

Role of Honey in Post operative Tonsillectomy Cases

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ABSTRACT

Introduction: Honey has been used since ancient times for healing of skin wounds and preventing infections. The aim of this study is to evaluate the effect of honey on pain, infection and wound healing in post operative tonsillectomy cases.

Materials and Methods: 40 patients planned for tonsillectomy under general anaesthesia were taken up in the study. 20 patients in the study group were given oral honey post operatively along with other medication whereas remaining 20 patients in control group were not given oral honey. Patients were evaluated post operatively after 1, 2, 7 and 14 days for post operative pain, healing of tonsillar fossa wound, post operative bleed, fever, recovery time, patient satisfaction and other criterias.

Results: The results showed that pain was much lesser in study group. There was better wound healing, shorter recovery time with greater patient satisfaction. There were lesser post operative complications like fever with lesser need for intramuscular analgesics. No specific side effects of honey were noted.

Conclusion: So it can be concluded that honey can be considered as a complementary medicine in post operative tonsillectomy cases.

Keywords: Fever; Honey; Post operative pain; Tonsillectomy; Wound healing

INTRODUCTION

Tonsillectomy is one of the most common ENT surgeries performed worldwide even in adults. Pain and wound infection are the most common complications in tonsillectomy.¹ Pain occurs due to mechanical and thermal injuries to the tonsillar fossa during surgery.² This delays the recovery and hospitalisation due to fever, pain and infection.³

Controlling post operative tonsillectomy pain is a challenging task. Various studies have been done for pain management but not much success achieved.⁴ According to a study antibiotics alone are not effective in reducing pain or need for analgesics nor have a affect on recovery time.⁵ Even the use of analgesics and steroids don't cause significant fast relief.⁶

Honey is a everyday household product which is easily accessible, non expensive and with no specific side effects. Its role in wound healing has been studied for long. Studies have shown honey to heal chronic wounds and ulcers.⁷ Honey has also been found to be effective on various types of bacteria.⁸ Honey is said to have antioxidant, antibacteri-

al and anti-inflammatory activity. In spite of its potential it has remained largely underestimated and unexploited. This study aims to study the effect of honey on post operative pain, wound healing and prevention of infection in post operative tonsillectomy cases.

MATERIALS AND METHODS

This prospective randomized case control study was conducted in Department of ENT of our medical college and hospital from August 2011 to July 2012. 40 patients scheduled for tonsillectomy under general anaesthesia, aged above 18 years were enrolled in this study after obtaining written consent from the patients. The approval of the local ethics committee was taken. Exclusion criteria were patients with allergy to honey, patients with diabetes, those with bleeding disorders, acute infection and those who disliked to take honey. All the patients were operated by the same surgeon and anaesthesia was given by the same anaesthetist performing this study. All the patients selected were of indication for bilateral tonsillectomy.

The patients were randomized alternatively into study and control group. All the patients in both groups underwent tonsillectomy by cold dissection method and haemostasis was done using bipolar cautery. In all the patients endotracheal intubation and anaesthesia methods were same. All the patients were kept nil orally for first 6 hours after surgery during which period they were put on same intra venous antibiotics, analgesics and fluids. After 6 hours after the patient was fully awake and was able to take orally the intra venous medication was stopped. 20 patients taken in study group were then given 5ml of locally or commercially available honey orally every 4 hourly and the patient was asked to swallow slowly over few minutes. Remaining 20 patients in

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control group were not given honey. All the patients in both groups were put on same oral antibiotics, analgesics and povidone iodine hydrogen peroxide gargles. The above treatment was given for 2 weeks post operatively. All the patients were discharged 48 hours after surgery and were asked to come for regular follow up.

The patients were assessed post operatively after 24 hours, 48 hours, 1 week and 2 weeks after surgery. The assessment points were –

1. The patient satisfaction was assessed according to LIKERT SCALE as 1 – completely comfortable, 2 – very comfortable, 3 – slightly comfortable, 4 – uncomfortable and 5 – very uncomfortable at each assessment.
2. The patients were assessed for pain in throat at each assessment.
3. The patients were assessed for fever, bleeding from operated site, burning sensation in throat at each assessment.
4. The tonsillar fossa was examined for degree of epithelialization (wound healing) at each assessment.
5. The patients were assessed for need for intra muscular analgesics during first 48 hours post operatively.
6. The patients in study group were enquired about any systemic side effect or complication on taking honey.

