A Model for Tonsillectomy

[1]Dr. G. Shankar, [2]Dr. Jugmalram

[1](Professor & unit head, department of ENT, vijayanagara institute of medical sciences, Bellary, Karnataka India)
[2](Postgraduate in ENT, department of ENT, Vijayanagara institute of medical sciences, Bellary, Karnataka India)

Abstract: *Tonsillectomy is the most common surgery performed by an ENT surgeon & it is the most risky surgery as its complications are sometime life threatening. So far not much effort has been focused in training the junior residents in tonsillectomy using the models, like temporal bone dissection for ear surgeries, whereas lot of live ENT surgical workshop are conducted other than tonsillectomy to train junior residents in different ENT surgeries. An attempt has been made to develop the model for tonsillectomy taking into account all the parameters one encounters during tonsillectomy & train the junior residents with handmade convenient, economical & practical model. We are successfully training the resident doctors with this model that improves their orientation, surgical skills & reduces the operating time & complications of tonsillectomy.*
Keywords: *Tonsillectomy model, VIMS,*

I. Introduction

Tonsillectomy is a procedure commonly performed by otolaryngologists. Accordingly, there is growing emphasis on the need for ENT surgical trainees to develop competence in tonsillectomy.

Amongst all steps of tonsillectomy, tying the bleeders is an important skill that requires good manual dexterity and one that is difficult to learn under the stress of operating table.

There is a growing need for the use of simulation to practice tonsillectomy to train junior residents. We present a simple, readily available and economical simulation model for surgical trainees to practice tonsillectomy.

Equipment:
    Plastic glass, sponges, cotton balls, plastic sheet, red ink, Temporal bone stand,

Measurement:
Plastic glass length: 9cm, height -7cm, diameter-7cm
Sponges / cotton balls: length -4cm, breath-1.5cm, thickness-1.5cm

II. Instruments

Routine tonsillectomy set without draffin's bipod stand & boyle's Davis mouth gag(figure 1). A plastic glass-measuring 9cm length, 7cm-diameter, 7cm-height, with both ends open to simulate the oral cavity, sponges (to simulate superior constrictor) are attached on the lateral aspects at 1cm from the bottom of the cup. Over the sponges white plastic sheets (to simulate plane of tonsillar bed) are pasted. Over this cotton balls soaked in red ink & dried are pasted to simulate the tonsils(figure 2-5).
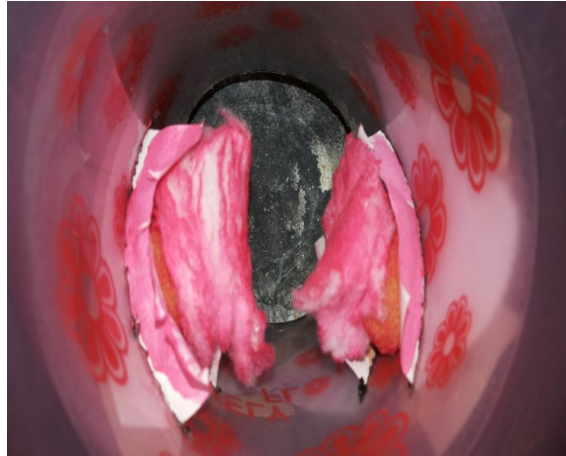

