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Case Report

What to do when hiccups are coming? A case report

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ABSTRACT

Hiccup known as innocuous symptom and usually self-limiting within seconds or minutes. The process of hiccup related to involuntary movement, intermitent and repetitive contractions of diaphragm and lead to abrupt early closure of glottis. We report a case of 57-year-old man with 5 days chronic hiccup, following with coughing, nausea, vomiting and seizure. Patient was hospitalized 4 days and getting better after given antibiotic, proton pump inhibitor (PPI) therapy and symptomatic drug due to hiccup.

Keywords: Case report, Prolong hiccup, Gastrointestinal problem, Respiratory infection

INTRODUCTION

Hiccup is a common condition in our daily life. It is usually self-limiting and lasting for a few seconds until minutes. In some rare cases, it can last more than 48 hours, most likely associated with an underlying disease. Hiccup identified as diaphragm and intercostae muscle contraction happen repeatedly, involuntary spasmodic.[1] Based on duration, hiccup can be classified into transient hiccup (lasting seconds or minutes), persistent hiccup (lasting more than 48 hours), and chronic hiccup (lasting days until years).[2] In a retrospective study between 1995 until 2000, found 54 from 100.000 individuals were hospitalized caused by hiccup and 91% male that hospitalized due to hiccup affected by central nervous system (CNS pathology). The caused that listed as pathology problem due to hiccup is mostly related digestive system, musculoskeletal system, nervous system, respiratory system, and circulatory system.[3]

Hiccups sometimes can be triggered by bloated stomach, swallowing hot or irritating substances, triggered by some combination of laughing, talking, eating drinking or on hyperventilation person. This brief hiccup need to be evaluated if there is warning sign such as in neurological problem (weakness, numbness, seizure). General testing can be start by blood test, chest X-ray, and electrocardiography.[4]

Hiccups are myoclonic contractions that leading to movement of the inspiratory muscles, delayed than abrupt glottic closure, caused hic sound. By Newsom Davis, 1970, concepts hiccup is normally present after 8th week of gestation during active phases and tend to persist after birth. It is generally known that hiccup caused by sudden glottic closure during the forceful involuntary inspiration characteristic or consequences of adductor laryngeal muscle contraction. Hiccup also find on electrocardiogram tracing, appear as wide upward or downward deflexion of variable amplitude. Observations by Samuel, various diaphragm activity exist by contraction of the whole diaphragm but also can one or more segments that contributed. Based on electroencephalogram patients with prolong hiccup also shown the result of seizure activity.[5]

One of the common etiology hiccup related to gastrointestinal problem. Rapid stomach distension and irritation on gastric can induces hiccup. Severe and prolong hiccup lead to fatigue, weight loss, dehydration and even death. Since hiccup related to neurological reflec

arc of peripheral pathways and central midbrain modulation.[6]

Treatment for hiccup depending on the etiology itself. Mostly it better with physical maneuver or symptomatic drugs because no cause is found. The physical maneuvers supposed to interrupt the reflex arc such as breath holding, valsava maneuvers, swallowing a teaspoon of dry sugar, pulling knees to chest and many other maneuvers. The pharmacological therapy can be given when physical maneuvers failed. The drug therapy could be tapered up and down depend on the patient condition and the possible drug interaction. The pharmacological treatment given to persistent hiccup like dopamine antagonist (chlorpromazine, haloperidol, domperidone), suppresses repetitive myoclonic contraction (benzodiazepines), GABA-B agonist (muscle relaxant), D3 antagonist and 5-HT4 agonist central anti emetic and peripheral prokinetic (metoclopramide).[7]

In this case, the patient presented prolong hiccup, with respiratory infection with coincidence seizure.

CASE REPORT

A 57 years old male patient was brought to the emergency room (ER) with complaints of hiccups, wet coughing, nausea and vomiting since 5 days before. Hiccups since 5 days before, becoming more frequently and stayed longer. These caused patient had coughing, vomiting and had epigastric pain. Patient also presented burning sensation in esophagus and bitter in the mouth.

