



Case Study

## AYURVEDIC MANAGEMENT OF TRAUMATIC TYMPANIC MEMBRANE PERFORATION

Tosmy Tomy Koovackal\*, Mira Krishnan.M, Yadukrishnan.S

Assistant Professor, Department of Shalakya tantra, Ahalia Ayurveda Medical College, Palakkad, Kerala, India.

### Article info

#### Article History:

Received: 21-03-2024

Accepted: 11-04-2024

Published: 07-05-2024

#### KEYWORDS:

Traumatic tympanic membrane perforations, *Karnalepa*, *Karnapichu*, *Murivenna*.

### ABSTRACT


Traumatic tympanic membrane perforations are common in otolaryngological practice. These perforations can be due to direct penetrating trauma, infections or due to eustachian tube disorders. These perforations can lead to reversible high frequency deafness, tinnitus and vertigo. Small perforations heal spontaneously within three months after the injury while large perforations are treated with myringoplasty. This is a case report of 35 year old female patient who presented to Shalakya OPD with complaints of sudden onset of earache and reduced clarity of hearing in left ear, since 7 days. The tympanic membrane was ruptured. While comparing the size of perforation relative to circumference of the tympanic membrane, it was observed to be a large sized perforation affecting 50% of tympanic membrane. Large sized perforations are usually considered non-healing as it exerts influence on the malleus and umbo at tympanic membrane insertion and would interrupt the sound conducting mechanism. She was managed conservatively with Ayurveda treatment. *Karnalepa* applied over the pre auricular and mastoid region makes the healing fast and effective. *Karnapichu*, the modified form of *Karnapoorana* provides a much larger skin contact time with controlled release of drugs. The case report shows the effect of local and systemic medication in the form of *Murivenna karnapichu*. The healing of tympanic membrane occurred within one month of follow up.

### INTRODUCTION

The tympanic membrane separates the external ear from the middle ear and functionally it is a part of middle ear. Tympano-ossicular system is involved in sound amplification and transmission. Total area of tympanic membrane is about 90mm<sup>2</sup> with an effective vibrating area of 55mm<sup>2</sup>. There are two types of tympanic membrane perforations – central and marginal. Central perforation is found in pars tensa and surrounded all around by tympanic membrane. It is usually seen in tubo-tympanic otitis media, whereas marginal perforation is not surrounded all around by tympanic membrane. It is usually associated with secondary acquired cholesteatoma. Tympanic membrane perforation is frequently faced in otolaryngological practice.

These perforations can be due to direct penetrating trauma, infections or due to eustachian tube disorders. These perforations can lead to reversible high frequency deafness, tinnitus and vertigo. In addition, it can increase the risk of middle ear infections or otitis media. Animal studies have demonstrated that tympanic membrane perforation heal by means of epithelial migration which starts from the outer epithelial layer, with later healing of the lamina propria and the mucosal layer<sup>[1]</sup>. The epithelial regeneration occurs near the annulus and the handle of malleus<sup>[2]</sup>. Small perforations spontaneously heal within three months and in meantime patient might experience uncomfortable symptoms, while large perforations are treated with myringoplasty.

In Ayurveda classics, there is no direct reference to traumatic tympanic membrane perforations. But different treatment modalities have been told in Ayurveda for *Vranachikitsa*. Drugs having *Shodhana* and *Ropana* qualities are essential for healing. Acharya Susruta has mentioned *Shashti upakramas* (60 modalities of wound management) and *Saptaupakramas* for complete management of *Vrana*

Access this article online	
Quick Response Code	
	<a href="https://doi.org/10.47070/ayushdhara.v11i2.1509">https://doi.org/10.47070/ayushdhara.v11i2.1509</a>
	Published by Mahadev Publications (Regd.) publication licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0)

