



Medication and Psychotherapy for Cluster Headache with Opioid Abuse: A Case Report and Literature Review

Chu Yan Lin and Li Wan*

Department of Pain Management, The State Key Clinical Specialty for Pain Medicine, The Second Affiliated hospital, Guangzhou Medical University, Guangzhou, Guangdong, PR China

*Corresponding author: Li Wan, Department of Pain Management, The State Key Clinical Specialty for Pain Medicine, The Second Affiliated hospital, Guangzhou Medical University, Guangzhou, Guangdong, PR China

Received: 📅 August 26, 2020

Published: 📅 September 02, 2020

Abstract

Background: Cluster headache is a common severe unilateral headache in clinical practice. It can seriously impact on patient life, including restrict in the patient daily living, interrupt the social-activity participation, family life, and overall life changes.

CasePresentation: Here, we reported a young cluster headache patient who received unregulated medicines treatment and other minimally invasive procedures for pain relief and doctors hoping for 2 years, due to the unsatisfied pain relief and timely severe pain attack, she developed opioid abuse. After she hospitalized to our department, the symptoms and attack characteristic were observed carefully and differentiation diagnosis was done to exclude the brain, cervical or trigeminal nerve disease. Standardized medicines for cluster headache was taken for her, except this, midazolam was given to antagonist opioids abuse for 1 weeks, the pain satisfied controlled and VAS 1-2, medicines were continuous for 6 months and follow up for 2 years, there are no opioid abuse again and the patient returned to normal work.

Conclusion: Careful observation of pain attack, definitive correct diagnosis and medications are very important in prevent acute pain chronically, and health cognitive education and direction is also important in pain relief and prevent drug abuse and addiction.

Keywords: Cluster headache; Opioid abuse; Diagnosis; Health cognitive education and direction.

Introduction

Cluster headache is a trigeminal autonomic headache with severe unilateral pain and ipsilateral autonomic symptoms. It is characterized by recurrent attacks that are concentrated on several weeks or months annually and has a negative impact on patients' life [1]. Cluster headache is more common in young people, aged from 20 to 40 years old, so it can significantly influence the employment. Rozen, et al. reported that approximately 20% of patients with cluster headache experienced job loss and 8% were unemployed or were receiving disability payments [1]. Due to its severe pain and frequent episodes, it can result in profound fear in the patient. In this paper we present a unique case of a cluster headache patient with frequent attacks, and the development of opioid abuse. After she was hospitalized, anti-cluster headache

medicines, anti-opioid abuse and replacement therapy were used after diagnosis of cluster headache and opioid abuse. Close monitoring and health recognition directions were maintained for the following days. The cluster headache and opioid abuse were cured after the combination of medication, psychotherapy and health recognition education.

Case Presentation

History: A 32 years old female, with 2 and a half years of left temporal pain that was aggravated for 1 month was seen in our pain management department. Two and a half years ago, she had experienced left temporal headache attacks with no obvious triggers. The headache appeared as bursting and burning pain.

When the pain aggravated, it was associated with nausea, vomiting, stuffy nose and tears, but not enhanced by tooth brushing or talk. She had seen doctors from other hospitals and had been diagnosed as "micro pituitary adenoma" without treatment at first and then as "left trigeminal neuralgia," and received "vascular decompression craniotomy surgery". After surgery, she suffered from lightning and pinching pain at the left maxillary and periocular regions. Pregabalin and Tizanidine were taken for pain relief, but there was no effect for carbamazepine treatment. One and a half year ago, the above symptoms were aggravated, and she was hospitalized in our department.

The diagnosis was given as:

1. Cervicogenic headache;
2. Cervical myofascial pain syndrome;
3. Left temporomandibular joint disorder;
4. Left trigeminal neuralgia (V2,V3 branch) after left trigeminal nerve microvascular decompression;
5. Pituitary microadenoma; and
6. Depression.

The patients had successively received "sphenolatyngal nerve block", "left stellate ganglion block", "left maxillary, mandibular, superior orbital nerve block", "C3/C4 intervertebral disc radiofrequency thermocoagulation ", "left C2/C3 dorsal root ganglion pulsed radio frequency ", and was discharged after pain relief. After being discharged from the hospital, she had self-medicated with "Aminophenol codeine" (6 tablets per day), "Oxycodone-acetaminophen", "Diclofenac sodium", "Oxycodone", etc. for pain relief, as well as "lorazepam" and "clonazepam" for anti-anxiety and depression. A year ago, the above-mentioned pain attacks returned, and she was hospitalized again and was given "left temporomandibular block" and "stellate ganglion block". The patient was discharged after symptoms improved after psychological treatment. In recent months, the symptoms recurred and became progressively worse, and she was hospitalized again for further therapy.

