

# Percutaneous Balloon Compression as Treatment to Trigeminal Neuralgia: 14 Years of Experience in a Single Center

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#### Introduction

Percutaneous balloon compression of the Gasserian ganglionic has been used to treat Trigeminal Neuralgia (TN) since 1983.

#### Methods

We performed a retrospective study on 222 patient's records which have received 242 procedures of Percutaneous Balloon Compression (PBC) as treatment for TN. A 6 months follow-up period after surgery was needed to be included in the study. They were operated at Functional Neurosurgery Unit in Brazil from February 2002 to July 2016.

## Results

The patient's age ranged from 29 to 91 years (mean, 62, 2 years), 43% were males and 57% were females. Rare cases of bilateral trigeminal neuralgia were seen in 5 patients. Immediately after surgery, 193 (79,7%) patients became painfree and 34 (14%) patients became pain free during the following 4 days. Carbamazepine was suspended in 93.7% of cases. Out of the total, only 13 (5,37%) patients related residual pain on follow-up. Hypoesthesia was reported after 83,8% of procedures. In addition, bradycardia was seen in 58,1% of cases during foramen ovale puncture. Transitory complications such as diplopia (2,47%), otalgia (1,23%) and tinnitus (1,23%) were reported. Regarding to balloon appearance, pear and dumb-bell shapes were detected in 74,8% and 7,4% of procedures, respectively. Only 15 (6,19%) patients needed a reoperation due to pain persistence.

## Conclusions

PBC showed to be an effective and safe technique which provides high rates of pain relief (93,7%) in the following 6 months after surgery. The Carbamazepine's use was markedly reduced (93,7%). In addition, relapse of pain occurred in few cases (5,37%). Complications were minor and transitory. Comparing statistically, we can stat that the balloon shapes (82,2%) and hypoesthesia (83,8%) findings had a positive influence on pain relief rate (93,7%). Our findings support that PBC should be considered as primary surgical treatment of trigeminal neuralgia.

### Learning Objectives

To assess the safety and efficacy of PBC and to evaluate the factors influencing the outcome.