

IN THE NAME OF GOD

Post Tonsillectomy Pain

Presented by:

Dr.Z.Sarafraz

Otolaryngologist

Post Tonsillectomy Pain



Introduction

- Tonsillectomy is a common surgery in children
- Post tonsillectomy pain is an important concern.
- Duration & severity of pain depend on:
 - The surgical technique
 - Antibiotic & corticosteroid use
 - preemptive and postoperative pain management
 - patient's perception of pain

Surgical indication for tonsillectomy

Infection

Recurrent, acute tonsillitis (more than 6 episodes per year or 3 episodes per year for 2 years or longer)

Recurrent acute tonsillitis associated with other conditions:

Cardiac valvular disease associated with recurrent streptococcal tonsillitis

Recurrent febrile seizures

Chronic tonsillitis that is unresponsive to medical therapy and is associated with:

Halitosis

Persistent sore throat

Tender cervical adenitis

Streptococcal carrier state unresponsive to medical therapy

Peritonsillar abscess

Tonsillitis associated with abscessed cervical nodes

Mononucleosis with severely obstructing tonsils that is unresponsive to medical therapy

Surgical indication for tonsillectomy

Obstruction

Excessive snoring and chronic mouth-breathing

Obstructive sleep apnea or sleep disturbances

Adenotonsillar hypertrophy associated with:

