



Description of a New Technique for Trigeminal Balloon Rhizotomy

David Ferrone; Sherri Ann Sinks RN; Hamid M. Shah MD

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Introduction

Trigeminal neuralgia has multiple treatment options, with balloon rhizotomy being a fairly low morbidity and minimally invasive technique. Until recently, there had been a commercially available kit which has ceased to be manufactured. We report on the use of a new set of implements and initial outcomes on a series of patients

Methods

Patients were selected who met the criteria for typical trigeminal neuralgia and had either failed other treatment options, could not tolerate more invasive surgery, or specifically preferred a less invasive treatment option. Access to the foramen ovale was aided by the use of intra-operative O-arm. The balloon was inserted and inflated to a pressure of 1.5-2 atmospheres for no greater than two minutes. Patients were assessed post-operatively and followed in clinic to gauge the success of the surgery.

Results

Balloon compression was found to be a successful technique for treatment of trigeminal neuralgia with minimal morbidity. Each patient found significant relief from pain with this procedure and this improvement persisted on follow-up visits.

Conclusions

Balloon rhizotomy is a safe procedure for treatment of trigeminal neuralgia. O-arm provides improved image guidance for the procedure. Off-the-shelf hardware can be adapted for the procedure. There is minimal morbidity and decreased risk of analgesia dolorosa.

Learning Objectives

By the conclusion of this session, participants should be able to select appropriate patients for balloon compression for trigeminal neuralgia, plan the surgery using existing available hardware, and understand the use of O-arm in navigating the anatomy for this procedure.

References

1. Joshua J. Lim, Bryan M. Ladd, Andrew W. Grande, Stephen J. Haines; Letter: Prepackaged Instrument Kit for Percutaneous Balloon Compression Rhizotomy for the Treatment of Trigeminal Neuralgia: Improved Solution for an Unexpected National Supply Shortage, Operative Neurosurgery, Volume 13, Issue 4, 1 August 2017, Pages E19–E20

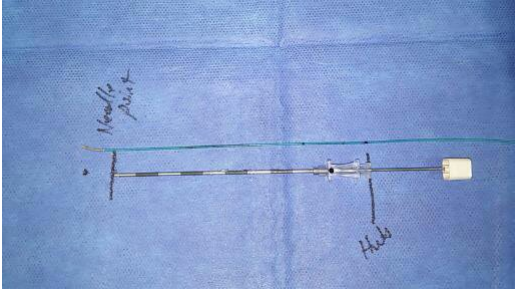
2. Sarah K.B. Bick, MD, Emad N. Eskandar, MD. Surgical Treatment of Trigeminal Neuralgia.Neurosurgery Clinics of North America, 2017 -07-01, Volume 28, Issue 3, Pages 429-438.

Surgical field w/ Intraoperative CT



surgical field w/ Intraoperative CT

needle and balloon



3 French Embolectomy Balloon by  
Edwards Life Sciences

small-40cm-ref-120403F

long-80cm-ref-120803F

16 gauge Cosman cannula RCE 9cm  
/ref-RCE-916S

Needle inserted