RESULTS

Forty patients who gave consent were enrolled in this study. All the patients underwent tonsillectomy under general anaesthesia. Data was collected on all patients. All the patients

Age Group (years)	Male	Female	Total
18 - 30	10	13	23
31 - 50	6	8	14
51 plus	1	2	3
Total	17	23	40

Table-1: Age and Sex wise distribution

were above the age of 18 years. The majority of patients were in the younger age group (58%). 3 patients were above the age of 50 years. There was a slight female predominance among the patients undergoing tonsillectomy 1:1.35. (Table 1)

Regarding the indication for tonsillectomy, majority of patients had recurrent tonsillitis (85%). The other indication was obstructive sleep apnoea (OSA) seen in 6 patients. (Figure 1)

20 patients taken in study group were given 5ml of locally or commercially available honey orally every 4 hourly and the patient was asked to swallow slowly over few minutes. Remaining 20 patients in control group were not given honey. All the patients in both groups were put on same oral antibiotics, analgesics and povidone iodine hydrogen peroxide gargles. The above treatment was given for 2 weeks post operatively. The patients were assessed post operatively after 24 hours, 48 hours, 1 week and 2 weeks after surgery.

Post operative throat pain was almost same in both groups at the end of 24 hours. It was lesser in study group after 48 hours and after 1 week post operatively. After 48 hours only 2 patients (10%) had severe pain in the study group using honey as compared to 5 patients (25%) in control group. Pain was almost same in both groups at the end of 2 weeks post operatively. (Table 2)

Regarding need for intramuscular analgesics during hospital stay post operatively it was calculated from the time patient started taking orally (6 hours after surgery). It was found the need was almost same between 6 to 24 hours post operatively in both groups. But the need for intramuscular analgesics was much lesser in study group using honey (10%) as compared to control group (30%). (Figure 2)

Wound epithelialization was graded according to classification given by Ozlugedik.⁹ It was found that wound healing was much faster in study group using honey rather than control group. 5 patients (25%) and 15 patients (75%) had complete wound healing at the end of 1 week and 2 weeks respectively

Pain	24 hours post op		48 hours post op		1 week post op		2 weeks post op	
	Study group	Control group	Study group	Control group	Study group	Control group	Study group	Control group
No pain	0	0	0	0	12	9	20	19
Mild pain (occasional)	5	5	8	6	8	8	0	1
Moderate pain (tolerable)	10	9	10	9	0	3	0	0
Severe pain (intolerable)	5	6	2	5	0	0	0	0

Table-2: Post operative throat pain in both groups

Wound epithelialization Staging	24 hours post op		48 hours post op		1 week post op		2 weeks post op	
	Study group	Control group	Study group	Control group	Study group	Control group	Study group	Control group
Stage I (No epithelialization)	16	17	11	15	1	3	0	0
Stage II (<30% epithelialization)	2	2	4	3	4	6	0	0
Stage III (30 – 75% epithelialization)	2	1	4	2	5	6	1	3
Stage IV (>75% epithelialization)	0	0	1	0	5	3	4	5
Stage V (complete epithelialization)	0	0	0	0	5	2	15	12

Table-3: Post operative wound healing in both groups

Complication	Upto 24 hours post op		24 - 48 hours post op	
	Study group	Control group	Study group	Control group
Post op bleed	0	0	0	0
Fever	3	4	0	3

Table-4: Complications due to tonsillectomy

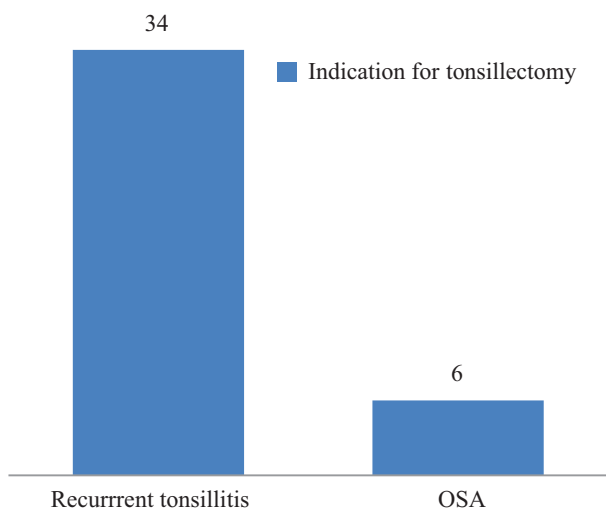


Figure-1: Indication for tonsillectomy

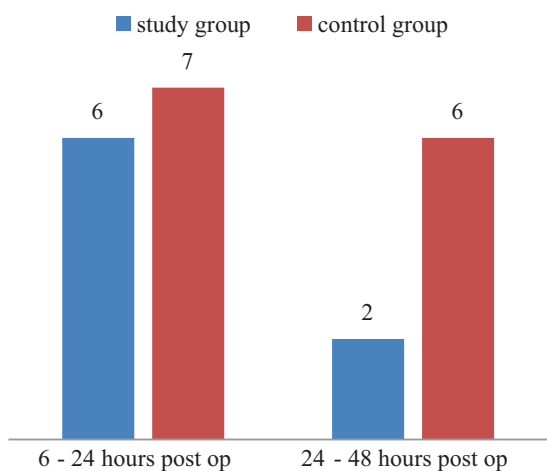


Figure-2: Need for intra muscular (IM) analgesics

in study group as compared to only 2 patients (10%) and 12 patients (60%) in control group respectively. (Table 3) Regarding complications due to tonsillectomy, none of the patients in both groups had any incidence of post operative bleeding. The incidence of fever was much lesser in study group at the end of 48 hours post operatively. (Table 4) Patient satisfaction was higher in study group using honey as compared to control group at the end of 48 hours and 1 week. It was almost same at the end of 2 weeks. Regarding side effects of honey no side effect or allergic reaction to honey was noted in the study group using honey.