The patient had a depression history for 7 years and even suicide one time, and took lorazepam 1mg n12, 1mg, qn and Clonazepam 2mg qn every day.

Physical examination showed that the VAS scale was 10. There was no hypoesthesia, no hyperalgesia or plate point in the distribution area of the left trigeminal nerve (V2, V3). There were tenderness in bilateral C2-5 paravertebral and transverse, the left occipital and the left temporomandibular joint. The strength of bilateral masticatory muscle and the bilateral corneal reflex were symmetry. Pressure test, neck test, intervertebral foramen

extrusion test and brachial plexus traction test were negative. The positive results of image examination from different hospitals were as follows. Compared with the preoperative PACS image (2014-07-06MR), the subarachnoid space in the left cerebellopontine angle region was slightly widened and no close vascular shadows were found in the intracranial segment of the left trigeminal nerve. Pituitary enhanced MRI showed small signal abnormality on the left side of the pituitary. The transcranial doppler (TCD), cervical spine MRI, DWI and MRA craniocerebral plain scan and EEG were all normal. Review of prolactin is 19.6ng/ml.

According to the patient's symptoms, signs and images, we primary diagnosed the disease as cervicogenic headache and mainly differentiation with cluster headache. Due to the serious pain, flurbiprofen 50mg was iv. injected at the time of admission, followed by morphine 100mg PCA infusion, with the parameter setup as 0.5mg/ml, 2ml/h, PCA bolus: 2ml, locking time 30min. Meanwhile, meloxicam 7.5mg, qd, carbamazepine 0.2 mg, tid, lorazepam 1mg, n12, lorazepam 1mg, qn, clonazepam 2mg were orally administered. There was still a pain attack and awake every night. When the headache attacked again on the third day after administration, the classic symptoms of cluster headache were observed: cold sweat, runny nose, tears, conjunctival congestion and eyelid edema on the painful side. Therefore, 2% lidocaine cotton was given to plug nose, with 8L/min concentration of oxygen inhalation. The pain was alleviated after more than 10 minutes. Medication was adjusted to 2.5mg ergotone, bid, gabapentin 0.1, tid oral every day. For the serious and hourly headache attack, methylprednisolone pulse therapy with 80mg, qd was given i.v. for 5 consecutive days, and the dosage of gabapentin was increased by 0.1 every three days. The patient's breakthrough headache was significantly reduced, but the patient still complain pain and could not fall asleep at night.

When the pain occurred again, the patient appeared shaking, having apathetic facial expression with straight eyes sight, and holding the doctor for "help". Since the long-term drug abuse-induced addiction was highly suspected, gabapentin 0.1 g was given as substitution. The PCA morphine infusion was replaced with midazolam at 25mg, 15mg and 5mg for the following 3 days, respectively, then was replaced with saline (placebo) for another 2 days. Moreover, we gave the patient health recognition education about the cluster headache and the harm of drug abuse every day. After 1-week substitutive therapy, the methylprednisolone was prescribed for 24mg, qd, gabapentin 0.4, tid oral. The patient no longer complained of obvious headache, but still complained of discomfort. We then gave the patient acupuncture of the facial muscles to relieve the discomfort. The patient was discharged after 12 days hospitalization. The gabapentine 0.4, tid, carbamazepine 0.2, bid, dihydroergotin 2.5mg, bid, amitriptyline 25mg, qd, meprednisone 24mg, qd, lorazepam 1mg n12, 1mg, qn, clonazepam

2mg, qn were prescribed for pain relief after discharge. The follow up has been maintained once a week for 2 years.