Figure 1- instruments for tonsillectomy
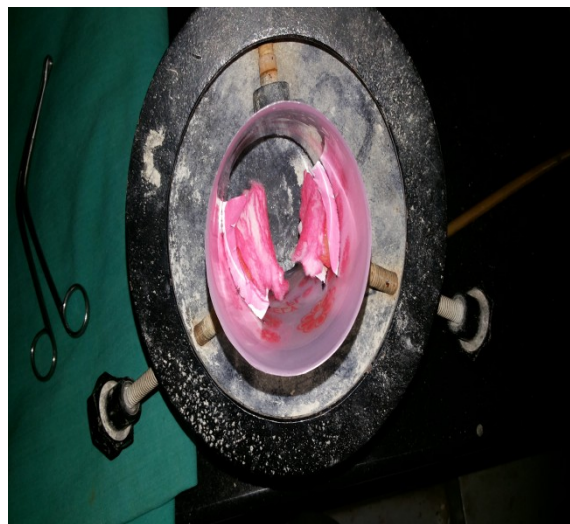
Figure 2- bilateral tonsils with its bed & pillars
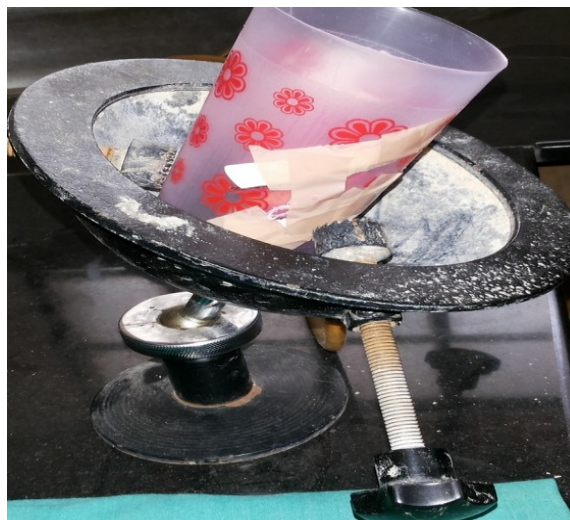

Figure 3- tonsillectomy model on its stand

Figure 4- lateral view of model

Figure 5- surgeon position during tonsillectomy

III.   Procedure:

Tonsillectomy started as usual, the trainee will take same position & set- up as if in a OT as shown in the below picture. the trainee has to dissect the cotton balls from the bed meticulously(figure 6) & then practice ligating by catching underlying sponge. Trainee has to put as many knots as possible without sponge being peeled out .

Figure 6 - dissection of tonsillectomy bed

Figure 7- stabilizing the bleeding vessel with second artery
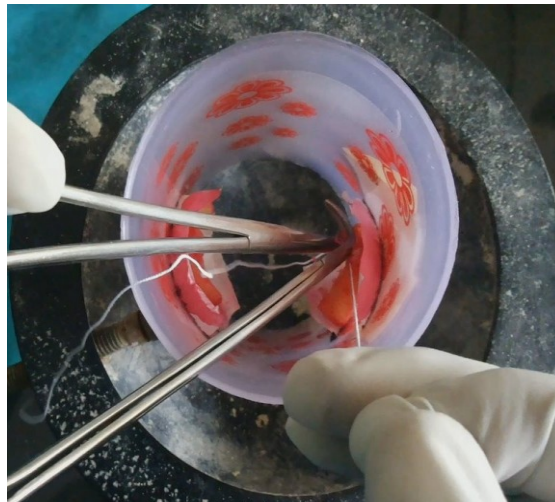
Figure 8-lagation of bleeding vessel

Figure 9- ligation of vessel

Figure 10- ligation of vessel at inferior pole of tonsil

Our model takes into account as many parameters as possible that one encounters during tonsillectomy, where as currently available costly models focus only on tying the bleeder knots only.

IV.   Conclusion
Given its very basic nature, this model does fully mimic the spatial orientation available during a tonsillectomy. It allows the junior resident to become familiar with tonsillectomy instruments

and develop the manual dexterity required to apply ligatures in a controlled environment. We hope that otolaryngology trainees may utilize this model as a simple aid to their training.

References

[1].   Lowe D, van der Mullen J, Cromwell D, et al. (2007) Key messages from the
[2].   National Prospective Tonsillectomy Audit. Laryngoscope 117: 717-724.
[3].   Hall L, Lee M (2011) Training for tonsillectomy: home-made Negus knot pusher.
[4].   Clin. Otolaryngol. 36: 99-100.
[5].   Raja MK, Haneefa MA, Chidambaram A (2008) Yorick's skull model for
[6].   Tonsillectomy ties training. Clin. Otolaryngol. 33: 187-188.
[7].   Street I, Beech T, Jennings C (2006) The Birmingham trainer: a simulator for
[8].   ligating the lower tonsillar pole. Clin. Otolaryngol. 31:79.

Corresponding author for author enquiry and details: Dr.G.Shankar, drshankarent@gmail.com,