(ulcer). Here the 35 year old female patient suffering from auricular symptoms from last 7 days was treated with *Karnalepa* and *Karnapichu* along with internal medication. *Rasna jambeera karna lepa* was applied warm, thick and thus it remained moist for a long time. *Lepa* was applied in upward direction over the pre auricular and mastoid region and reverse direction as that of hair over the skin to make the action of application fast and effective<sup>[3]</sup>. *Karnapichu*, the modified form of *Karnapoorana* provides a much larger skin contact time with controlled release of drugs. *Taila* being the one in *Shashti upakramas* is beneficial for controlling the pain and healing of wound<sup>[4]</sup>. So here *Murivenna karnapichu* was done to restore membrane integrity and sound transmission. The local application of *Murivenna karna pichu* to the freshened edges of perforation promoted complete restoration within a month.

### Case Report

A 35 year old female patient complaining sudden onset of earache and reduced clarity of hearing in left ear since 7 days with history of hit by ball over left ear region and mechanical trauma to left ear visited the OPD of Ahalia Ayurveda Medical College, Palakkad. There was no history of any other trauma to ear like history of assault or insertion of any objects into the ear etc.

### Examination of the Patient

On examination both pinnae appeared normal. Otoscopic Examination of the left ear shows large central perforation (perforation estimated to comprise 50% or more of the entire tympanic membrane) in the pars tensa with irregular congested margins occupying the antero-inferior and posterior-inferior quadrants with hemorrhagic lesions with irregular edges (Fig.1). In Rinne's test, it was found that BC>AC in left ear, representing conductive deafness, whereas the right ear was normal. Weber's test also reveals conductive deafness of the left ear. After careful examination of the patient and his history, the patient was diagnosed with Traumatic Tympanic Membrane Perforation.

### Procedures Administered to the Patient

Patient underwent both internal and external treatments as outpatient from 19<sup>th</sup> June 2023. Patient was administered oral medicines such as *Saribhadi kashaya*, *Pathyakshadhathryadi kashaya* and *Chyavanaprasam*. (Table 1) External therapies administered were *Karna lepam* with *Rasna jambeera* and *Karna Pichu* with *Murivenna*. (Table 2)

### RESULTS

- The dimension of perforation was reduced after starting the treatments.
- The perforation was closed on day 15 (Fig.2). The

pain reduced considerably in the left ear.

- The perforation was totally closed on day 30 (Fig.3) and there was no pain.
- Patient's hearing was restored and tympanic membrane was clear and no mark of perforation was found.

### DISCUSSION

Tympanic membrane perforations can be due to direct penetrating trauma, infections or due to eustachian tube disorders. These perforations can lead to reversible high frequency deafness, tinnitus and vertigo. The present case report shows large central perforation estimated to comprise 50% of the entire tympanic membrane. Large central perforations are treated with myringoplasty. In Ayurveda classics, different treatment modalities have been told for *Vranachikitsa*. Acharya Susruta has mentioned *Shashtiupakramas* and *Saptaupakramas* for complete management of *Vrana*.

The patient was given *Saribhadi kashaya*, *Pathyakshadhathryadi kashaya*, and *Chyavanaprasam* as internal medications. *Saribhadi kashaya* is indicated in *Pitha* and *Raktha* vitiation (alleviate *Pitha* and *Raktha*)<sup>[5]</sup>. *Pathyakshadhathryadi kashaya* is indicated in *Karna shula* (earache).<sup>[6]</sup> *Chyavana-prasam* is *Rasayana* (rejuvenating) and provide *Indriya bala* (provide strength to senses)<sup>[7]</sup>.