After discharge, the medicines were gradually reduced one by one according to the patient's symptoms. In the first month, the dose of methylprednisolone was reduced by 8mg every 3 days until fully stopped, and pregabalin was reduced to 0.2, tid. There was no headache outbreak. In the second month, the dose of carbamazepine was reduced by 0.2, qd. There was no explosion of pain, only a burning sensation in the left cheek. We gave the patient 3 times acupuncture to relieve the burning pain. In the third month, we stopped carbamazepine, reduced gabapentin 0.1mg, tid and increased amitriptyline 25mg for bid. In the fourth and fifth month, ergotamine and clonazepam were stopped, and lorazepam was reduced to 1mg, qn without headache and burning feeling. Amitriptyline was still maintained at 25mg, bid. Since this patient experienced attacks cluster headache, she had not worked for more than two years. Now she has returned to work position for two years. Occasionally the patient felt the premonition of headache. We gave her acupuncture of splenius capitis and sternocleidomastoid muscles. There have not been cluster headache attack or drug abuse up till now.

Discussion

Cluster headache is a severe trigeminal cephalgia that associated with extremely painful unilateral headache attacks and autonomic symptoms. It has high healthcare costs and is associated with absence of work and disability. The headache is often referred to as "suicide headache". The attack has both episodic and chronic characteristic and can occur multiple times daily for several weeks or months per year [1,2]. Due to the severe pain, the patients always suffer from extremely physical and emotional distress, which seriously influences the patients' work productivity and quality of life. In our report, the patient suffered from the severe headache. Even though she received a series of surgeries, such as the vascular decompression craniotomy surgery, she did not benefit from them at all. Instead of getting pain relief, or benefited from the surgeries, she experienced much worse attacks post-surgery. The reason may be due to the incorrect diagnosis.

In clinical practice, commonly recommended acute treatments of cluster headache include high-flow oxygen and triptans or ergotamine, while commonly recommended preventive treatments include lithium, and certain anticonvulsants [3-5]. Additionally, corticosteroids are often used as "transitional" treatment at the start of active cluster cycles [3,6]. In our case, we selected the above recommend methods to control the recurrent cluster headache and got good results. Although it takes time to alleviate the symptoms, but the standard methods are effective. Cluster headache is very easily confused with migraine rather than cervicogenic headache, not only because of the common natural triggers of the two diseases,

such as stress, sleep, alcohol intake and weather changes [7,8], but also pharmacological triggers [9-11]. These triggers are common trigeminal system activators [11,12]. In our case, the patient had long-term taken all kinds of pain killers, which maybe the cause of headache attacks. Choong recently reported [13] that cluster headache is associated with significant comorbidity, for example depression, anxiety, higher rates of substance abuse (3-fold) and suicidal ideation (2.5-fold) compared with non-headache controls. And treatment patterns indicate low use of recognized cluster headache treatments (~30%). Our case is somehow an accurate reflection of the current situation of this disease.

Patients with cluster headache are at increased risk of other diseases identified during the post-attack period. There are data showing that depressive disorders, sleep disturbance, and anxiety disorders are approximately 2 times more common in the cluster headache cohorts than in controls [8,12]. Therefore, treatment of the comorbidity is equally important for cluster headache patients. Fortunately, in our study, the patient had been correctly diagnosed by careful observation and received standard treatment, not only for the depression, but also for her drug abuse and the addiction it induced.

From this patient's success cure of the cluster headache and drug abuse, we got four important experiences as follows:

Firstly, correct diagnosis arises from the careful observation and symptom description and expression. In this case, the initial description was simply temporal bursting and burning pain. This way expanded to description of intraocular foreign body moved in eyes shortly and immediate onset of severe pain radiated to the frontotemporal region, accompanied by the stuffy nose and tears in every attack [9]. This detailed description helped us make the correct diagnosis and select the treatments. Secondly, standard medication can effectively relieve pain [14,15] Compliance with protocols for the management of chronic pain conditions can help patients avoiding drug abuse and addiction [16]. Due to the severe pain attack, the cluster headache patients were vastly frightened in their recurrent period, so the anti-depression and anti-anxiety medicine is very essential, especially for the depression patients. They need to maintain the drug for a relatively long-term until the status stabilizes. Thirdly, one shall pay attention to the young patients' severe pain and correctly recognize drug abuse and reduce addiction [15,17]. For the severe pain patients, we need to avoid long-term use of the compounds containing immediate releasing opioid, which can produce the euphoric along with pain relief and are lack of supervision in China. Enhancing the supervision by the government is needed to reduce the drug abuse risk. For the drug abuse patients, we should help the patient recognize the harm of opioid abuse and reduce the drug gradually. Acupuncture can be given to promote the endogenous opioid production to relieve the


discomfort. Finally, psychotherapy is important for patients with long-term illness. In addition to providing effective treatments, it is equally important to help patients restore confidence for returning to social activities and family life. This is the true meaning of medicine.