- Cor pulmonale

- Failure to thrive

- Dysphagia

- Speech abnormalities

- Craniofacial growth abnormalities

- Occlusion abnormalities

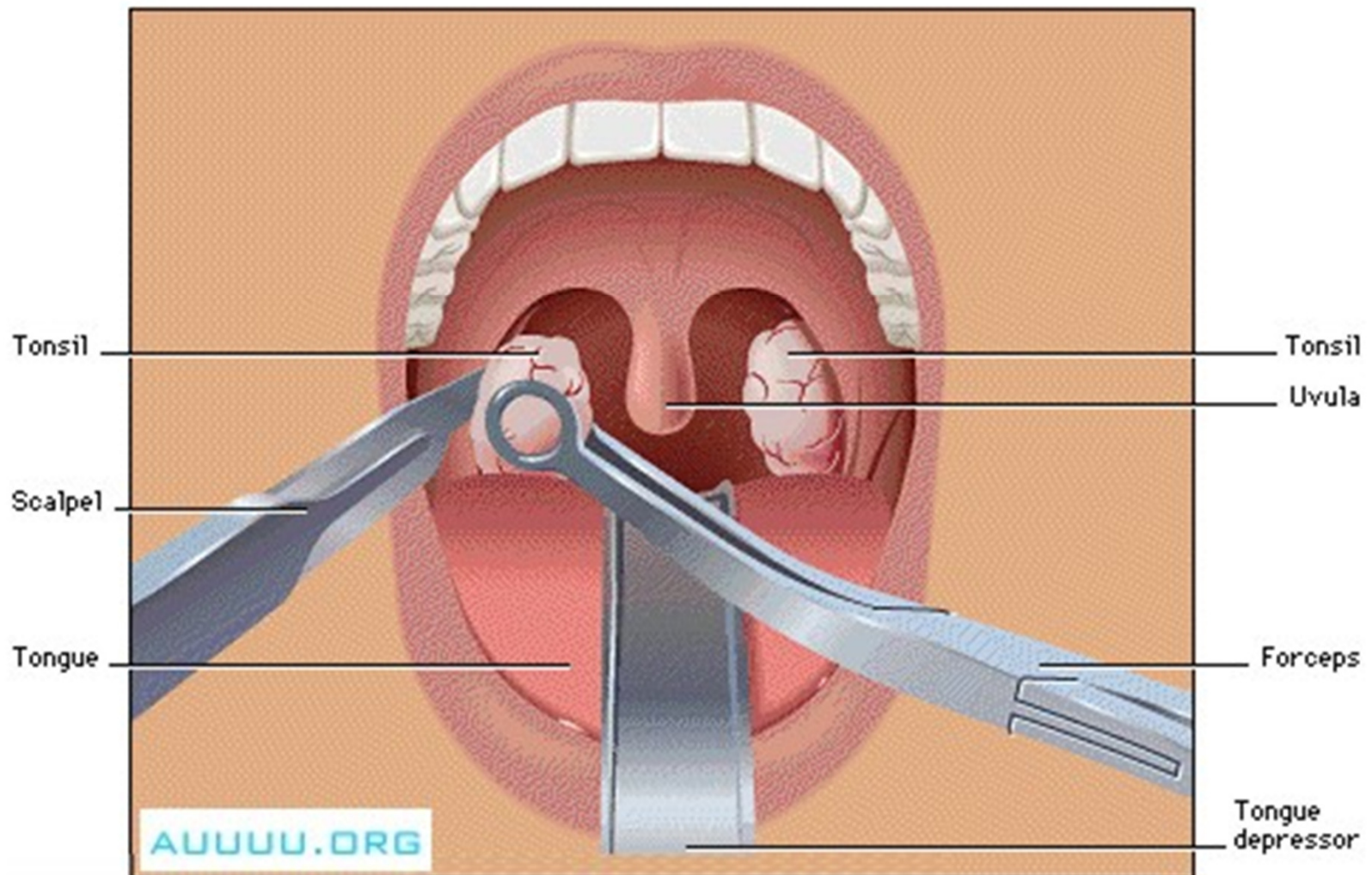
Other

Suspected neoplasia—asymmetric tonsillar hypertrophy

Multiple tonsillectomy techniques

- sharp dissection
- Electrocauterization
- Lasers(KTP,CO₂)
- Coblation
- microdebrider

Introduction



Introduction

- Sharp dissection slightly less postoperative pain
- Electrocautery less in intraoperative blood loss