In *Shashti upakrama*, *Lepa* (topical application of paste of drugs) is indicated in *Uthitha matra shophya* (acute inflammatory conditions) and *Ugraruja vrana* (wound associated with severe pain)<sup>[8]</sup>. Here, *Karna lepa* was done with *Rasnadi churna* along with *Jambeera svarasa* (lemon juice). *Rasnadi churna* has *Ama nirharana* property<sup>[9]</sup>. *Jambeera svarasa* is *Laghu* (light), *Theekshna* (penetrating) and *Kapha vata naashana* (alleviate *Kapha* and *Vata*)<sup>[10]</sup>. *Pichu* (application of cotton pad soaked in oil over a specific area) comes under *Murdhni taila* (different methods of oil application over head) and it provides *Indriya prasada* (brings about clarity of senses) and *Svara hanu murdha balam* (give strength to the voice, lower jaw and head)<sup>[11]</sup>. In this case report, *Karna pichu* was done with *Murivenna*. *Taila* being the one in *Shashti upakramas* is beneficial for controlling the pain and healing of wound. *Murivenna* is indicated in *Kshatha* (injury) and is having *Vedanasthapaka* (analgesic) and *Shothagna* (anti-inflammatory) properties which promotes fast recovery from wounds<sup>[12]</sup>.

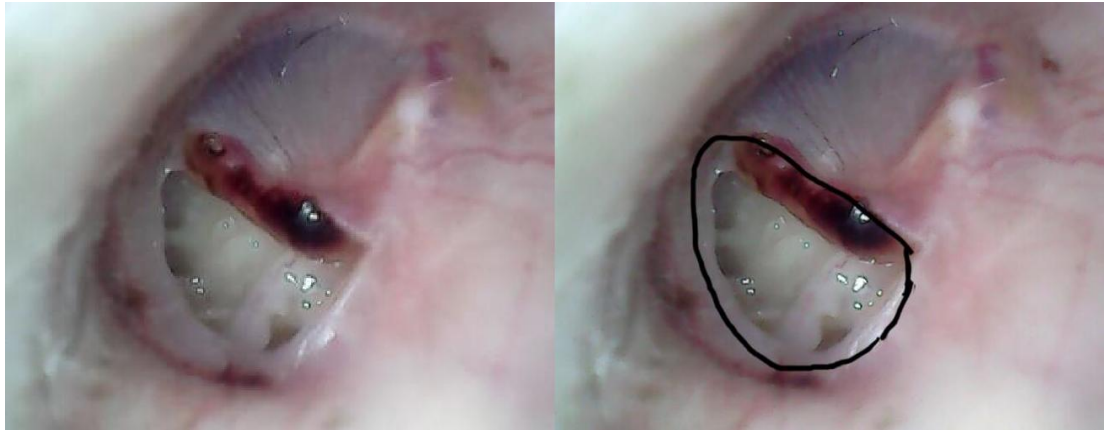
Internal medication and OPD level treatments were done for 2 months. The perforation was totally closed within one month of follow up. *Karna lepa* helped in alleviating inflammatory changes and congestion of tympanic membrane. *Karnapichu*, the modified form of *Karnapoorana* provides a much

larger skin contact time with controlled release of drugs. This might have helped in spontaneous healing of tympanic membrane within one month. *Karna pichu* was continued for one more month which helped in restoration of patient's hearing.

**CONCLUSION**

Tympanic membrane perforations can be due to direct penetrating trauma, infections or due to eustachian tube disorders. Large sized perforations are usually considered non-healing as it exerts influence on the malleus and umbo at tympanic membrane

insertion and would interrupt the sound conducting mechanism. Here the patient was managed conservatively with Ayurveda treatment. In Ayurveda classics, there is no direct reference to traumatic tympanic membrane perforations. But different treatment modalities have been told in Ayurveda for *Vranachikitsa*. By administering local and systemic medications which are *Raktha pitha hara*, *Vedanasthapaka*, *Shothagna* and *Rasayana*, the perforation was totally closed and patient's hearing was restored.