Conclusion

Cluster headache is a severe headache that needs to be taken seriously, especially for younger patients. Correct diagnosis, standard treatment and psychotherapy to restore the patient's confidence is important to cure this disease and avoid drug abuse.

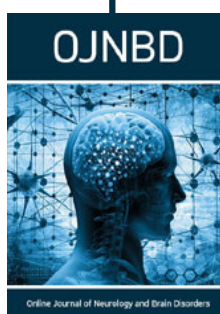
References

1. Choong CK, Ford JH, Nyhuis AW, Robinson RL, Aurora SK (2018) Health Care Utilization and Direct Costs Among Patients Diagnosed with Cluster Headache in U.S. Health Care Claims Data. *J Manag Care Spec Pharm* 24(9): 921-928.
2. Headache Classification Committee of the International Headache Society (2013) The International Classification of Headache Disorders, 3rd edition (beta version). *Cephalalgia* 33(9): 629-808.
3. A May, M Leone, J Afra, M Linde, P S Sándor, et al. (2006) EFNS guidelines on the treatment of cluster headache and other trigeminal-autonomic cephalalgias. *Eur J Neurol* 13(10): 1066-1077.
4. Francis GJ, Becker WJ, Pringsheim TM (2010) Acute and preventive pharmacologic treatment of cluster headache. *Neurology* 75(5): 463-473.
5. National Institute for Health and Care Excellence (2015) Headaches in over 12s: diagnosis and management. NICE, UK.
6. Robbins MS, Starling AJ, Pringsheim TM, Becker WJ, Schwedt TJ (2016) Treatment of cluster headache: The American Headache Society evidence-based guidelines. *Headache* 56(7): 1093-1106.
7. M Barloese, N Lund, A Petersen, M Rasmussen, P Jennum, et al. (2015) Sleep and chronobiology in cluster headache. *Cephalalgia* 35(11): 969-978.
8. Rozen TD, Fishman RS (2010) Cluster headache in the United States of America: demographics, clinical characteristics, triggers, suicidality, and personal burden. *Headache* 52(1): 99-113.
9. Hoffmann J, May A (2018) Diagnosis, pathophysiology, and management of cluster headache. *Lancet Neurol* 17(1): 75-83.
10. Schytz HW, Schoonman GG, Ashina M (2010) What have we learnt from triggering migraine? *Curr Opin Neurol* 23(3): 259-265.
11. Buture A, Gooriah R, Nimeri R, Ahmed F (2016) Current understanding on pain mechanism in migraine and cluster headache. *Anesth Pain Med* 6(3): e35190.
12. Schwedt TJ (2014) Chronic migraine. *BMJ* 348: g1416.
13. Casey K Choong, Janet H Ford, Allen W Nyhuis, Shivang G Joshi, Rebecca L Robinson, et al. (2017) Clinical characteristics and treatment patterns among patients diagnosed with cluster headache in U.S. healthcare claims data. *Headache* 57(9): 1359-1374.
14. Megan O'Brien, Janet H Ford, Sheena K Aurora, Sriram Govindan, Deborah E Tepper, et al. (2017) Economics of inhaled oxygen use as an acute therapy for cluster headache in the United States of America. *Headache* 57(9): 1416-1427.
15. Rozen TD, Fishman RS (2011) Inhaled oxygen and cluster headache sufferers in the United States: use, efficacy and economics: results from the United States Cluster Headache Survey. *Headache* 51(2): 191-200.
16. Olsen JC, Ogarek JL, Goldenberg EJ, Sulo S (2016) Impact of a chronic pain protocol on emergency department utilization. *Acad Emerg Med* 23: 424-432.
17. Rozen TD, Fishman RS (2012) Cluster headache in the United States of America: demographics, clinical characteristics, triggers, suicidality, and personal burden. *Headache* 52(1): 99-113.

 This work is licensed under Creative Commons Attribution 4.0 License

To Submit Your Article Click Here: [Submit Article](#)

DOI: [10.32474/OJNBD.2020.04.000188](https://doi.org/10.32474/OJNBD.2020.04.000188)



Online Journal of Neurology and Brain Disorders

Assets of Publishing with us

- Global archiving of articles
- Immediate, unrestricted online access
- Rigorous Peer Review Process
- Authors Retain Copyrights
- Unique DOI for all articles