DISCUSSION

The efficacy of honey in reducing post operative morbid-

ity after tonsillectomy was investigated in this study. This study aimed to study the role of honey in controlling pain, infection and other complications and fastening the process of wound healing in post operative tonsillectomy cases. The study also aimed to study any side effects of honey if any. We have used commercially or locally available honey for this purpose. Our study included only adult patients to remove any error while noting subjective results like post operative pain and patient satisfaction.

Tonsillectomy is one of the most common ENT surgeries performed worldwide including India since ages. The most common indications of tonsillectomy according to literature available are recurrent tonsillitis, obstructive sleep apnoea, tonsillar abscess and lymphoma.¹⁰ In our study also we found recurrent tonsillitis to be the most common indication followed by obstructive sleep apnoea (Figure 1). Regarding the incidence of tonsillitis according to Thorp et al the incidence is more common in females than in males and in younger age group.¹¹ Similar results were obtained in our study showing female predominance and more incidence in younger age group (Table 1). The most common morbidities after tonsillectomy are bleeding, pain, oedema and poor oral intake.¹² Controlling pain post tonsillectomy is a challenging task. Pain after tonsillectomy is due to inflammation, nerve irritation and pharyngeal spasm.¹³ According to a study no analgesic is enough to provide analgesia after tonsillectomy.¹⁴ Dhiwakar et al in a study showed that antibiotics alone have no role in reducing pain or need for analgesic or any effect on recovery time.⁵

Honey is easily accessible, non expensive and without any specific side effects. It was used to treat infected wounds as long as 2000 years back. Egyptians since ages used honey for corneal and conjunctival inflammations and burns.⁹ The antibacterial property of honey was first recognised by Van ketel in 1895.¹⁵ The anti inflammatory activity of honey has been studied in various clinical trials where it decreased severity of mucositis in post radiotherapy cases,¹⁶ in treatment of gingivitis¹⁷ and in ophthalmological inflammations.¹⁸ Pain post tonsillectomy is due to mechanical and thermal injuries to tonsillar fossa leading to inflammation. Studies have shown that wounds infected with staphylococcus aureus are rendered sterile by honey.¹⁹ Tonsillar fossa heals as open wound post tonsillectomy and it has been proved that honey accelerates wound recovery and decreases post operative pain.²⁰ In a study honey has been found to be inhibitory to both gram positive and gram negative bacteria and to both aerobes and anaerobes including staphylococcus aureus and pseudomonas.²¹ Honey decreases prostaglandin E2 and alpha 2, thromboxane in blood leading to pain relief.⁹ It also contains glucose and hydrogen peroxide and a acidic pH which help in fighting infection and prevent infection.²¹ Similarly in our study we obtained much less post operative pain at the end of 48 hours and 1 week (Table 2) and less need for intramuscular analgesics in patients who were given honey post operatively (Figure 2). Also the incidence

of post operative infection was much lesser in study group using honey (Table 4).

Honey's role in wound debridement has also been studied.²² Honey increases the activity of enzyme plasmin which has a role in tissue repair by inhibiting formation of plasminogen activating factor.²³ It also stimulates the release of cytokines, tumour necrosis factor and interleukins from monocytes which play a role in healing and tissue repair.²⁴ In our study also we obtained faster wound epithelialization in study group using honey (Table 3).

The side effects and allergic reaction to honey are rare.²⁵ It can cause a stinging pain due to acidic pH.²⁵ It was also found in a study that there is no permanent resistance to honey.²⁶ Honey though sometimes contains spores of clostridia which can cause botulism. In our study no side effects of honey in patients were noted in study group.

CONCLUSION

Honey is an ancient remedy which is being rediscovered for post operative management of tonsillectomy cases. Honey with anti inflammatory effect can reduce post operative pain. Oral administration of honey post operatively increases wound healing, decreases infection because of its antimicrobial activity without causing any major side effects leading to greater patient satisfaction. It is also easily accessible and inexpensive.

So we can conclude that honey is effective and can be considered as a complimentary medicine alongside other modern pharmacological drugs with regard to post operative tonsillectomy cases. More research is needed to study and compare the effects of various sub types of honey available and to study the use of honey in other post operative surgeries and in other acute inflammatory diseases of throat.

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