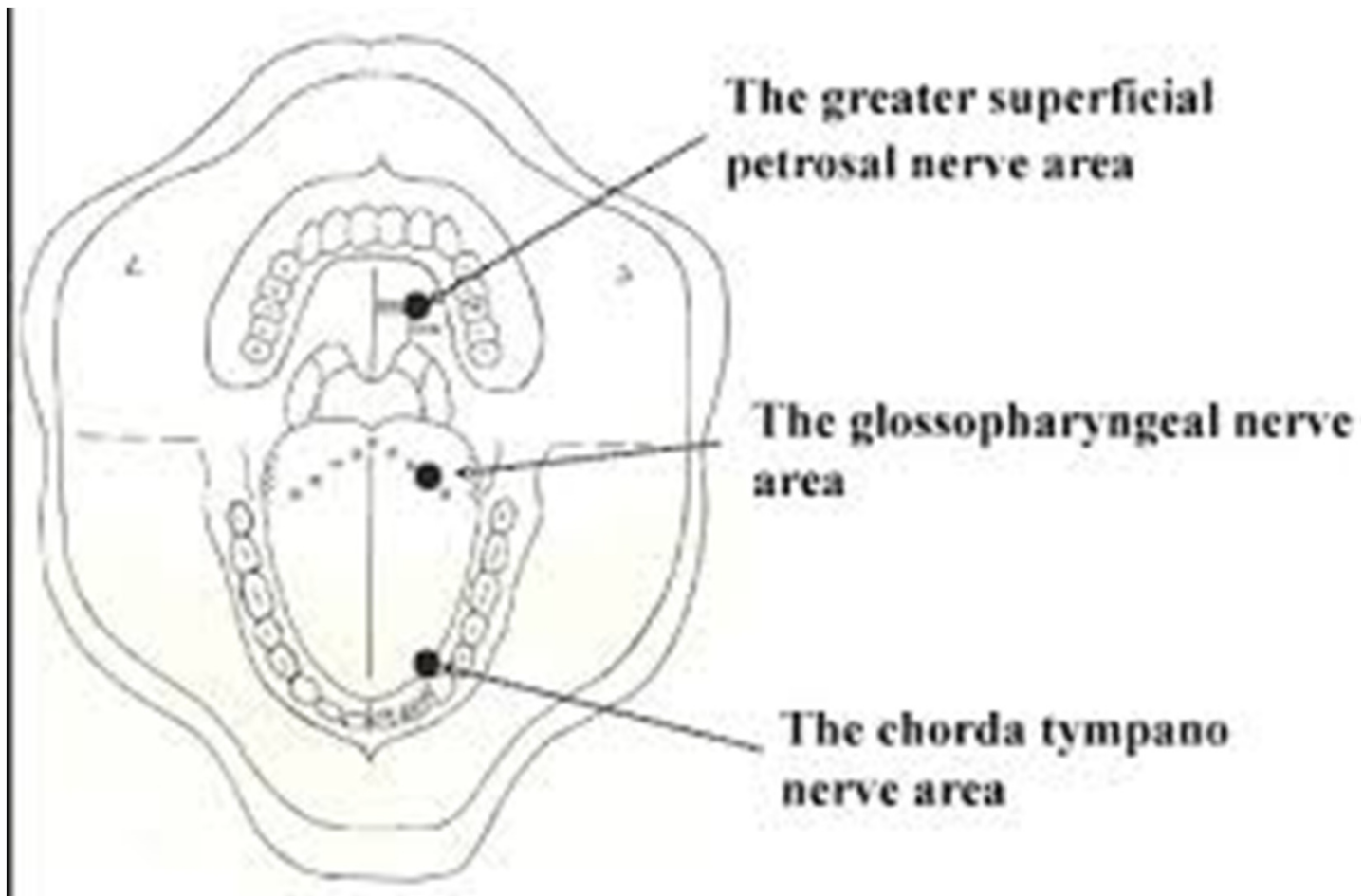
But more postoperative pain

- Sub total tonsillectomy less postoperative pain but more recurrence rate

Tonsillectomy complications

- Postoperative Hemorrhage
- Airway Obstruction and Pulmonary Edema
- Velopharyngeal Insufficiency
- Nasopharyngeal Stenosis
- Cervical Spine Complications
- pain

Tonsillar innervation



Solitary nucleus

Nucleus ambiguus

Inferior salivary nucleus

Glossopharyngeal nerve

**Special sensitive fibres
(taste, carotid sinus)**

**Parasympathetic fibres
*Along facial and trigeminal nerves***

Motor fibres

Tongue, Carotid

Stylopharyngeus muscle

**Pharynx, Tonsil
Ear**

Parotid gland (secretion)

