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Treatment of a Patient with Glossopharyngeal Neuralgia by the Anterior Tonsillar Pillar Method

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Key Words

Glossopharyngeal neuralgia · Anterior tonsillar pillar method · Glossopharyngeal nerve block · Levobupivacaine · Amitriptyline · Methylprednisolone acetate

Abstract

We describe the case of a 65-year-old patient with glossopharyngeal neuralgia. Pain was triggered by swallowing, yawning, or cold food. We used the anterior tonsillar pillar method for the injection of drugs; a relatively new glossopharyngeal nerve (GPN) block which was described by Benumof (*Anesthesiology* 1991;75:1094–1096). Performing this GPN block, daily levobupivacaine (Chirocaine® 5 mg/ml) and oral amitriptyline (Laroxyl® 10 mg) were given, as well as methylprednisolone acetate injectable suspension (Depo-Medrol® 40 mg/ml) once only at the beginning of the treatment. A 0–10 point visual analogue scale was used daily to evaluate the pain. Pain was successfully controlled with a steroid added to the GPN block and orally administered tricyclic antidepressant. We think that this treatment is effective for glossopharyngeal neuropathy and could be of interest to pain management physicians.

Introduction

Glossopharyngeal neuropathy is characterized by paroxysms of lancinating or burning pain in the oropharynx, whereas vagal neuropathy presents similarly but can also include symptoms of vocal cord dysfunction, such as hoarseness. Glossopharyngeal neuralgia is estimated to be 75 times less frequent than trigeminal neuralgia [1]. Electromyography can be performed to confirm the diagnosis [2].

In this report, we describe the case of a patient with glossopharyngeal neuralgia. Pain was triggered by swallowing, yawning or cold food.

Case Report

A 65-year-old man reported 4 months' history of paroxysmal pain attacks originating from the right lower jaw, disseminating to the right ear region when eating, and also triggered by swallowing, yawning and cold food. The duration of the pain attacks were measured in seconds. These pain paroxysms had occurred 5 or 6 times daily at the initial stage of the disease. Three months ago, the patient had been admitted to the Department of Neurology with complaints of paroxysmal glossopharyngeal pain attacks, and hospitalized. During his hospitalization, he received carbamazepine (Tegretol® 600 mg p.o. daily).

After a 2-month time period, paroxysmal glossopharyngeal pain attacks gradually recurred and increased. The pain attacks were not completely controlled by carbamazepine at a daily dose of 1,200 mg. The patient was referred to the chronic pain center by a neurologist in a final effort to treat his pain before surgery. General physical examination, cardiovascular and neurological examination was normal. Magnetic resonance images and magnetic resonance angiography of the brain and brain stem were normal; there was no sign of compression on the glossopharyngeal or vagal nerves and also on the brain stem. Carbamazepine was stopped. The patient was given a tricyclic antidepressant (amitriptyline (Laroxyl®) 10 mg/daily p.o.).

We used the anterior tonsillar pillar (ATP) method, a relatively new glossopharyngeal nerve (GPN) block for the injection of drugs, which was described by Benumof [3]. We chose the ATP method, because the ATP is easily exposed and tongue movement does not elicit the gag reflex, besides patient tolerance is good. In this method, the tongue is swept to the opposite side. A 25-gauge spinal needle is inserted 0.5 cm deep, just lateral to the base of the ATP (fig. 1) and 2 ml of levobupivacaine (Chirocaine® 5mg/ml) is injected on both sides daily.

We also injected methylprednisolone acetate injectable suspension (Depo-Medrol® 40 mg/ml) 20 mg to each ATP. This was done once only at the beginning of the therapy. The patient was asked to evaluate his pain using a 0–10 point visual analogue scale (0 = no pain, 10 = worst possible pain). Over the course of 2 weeks after starting the glossopharyngeal block, the patient's right-sided sore throat and pain began to resolve and continued to improve for approximately 1 month. Before starting block therapy, the patient had described his pain as 9 on a 10-point scale, whereas after a month of therapy, he described it as 1–2 out of 10. The GPN block was stopped at that time; orally administered amitriptyline was continued.

