



## Case Report

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## Management of Furunculosis in Ayurveda- A Case Study

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### ABSTRACT

Furunculosis (Localized Otitis externa) is a condition that causes localized inflammation of external ear. Ear pain (Otagia), redness (erythema) and edema are the most common symptoms found in localized otitis externa. Clinical features of furunculosis can be analyzed under the *Lakshanas* (signs and symptoms) of *Karnashoola* (Otagia). *Karnashoola* is described as a symptom and as a separate disease entity in Ayurveda. *Acharya Sushruta* has mentioned about *Arkankura* (tender leaves of *Arka*) in the form of eardrop to treat the *Karnashoola*. This paper aims to highlight the clinical efficacy of *Arka patra* (leaves of *Calotropis gigantea* Linn.B.Rr) in *Arka* (distilled product) form as *Karnapichu* (aural pack) in the management of localized otitis externa. *Arka patra* is selected because of its *Katu rasa*, *Tikshna guna*, *Ushna veerya*, *Kaphavatahara* and *Shothahara* property. The paper makes a short discussion on the mode of action of *Arka patra Arka* in the form of *Karnapichu* based on its bio availability. The present case study highlights all the above said points. Significant changes in reduction of pain and edema were observed.

**Keywords:** Furunculosis, Localized Otitis Externa, Karnashoola, Otagia, Arka Patra Arka, Karnapichu, Aural Pack.

### INTRODUCTION

Otitis externa is a generalized condition of the skin of the external auditory canal that is characterized by general edema, pain and erythema. It can present as diffuse or localized form of inflammation of external auditory canal. Localized inflammation is due to inflammation occurred to the hair (furuncle), which are pertaining to the skin of external auditory canal. It is one of the very common conditions which is encountered in day-to-day outpatient services [1]. Edema occurring due to inflammation distracts the periosteal lining of bony canal causing extreme pain [2]. The treatment of otitis externa includes not only antibiotics and analgesics systemically but also aural packing.

The clinical features of otitis externa can be analyzed under the *Lakshanas* of *Karnashoola* explained in *Ayurveda* treatises. *Karnashoola* is the most common disease affecting all age groups. Twenty-eight *Karna Roga* (disease of ear) and ten *Karnpaligata Roga* (Ear lobule pathologies) are available in classical literature of *Ayurveda* [3]. where in *Karnashoola* is described by all ancient scholars of *Ayurveda*. *Acharya Vagbhata* has described five types of *Karnashoola*, according to vitiation of different *Dosha* [4].

There are several drugs mentioned in the management of *Karnashoola* in various classical texts, *Arka* (*Calotropis gigantea* Linn.B.Rr) is one among those. *Acharya Sushruta* has mentioned about *Arkankura* to treat *Karnashoola* [5]. Plant *Arka* is mentioned in *Samhitas* under *Vedanasthapana* (analgesic), *Shothahara* [6]. (anti-inflammatory), *Swedopaga* [7]. (sudatives) and *Vranashodhana ganas* [8]. (wound cleansers) because of its *Katu rasa* (acidic taste), *Tikshna guna* (strong nature), *Ushna veerya* (hot potency) and the *Kaphavatahara* (alleviates *Vata* and *Kapha*) property [9]. In-vitro studies about analgesic and anti-inflammatory actions of *Arka* have been done. Hence in this case, *Arka patra Arka* is used as the single drug of choice to evaluate its analgesic efficacy in the management of *Karnashoola* as a local applicant in the form of aural pack. Drug is prepared by the combination of *Jala* and with the help of *Agni*; hence it is *Laghupaki* (easily metabolize), *Vyavayi* (disseminates) and *Vikasi* (pervades) & assimilates quickly in the tissues. It is also sterile, has the ability to retain the active principles of the drug as such. So *Arka patra*

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*Arka Karnapichu* (aural packing) acts by its chemical ingredients and also mechanically by splinting action pressing the soft tissues towards the non-distended position.

## PRESENTING COMPLAINT AND MEDICAL HISTORY

Patient complains of continuous right ear pain for past two days.

### History

A 23-year-old girl from an upper middle-class family had a sudden continuous throbbing type of pain in right ear for two days. It was associated with scanty discharge from right ear and feeling of aural block because of the same.

### Clinical Findings

#### General ear examination

Pinna: Normal shape; Tragal tenderness present

Pre aural region: No abnormality detected

Post aural region: No abnormality detected

External auditory canal: A small abscess in the inferior meatal opening, Congested, presence of discharge and tenderness

Tympanic membrane: No abnormality detected

### Assessment

Symptoms were noted before and after intervention based on grading. Intensity of pain was graded with the help of Visual Analog Scale (VAS).

#### *Karnapratinaaha* (Aural blockage)

##### Grade

0 No feeling of ear blockage

1. Occasionally feeling of ear blockage
2. Day/night time feeling of ear blockage
3. Whole day feeling of ear blockage

#### *Karnasrava* (Otorrhoea)

##### Grade

- 0 No discharge
1. Scanty - if tip of swab stick is stained by the discharge
2. Moderate - if discharge remains in the EAC
3. Profuse - if discharge comes out of EAC and stained pillow during sleep

### Treatment

1. Aural toileting with Jobson's probe and cotton
2. Aural packing with *Arka patra Arka* for 5 days

*Arka patra Arka* aural pack was kept for 48 hours, the canal was dry mopped and repacked. On the sixth day, pack was removed.