**General sensitive fibres
*Along the glossopharyngeal nerve***

**Trigeminal spinal tract
Trigeminal nucleus**



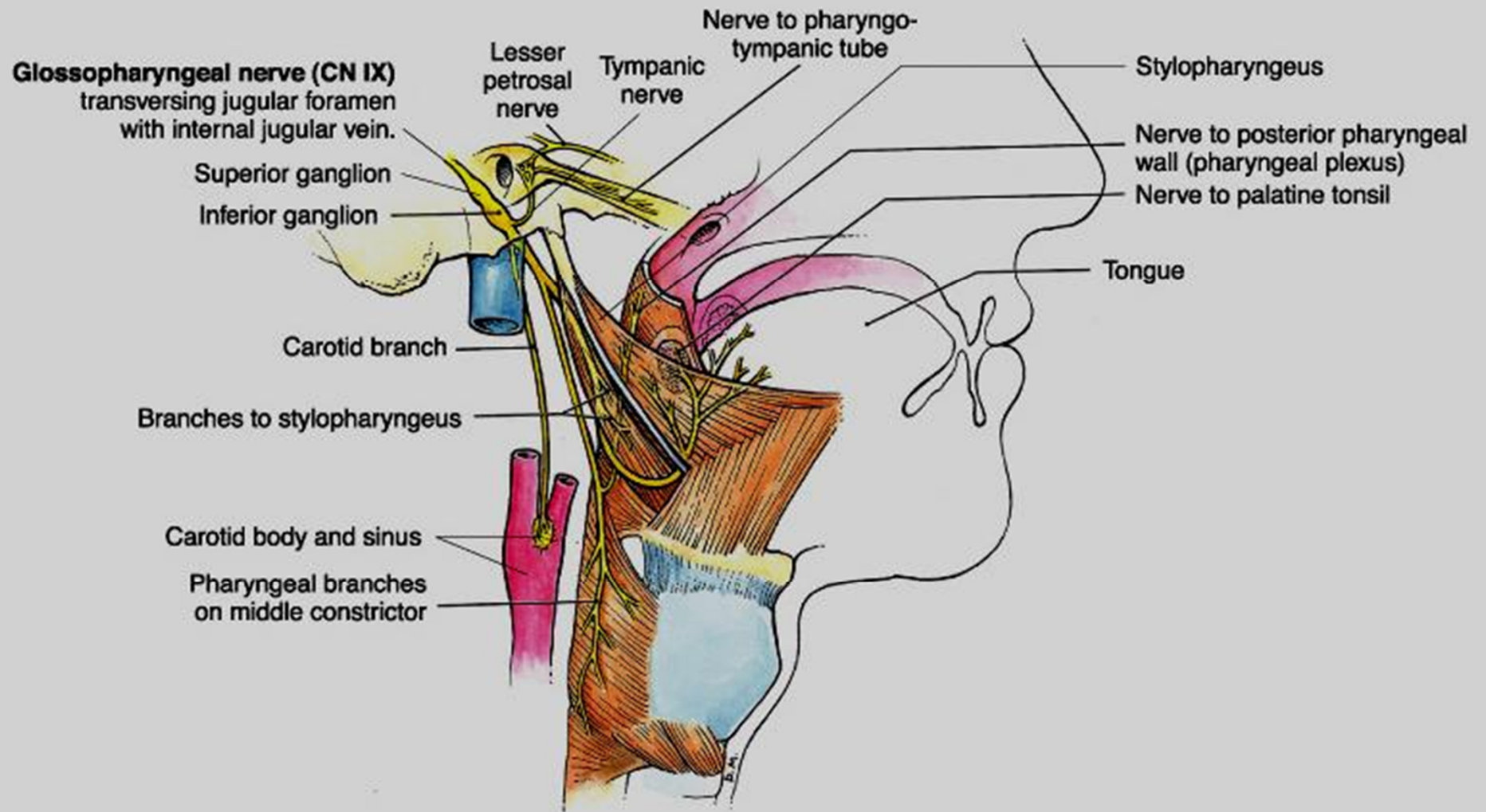


FIGURE 10.10 Distribution of the glossopharyngeal nerve (CN IX). Lateral view of the head and upper neck.

Introduction

- There are many studies that investigated the control of post tonsillectomy pain using different drugs:

Pappas AL et al, 1998

- **The effect of preoperative dexamethasone on the immediate and delayed postoperative morbidity in children undergoing adenotonsillectomy.**
- Compared with placebo, dexamethasone significantly decreased the incidence of PONV in the 24 h after discharge, improved oral intake, decreased the frequency of parental phone calls, and resulted in no hospital returns for the management of PONV and/or poor oral intake.

Samarkandi AH, et al, 2004

- **Use of dexamethasone to reduce postoperative vomiting and pain after pediatric tonsillectomy procedures.**
- Dexamethasone is considered safe and there was no adverse effects associated with a single dose of dexamethasone. Although the need for rescue antiemetic, time to oral intake and analgesia requirements in both groups were not significant, however, we found that dexamethasone does have antiemetic properties as overall incidence of retching and vomiting was significantly less in dexamethasone group as compared to control group in children who underwent tonsillectomy

Ugur MB, et al, 2008

- **The efficacy of intramuscular injection and peritonsillar infiltration of tramadol to prevent pain in children undergoing tonsillectomy.**
- Peritonsillar infiltration with tramadol provided good intraoperative analgesia, less postoperative pain on awakening and lower analgesic requirement within the first hour after surgery.

Saeed Khademi et al, 2011

- **Intravenous and Peritonsillar Infiltration of Ketamine for Postoperative Pain after Adenotonsillectomy: A Randomized Placebo-Controlled Clinical Trial**
- more effective in reducing the postoperative pain severity, need for analgesics and need for antiemetics.

