Review of: "Treatment of Third Branch Trigeminal Neuralgia With a Balloon Inflated in the Foramen Ovale"

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In this interesting study[1], the authors reported 132 cases of third branch trigeminal neuralgia (TN) treated with percutaneous balloon compression (PBC) , of which 51 received standardized PBC and 81 received modified PBC. Compared to the conventional technique, the modified technique was to shorten the time of compressing the Gasserian ganglion and give additional compression at the foramen ovale for 1-2 minutes. Briefly, they found that the modified surgery had more significant advantages than the traditional one in improving surgical efficacy, reducing postoperative recurrence rate, and decreasing postoperative numbness in the region.

As a low-cost, minimally invasive and effective procedure, since its advent, PBC has become increasingly popular in the treatment of primary TN. The initial cure rate of TN after PBC was usually more than 90%, even nearly 100% in some series[2-4]. Lichtor et al. [5] reported that the five-year pain relief rate after PBC was 80% , even with a long time follow-up to 10 years, the pain relief rate was more than 70%. In the authors' research, the immediate postoperative pain relief rate of patients in the classic group was 84.3%, with a mean follow up of 30.2 months, the pain free rate was only 54.9%. From our experience [6], when a pear-shaped appearance of the balloon is obtained during the standardized PBC, the immediate pain relief rate often exceeds 90%, no matter which division of the trigeminal nerve is affected. And we believe that adequate compression on the Gasserian ganglion is very important, especially at the bottom of the "pear", too deep placement of the balloon catheter should be avoided.

The authors had the opinion that the efficacy of PBC for third branch TN was relatively unsatisfactory. In this study, the balloon was emptied after compressing the Gasserian ganglion for only 1-2 minutes in the modified group. Then, the balloon catheter was removed and placed at the entrance of the foramen ovale, trying to enhance the compression in V3. All of their work put forward a good attempt for improving the surgical efficacy and decreasing postoperative facial numbness.

It is generally agreed that the medium and large myelinated pain fibers of the trigeminal nerve are selectively injured during PBC, and the most common postoperative complication is facial numbness. Patients receiving conventional PBC usually have facial numbness in all three branches. This study indicated that the incidence of postoperative facial numbness in the region of the first branch was significantly lower in the modified group than in the classic group. Considering the better surgical efficiency, the modified technique is of great importance to improve the quality of life of third branch TN patients.

From a neurosurgeon's perspective, MVD is the priority choice for primary TN. For patients with third branch TN, the modified PBC may be taken into consideration when craniotomy is infeasible.

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