Emergency Management of Netra Dagdha Vrana: Case Report

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Abstract: Netra is an important sense organ. It is prominently exposed organ in the face, so more prone to abhighatas (accidental and occupational injuries). One such abhighataja vyadhi is the dagdha vrana. Present case presentation of dagdha netra vrana which occurred due to accidental exposure of eyes to arka dugdha (milky exudate from Calotropis plant) shows acute pathological condition of eye by affecting Krishna mandala (cornea) leading to vrana shukra (corneal epithelial erosion). Emergency treatment was done to avoid corneal ulcer and corneal opacity-blindness as conjunctival congestion, corneal edema etc. were already present when patient approached. Netra seka was selected as choice of kriyakalpa, using Yashti Ksheera Paka, along with an internal medicine. After 3 days of this treatment, 80% improvement was seen.

Keywords: Netra vrana, abhighata, accidental, emergency, corneal edema, conjuctival congestion, ulcer, krishna mandala, arka dagdha, Yashti Ksheera.....

Ayurveda classifies the eye-ball in five circles, known as *Mandala* or sub-divisions viz., Pakshma mandala, Vartma mandala, Shwetha mandala, Krishna mandala and Drishti mandala[1]. Abhighata (accident) to any of these mandalas may lead to many different kinds of complications. Among these, Krishna mandala or cornea is the most sensitive part due to vata dominance (innervations). It is eye's optical window and important refractive medium in the eye[2]. It has unusual capacity to work without blood vessels, which means it is an avascular tissue. The smoothness of cornea is ensured by three-layer precorneal tear. Roughness in epithelium may cause blurred vision. The transparency of cornea is maintained by uniform arrangement of lamellae of collagen fibrils in corneal stroma and relative state of dehydration (78% water content)[18]. Its transparency is necessary for visual perception. Any injury to the cornea exposes nerve endings causing pain and involuntary eye closing[2]. Being at the front surface of the eye, cornea is often affected by erosion, ultraviolet rays, foreign body penetration etc. Chemical burning, dust, plant exudates etc. are prominent foreign bodies affecting cornea. Plant products or exudates or latex are common foreign bodies reported throughout the globe as foreign body affecting cornea as latex of *Euphorbia* (Snuhi), *Calotropis* (Arka) etc.

Arka (*Calotropis* sp.), a shrub from *Asclepiadaceae* exudes latex when injured. The flowers of plant are used extensively in religious and other purposes, so it is common to get in contact of latex. Ocular toxicity of latex of this plant is already reported[3].

Materials and method

Materials required: Yashtimadhu, ksheera (milk), water, a glass measuring quantity of 40 ml

Methods: They are divided in two parts as:

1. **Preparation of yashtimadhu ksheera paka:** 10 gm of yashtimadhu churna, 200ml of milk and 1600ml were taken. They were mixed and boiled to reduce to 800ml.
2. **Procedure of seka:** *Yashtimadhu Ksheera* was taken in a glass of 40ml quantity. The patient was made to lie down with his eye closed, and the *Yashtimadhu Ksheera* was poured continuously over the eye from the height of 4 angula (2.5-3 inches). 30 such glasses of *Ksheera Seka* was done in a single cycle. Total 3-4 such cycles were done in a day. The whole procedure was repeated for 3 consecutive days.

Case Report: A 34 years old male patient reported the accidental exposure to Arka dugdha in right eye. This res-

ulted in severe burning sensation, watering, redness, irritation, pain with progressive blurry vision. He came 3 ho-hours after the incident. Examination revealed conjunctival congestion, photophobia, corneal oedema, and breaks in the stroma. Visual acuity in right was 6/12 while left eye was normal with 6/6. This condition needed atyayika chikitsa (emergency management). First of all, his affected eye was profusely irrigated with water. Thereafter, he was treated with *Yashtimadhu Ksheera Seka*. The procedure was done for 3 days. During these days of treatment, he was given with *Drakshadi Kashaya* internally. After 3 days of treatment, patient's condition was improved by 80%. The day-wise improvement was noted as:

- First day of treatment showed reduction in burning sensation, irritation, watering, pain and minimal visual improvement.
- Second day, the patient was able to recognize colours.
- Third day, his visual acuity was noted as 6/6 in right eye too.

12 cases of sap-instillation from *Calotropis* plant was recorded. The details of patient's profile and clinical profile are as given in table number:1. Burning sensation, conjunctival congestion, corneal oedema, photophobia and creaks in stroma were observed as common features. The average day of recovery was noted as 3-5 days.

Table Number: 1

Patients' profile and Clinical profile

Number of patients	: 12
Age	: 27-41
Gender	: All males
Right eye	: 9
Left eye	: 3
Both eyes	: Nil
Complaints	
Redness	: 12
Photophobia	: 12
Visual acuity	
6/6	: Nil
6/9-12	: 12
Less than 6/12	: Nil
Conjunctival congestion	: 12
Corneal oedema	: 12

Discussion: In case of abhisyanda or acute ophthalmia, treatment of accidental eye is suggested with drishti prasadana using snigdha, sheeta and madhura dravya[4,5]. Drugs of unctuous property, cold potency and sweet taste are referred to produce clarity of vision after accidental eye injuries[6]. Snigdha is mentioned beneficial for strengthening sight to eye and for healing pittaja, raktaj and vataj problems of eyes or for healing the eye ulcers[7]. Aschyotana therapy is recommended for mitigating aggravated doshas of not very strong diseases while seka is mentioned for those which are strong even[8].

Latex of *Calotropis* is acidic in nature with pH 4.2[9]. The acid causes damage by precipitating and coagulating proteins to prevent further penetration[10]. Protease is also reported in latex of *Calotropis*[11] and protease may cause corneal edema and severe exudative and fibrinous reactions[12]. *Yashtimadhu Ksheera* paka is a combination of sheeta, snigdha, madhura qualities which acts as an excellent nirvapaka yoga which acts by reducing pittoshma and rakta-pitta prasadaka.

Shah et. al. (2018) have reported the inhibitory effect of crude extract of *Glycyrrhiza glabra* in inflammation-associated corneal neovascularization[17]. Deoxyglycyrrhetol, homo-and-hetero diene homologs of diheiphthalates of *Glycyrrhiza glabra* (Yashtimadhu) is reported to exhibit anti-inflammatory, anti-allergic and antiulcer activities. Flavonoids of yashtimadhu is also investigated for anti-inflammatory, anti-tumorogenic and healing properties[13]. Antithrombin activities of glycyrrhizin and isoliquiritigenin is shown[15]. Antithrombin is a á 2-globulin member of the serpin family of protease inhibitors[16] which helps in reducing fibrinous reaction and edema. Milk is rich in fatty acids that act as vehicle[14] to bring the compounds inside the membranes.This might be the reasons as *Yashtimadhu Ksheera Seka* successfully reduced tissue damage, restored tissue integrity in managing corneal ulcer (netra vrana).

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