**Fig 1 Day 1**



**Fig 2 Day 15**



**Fig 3 Day 30**

**Table 1: Oral Medicines**

Oral Medicines	Dosage	Time	Duration
<i>Saribhadi kashaya</i>	7.5 ml	6am and 6pm	19/6/2023 to 13/7/2023
<i>Pathyakshadhathryadi kashaya</i>	7.5 ml	6am and 6pm	19/6/2023 to 13/7/2023
<i>Chyavanaprasam</i>	1 Tsp	Twice a day after food	13/7/2023 to 13/8/2023

**Table 2: External therapies Treatment**

External Treatment	Medicine	Duration
<i>Karna lepam</i>	<i>Rasna jambeera</i>	19/6/2023 to 13/7/2023
<i>Karna Pichu</i>	<i>Murivenna</i>	13/7/2023 to 13/8/2023

**REFERENCES**

- Araujo MM, Murashima AA, Alves VM, Jamur MC, Hyppolito MA. Spontaneous healing of the tympanic membrane after traumatic perforations in rats. *Braz J Otorhinolaryngol.* 2014; 80: 330-338. [PMC free article] [PubMed] [Google Scholar]
- Wang WQ, Wang ZM, Chi FL. Spontaneous healing of various tympanic membrane in the rat. *Acta Otolaryngol.* 2004; 124: 1141-1144.
- Sarangadara, Sarangadara samhitha, Chaukhamba orientalia, Varanasi, Reprint edition: 2009, p315.
- Kawiraj Ambikadutta Shastri, Chikitsa sthanam, [1/65-67], Sansthan, Varanasi.
- Ahinava Vagbhatan Ananthapurath Moothakoyi thamburan, Aravattazhikathu K.V. Krishnan vaidyan, Anekkaleelil S. Gopalapilla, Sahasrayoga, vidyarambham publishers, 28<sup>th</sup> edition, Rakthapitham, page no: 59
- Sarangadara translated in English by Prof. K.R. Srikantha murthy, Sarangadara samhitha, Chaukhamba orientalia, reprint edition: 2009, Madhyama khanda, Chapter 2, page no:73
- Ahinava vagbhatan Ananthapurath Moothakoyi thamburan, Aravattazhikathu K.V. Krishnan vaidyan, Anekkaleelil S. Gopalapilla, Sahasrayoga, vidyarambham publishers, 28<sup>th</sup> edition, Rakthapitham, page no: 218
- Vaidya Yadavji trikamji Acharya, Narayan Ram Acharya kavyatirtha, Susrutha samhitha of Susrutha, Chaukhamba Sanskrit sansthan, edition reprint - 2012, page no: 698
- Ahinava vagbhatan Ananthapurath Moothakoyi thamburan, Aravattazhikathu K.V. Krishnan vaidyan, Anekkaleelil S. Gopalapilla, Sahasrayoga, vidyarambham publishers, 28<sup>th</sup> edition, Churna yoga, Page no:186
- Dr. Gyanendra pande, Dravyaguna vijnana, volume 2, Chowkhamba krishnadas academy, reprint 004, page no: 710
- T.Sreekumar, Ashtanga hridaya, Suthra sthana, volume 2, Harisree publications, 6<sup>th</sup> edition, page no :132-133
- The Ayurveda Formulary of India, Government of India, Ministry of Health & family welfare, Department of Indian System of medicine & Homeopathy, New Delhi, 1<sup>st</sup> edition, 2011.

**Cite this article as:**

Tosmy Tomy Koovackal, Mira Krishnan.M, Yadukrishnan.S. Ayurvedic Management of Traumatic Tympanic Membrane Perforation. *AYUSHDHARA*, 2024;11(2):82-85.

<https://doi.org/10.47070/ayushdhara.v11i2.1509>

**Source of support: Nil, Conflict of interest: None Declared**

**\*Address for correspondence**

**Dr. Tosmy Tomy Koovackal**  
Assistant Professor,  
Department of Shalaky Tantra,  
Ahalia Ayurveda Medical  
College. Palakkad, Kerala.  
Email:

[tosmytomy14@gmail.com](mailto:tosmytomy14@gmail.com)

Disclaimer: AYUSHDHARA is solely owned by Mahadev Publications - A non-profit publications, dedicated to publish quality research, while every effort has been taken to verify the accuracy of the content published in our Journal. AYUSHDHARA cannot accept any responsibility or liability for the articles content which are published. The views expressed in articles by our contributing authors are not necessarily those of AYUSHDHARA editor or editorial board members.