suture-related problems: These include suture granuloma and conjunctival cyst formation.
- Scleral thinning or necrosis: This risk is particularly important when antimetabolites such as mitomycin C are used.
- Recurrence: Reappearance of the pterygium is the most frequent long-term complication.

Recurrence and Prevention

Reported recurrence rates vary according to the surgical method, lesion characteristics, follow-up duration, and patient-related factors. Bare-sclera excision is associated with a comparatively high risk of recurrence, whereas limbal-conjunctival autografting generally provides better recurrence control.

Preventive measures may include.

- Thiotepe eye drops.
- Intraoperative mitomycin C, commonly at a 0.02% concentration when clinically indicated.
- Beta irradiation in selected cases.
- Limbal-conjunctival autografting to restore the affected ocular-surface barrier.

CONCLUSION

Effective pterygium management requires an individualized plan that considers lesion severity, visual involvement, recurrence risk, and ocular-surface health. Simple excision may be suitable for selected mild cases, while techniques incorporating limbal tissue transplantation can offer more reliable long-term control. Careful postoperative monitoring,

adequate lubrication, protection from ultraviolet radiation, and timely management of inflammation are important for satisfactory healing and reducing recurrence.

REFERENCES

1. Dr. Ambikadatta Shastri: Chaukhambha publications, Varanasi, Sushruta Samhita Uttaratantra 4/5-6.
2. Shalakya Vijyana, Dr. Ravichandra Chaudhary, Chaukhamba orientalia, Varanasi, 168-174.
3. Dr. Ambikadatta Shastri: Chaukhambha publications, Varanasi, Sushruta Samhita Uttaratantra, 4/5-6; 26-27.
4. A.K. Khurana, Comprehensive Ophthalmology, 6th Edition, Jaypee Brothers, New Delhi, 2015; 87.
5. Jack J Kanski Clinical ophthalmology 6th edition, Pg 242.
6. A.K. Khurana, Comprehensive Ophthalmology, 6th Edition, Jaypee Brothers, New Delhi, 2015; 88.
7. A.K. Khurana, Comprehensive Ophthalmology, 6th Edition, Jaypee Brothers, New Delhi, 2015; 88.
8. Dr. Ambikadatta Shastri: Chaukhambha publications, Varanasi, Sushruta Samhita Uttaratantra 12/28-31.
9. Dr. Ambikadatta Shastri: Chaukhambha publications, Varanasi, Sushruta Samhita Uttaratantra 15/4-8.
10. Dr. Ambikadatta Shastri: Chaukhambha publications, Varanasi, Sushruta Samhita Uttaratantra 15/14.
11. Dr. Ambikadatta Shastri: Chaukhambha publications, Varanasi, Sushruta Samhita Uttaratantra 15/15.
12. Dr. Ambikadatta Shastri: Chaukhambha publications, Varanasi, Sushruta Samhita Uttaratantra 15/16.
13. A.K. Khurana, Comprehensive Ophthalmology, 6th Edition, Jaypee Brothers, New Delhi, 2015; 88.
14. Jack J Kanski Clinical ophthalmology 6th edition, Pg 243.