ADVERSE REACTIONS: No adverse reactions found during the course of treatments.

## RESULT

When we compare the effect of the *Karnapichu* on *Karnashoola*, *Karnapratinaaha*, *Karnasrava* and VAS before and after treatment, remarkable changes were noted in the grading of symptoms and which shows there were significant reductions in chief complaint and associated symptoms also.

**Table 1:** Showing result of treatment

Sl no	Symptoms	Before Treatment (0 <sup>th</sup> day)	After Treatment (6 <sup>th</sup> day)
1.	<i>Karnashoola</i> (Otalgia)-VAS	7	2
2.	<i>Karnapratinaaha</i> (Aural blockage)	2	0
3.	<i>Karnasrava</i> (Otorrhoea)	2	0



**Figure 1:** 0<sup>th</sup> day (Before Treatment)



**Figure 2:** 6<sup>th</sup> day (After Treatment)

## DISCUSSION

Localized otitis externa is a frequent disease mostly caused by bacteria and triggered by moisture. *Karnashoola* is described as a symptom and as a separate disease entity in Ayurveda, can be considered with the features of otitis externa. *Karnashoola* is the most common disease affecting all age groups; they affect people's quality of life and ability to participate in work, family, and social events. *Shoola* (pain) is mainly due to *Prakopa* (vitiation) of *Vata dosha*, either due to its own *Nidana sevana* (causative factors) or due to *Avarana* (encapsulation). In this case, it can be considered as *Avaranajanya Vatakopa* along with other *Vata* aggravating factors, which explained in *Samanya Karnaroga Nidana*.

Due to the *Katu* and *Tikta Rasa*, along with *Kaphanisaraka*, *Shothahara* and *Krimihara* properties of *Arkapatra*, could be the reason for

reduction of pain and associated symptoms, as the main aim of treatment of otitis externa is to control edema and pain. Also, the extract of leaves contains Calotropin, Calotoxin, Mudurool and bitter principles, which were reported to possess anti-inflammatory, anesthetic and antibacterial activity, which would have caused reduction in inflammation of ear canal thereby reducing the pain.

### Mode of Action

On account of the specialty of the type of preparation, *Arka* possesses *Sukshma* (subtle), *Vyavayi*, *Vikasi guna*, which helps in the efficient transport of the properties of drug to the site of action. Also due to less viscosity of *Arka*, absorption would be more as the layers of meatal skin are readily permeable with lesser viscosity. *Arka* penetrates deep into the tissue of the meatal skin and gets absorbed into the bloodstream and thereby immediately reduces the local inflammation. So, aural packing impregnated with topical preparation is used to decrease pain and edema. Topical medications will not be able to penetrate an edematous canal wall, a problem that can be overcome by the insertion of an ear wick. Hence insertion of wick is a better topical therapy of otitis externa than instilling ear drops. Probable mode of action of *Arka patra Arka* aural pack in each symptom as follows:

*Shoola*- Due to pathological changes, epithelial invasion of microbes and inflammation by local causes in auditory canal leads to pain and edema. The aqueous extract of leaves of *Calotropis gigantea* Linn.B.Rr was reported to possess anti-inflammatory activity, which would have caused reduction in inflammation of ear canal thereby reducing the pain and edema.<sup>10</sup>

*Pratinaha*- The edema occurred in ear canal can be considered due to *Kapha Avrita Vayu*. Due to *Shothahara guna* of *Arkapatra* which could act on the walls of ear canal thereby helps for reduction of edema and thus removes the blockage.

*Srava*- Scanty and watery discharge can be due to inflammatory changes happened in ear canal, as the *Roopa* of *Vataja Karnashoola* and white thick discharge is the *Roopa* of *Kaphaja Karnashoola*. *Shoshana Shakti* (dehydration) by *Ruksha guna* (dryness) of *Arka patra* along with its anti-inflammatory action together could absorb the discharge in auditory canal, and pacifies the *Kapha Dosha*, thus reduces pain also.

### Patient Perspective

As informed by patient, complains of ear ache has reduced, and also the edema with associated symptoms got resolved.

### CONCLUSION

*Karnashoola* is a *Vata* predominant disease which can be due to *Kevala vata kopa* along with *Avarana* of with other *Dosha*. The clinical features of otitis externa can be considered with the *Lakshanas* of *Karnashoola*. Due to the *Katu* and *Tikta Rasa*, along with *Kaphanisaraka*, *Krimihara* and *Shothahara* properties of *Arka patra*, pain and edema with associated symptoms may be reduced. The extract of leaves of *Calotropis gigantea* Linn.B.Rr, have been reported to have anti-inflammatory, anesthetic, and antibacterial activity, resulting in a reduction in ear canal inflammation, pain and edema. Also, *Arka patra Arka* aural pack penetrates deep into the meatal skin

tissue by its mechanical action and is absorbed into the bloodstream, reducing local inflammation promptly.

### Informed Consent

The purpose and nature of the procedure to be carried out and the potential risk and benefits were explained to the patient's party in detail. Thereafter written informed consent was taken before starting the treatments. Patient's party gave informed consent for publication.

### Scope For Further Study

Since the study has shown positive results, it is recommended that it can be carried out on a large number of patients with longer duration to evaluate and analyze the results.

Based on clinical trial, a Standard Operative Procedure (SOP) can also be generated for further management of Otagia.

### Conflict of Interest

None declared.

### Financial support

None declared.

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