V. Hermans et al. 2012

- **Effect of dexamethasone on nausea, vomiting, and pain in pediatric tonsillectomy**
- A single I.V. injection of DEX at the induction of anesthesia was effective in reducing the incidence of early and late PONV and the level of pain on the second postoperative day. A 0.15 mg/ kg DEX dose appeared to be as effective as a 0.5 mg /kg dose to reduce the incidence of PONV.

Z.Sarafraz et al 2013

- **Assessing the effect of peritonsillar infiltration of ketamine and tramadol on post tonsillectomy pain and compare the side effects.**
- Peritonsillar infiltration of **tramadol** before operation decreased post tonsillectomy pain
- Without any hemodynamic instability, sedation, or hallucinations.
- Decreased analgesic consumption
- Decreased time to the beginning of oral liquid diet

Z.Sarafraz et al 2013

- Ketamine:
- cause hallucinations
- does not have the efficacy of tramadol in pain management & hemodynamic stabilization effects.

Introduction (Sarafraz et al 2014)

- **Aim** To assess the effect of peritonsillar infiltration **tramadol** and parenteral **dexamethasone** on post tonsillectomy pain, nausea and vomiting in children.

- **Dexamethasone**: anti-emetic and anti-inflammatory
- **Tramadol**:
 - opium agonist that mostly effects mu receptors
 - in smaller extent kappa and sigma receptors
- Side effects:
 - nausea, vomiting, dizziness
 - sweating, anaphylactic reactions
 - increased intra-cerebral pressure, lower the seizure threshold

Inclusion Criteria

- 6-12 years old children with elective tonsillectomy
- Recurrent tonsillitis
- Obstructive symptoms (snoring, open mouth breathing, sleep apnea)

Exclusion Criteria

- Cardiovascular disease
- History of seizure
- Peritonsillar abscess
- Long operation time (more than 1 hour)

Material & Methods

- A double-blind randomized clinical trial
- 90 patients aged 6-12 years
- sharp dissection without electrical cutter
- sedation and pain scores at 2, 4, 6, 8, and 12 hours (VAS & PONV scores)
- The patients were randomly divided into 3 groups :
 - Dexamethasone
 - Tramadol
 - Placebo

Materials and methods

- randomized placebo-controlled clinical trial
- 3 groups:
- Group(A) :was injected 0.5 mg/kg Dexamethasone
- Group(B): 2 mg tramadol
- Group (C): 2 cc NaCl
- injection site: bed and anterior fold of each tonsil (1 cc for each tonsil)blind by an anesthesiologist and ENT surgeon

Results

variable	Dexamethasone	Tramadol	placebo	p
Age Mean (age)	8.05 ± 2.67	7.06 ± 2.21	7.40 ± 1.38	0.103
Sex (male percent)	57.10	66.70	40.02	0.061
Duration of anesthesia	54.29 ± 10.96	51.67 ± 10.37	53.00 ± 14.6	0.553
Duration of Surgery (min)	42.14 ± 10.43	40.56 ± 9.35	41.0 ± 12.62	0.761

Discussion

- tramadol had significantly lower pain scores than other groups at all time points
- The time to first dose of analgesic request was longer in tramadol group than in the other two groups
 - In our study, tramadol group had significantly shorter time to the first liquid uptake than dexta & placebo groups.

Discussion

- Dexamethasone group had significantly lower nausea and vomiting ($P=0.001$)

Discussion

- Pain following tonsillectomy is one of the most important complaints
- pain consequences :
 - 1) as excessive use of analgesics
 - 2) longer period of hospitalization
 - 3) intolerance to diet, which can lead to nutritional problem
 - 4) poorer quality of life

Conclusion

- Peritonsillar infiltration of tramadol before operation can decrease post tonsillectomy pain
- Without any hemodynamic instability, sedation, or hallucinations.
- Decrease analgesic consumption
- Decrease time to the beginning of oral liquid diet

Conclusion

- Therefore, we recommend the use of tramadol for management of post tonsillectomy

References

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Thanks for Attention