Discussion

Glossopharyngeal neuralgia was first described by Weisenburg in 1910 [4] in a patient with a tumor of the cerebellopontine angle. The cause of this disorder was usually undetermined, though in a few reported cases, cerebellopontine angle tumors [5], an elongated styloid process or a calcified stylohyoid ligament or the last two together [6] were identified as etiological factors. Most of these cases of 'idiopathic' glossopharyngeal neuralgia are caused by vascular compression of the GPN [7, 8].

The other secondary causes of glossopharyngeal neuralgia are Eagle's syndrome, cerebellopontine angle tumors, parapharyngeal space lesions, multiple sclerosis, arachnoiditis, posterior fossa arteriovenous malformation, direct carotid puncture, metastatic head and neck tumors, and Chiari I malformation [7–11].

The paroxysms of pain are triggered by swallowing, particularly cold, salted, bitter, or acid foods [6, 12] and by mechanical stimulation of the tonsillar fossa on the affected side (trigger zone).

Local anesthesia of the pharynx and nerve block with mepivacaine (Carbocaine) are additional measures that produce temporary benefit [13, 14]. Anticonvulsant treatment

(phenytoin) has been advocated as the long-term treatment of choice [15] and carbamazepine may also be an alternative to surgical resection of the GPN [9].

Several recent studies recommend gabapentin, pregabalin, or a tricyclic antidepressant as equivalent first-line agents for treatment of neuropathic pain [12, 16]. Carbamazepine is the drug of choice for the initial treatment of neuralgia. In the case of partial pain relief with carbamazepine, a second agent can be added or the drug can be changed [17]. Gabapentin has been used as a first-line agent or in cases of neuralgia resistant to the traditional therapy, with complete or almost total remission in 27% of the cases [18, 19]. Gabapentin is considered a second-line medication and definitive scientific evidence of its efficacy in the treatment of neuralgia does not exist [18].

Our patient's clinical symptoms of spontaneous paroxysmal burning pain in the tonsillar area that radiated to the right ear and did not resolve with previous treatment were strongly indicative of glossopharyngeal neuropathy. The patient's pain was triggered by eating, swallowing, yawning, or cold food. Therefore we had to reduce the pain quickly, which is why we did not choose gabapentin therapy, since the usage of this drug might prolong the total treatment time. The patient used amitriptyline therapy for about 12 months; during this time, he had no pain attacks. We think a GPN block and steroid therapy is more effective in the earlier periods of glossopharyngeal neuropathy and amitriptyline is more effective in the later periods of the disease.

Screening for neuropathic pain is extremely important because misdiagnosis may cause unnecessary diagnostic and invasive procedures, increased patient suffering, and decreased quality of life. Therefore, patients presenting with lancinating, burning, localized throat pain should be evaluated and treated for neuropathic pain if other possible causes have been ruled out. Had our patient not come to the pain center, he might have undergone potentially unnecessary surgery with no guarantee that his pain would have resolved.

In this case report, we discussed the administration of a GPN block using the ATP method, injecting a local anesthetic with steroid, as well as oral amitriptyline usage to effectively treat glossopharyngeal neuropathy in a patient. We stress the importance of screening patients with unexplained throat pain for pain of neuropathic etiology. The mechanism was idiopathic, there was no sign of compression on the GPN region. We suggest that this treatment is effective for this kind of glossopharyngeal neuropathy and could be of interest to pain management physicians.



Fig. 1. The tongue is swept to the opposite side by a laryngoscope. A 25-gauge spinal needle is inserted 0.5 cm deep, just lateral to the base of the ATP and 2 ml of levobupivacaine (5 mg/ml) is injected on both sides.

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