The hiccup persisted without any trigger, worsened after eat. These condition made patient trauma, so he lost his appetite. Patient already had medication before, but it didn't last long. Patient still had hiccups, nausea vomiting. In the emergency room, patient had generalized tonic clonic seizures that occurs less than 1 minute. Patient's family said that patient never had seizures before or history of neurological disorder.

On physical examination, vital sign was normal and epigastric tenderness was found when palpation. Initial laboratory results showed leucocytosis (15.73×103/µl) with haemoglobin count, haematocrit level, random blood sugar level, electrolyte was within normal. On the chest X-ray indicated infiltrates bilateral.

He was diagnosed with pneumonia, suspect GERD, observe seizures and prolonged hiccups. The patient initially received IVFD NaCl 0/9%, pantoprazole 40 mg every 12 hours, ondansetron 4 mg every 8 hours, cefoperazone 1 gr every 12 hours, domperidone 10 mg 3 times in a day, antacid tablets 3 times in a day, phenytoin capsule 100 mg every 8 hours, and chlorpromazine (CPZ) 25 mg (max 3 times in a day).

During hospitalization, patient also had head CT scan and there wasn't found any abnormality. Patient was being hospitalized for 5 days, and discharged with no symptoms, there wasn't another seizure and hiccups was reduced.

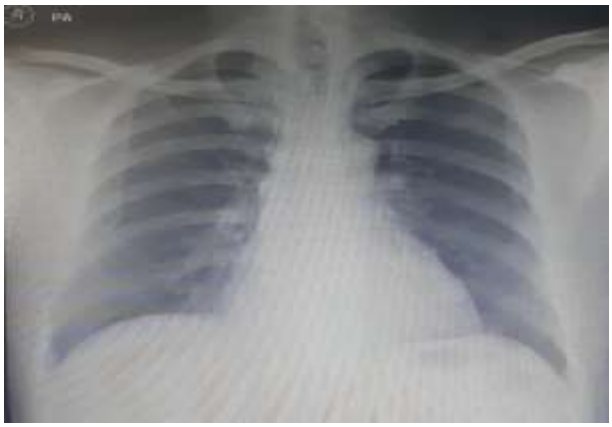

Figure 1: Chest X-ray.

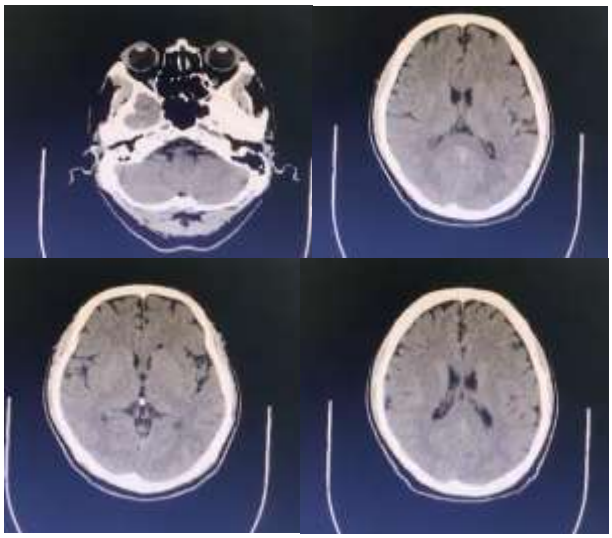

Figure 2: Head CT scan.

DISCUSSION

Hiccup is a common condition that can be experienced by everyone. Although, prolonged hiccup can reduce the quality of life and have potential become another serious disease. Based on Bailey 1943, hiccup reflex are comprised by afferent limb component, central processing unit component, and efferent limb component. This mechanism contributes to the thoracic outflow that conducted by somatic and visceral stimulus from central and peripheral nervous system. When there was disturbance to these pathways, there was protective response to close the glottis, resulting the "hic" sound. Besides the neurotransmitter pathway, GABA had inhibitory effect on the brain and spinal cord to altering the transmembrane potential that activated the pathway oh hiccup. As GABA can be used to eliciting the prolong hiccup, another neurotransmitter such as serotonin antagonist, acetylcholine also has role as drugs that can reduces the prolong hiccup.

The most common etiology of prolong hiccup caused by gastrointestinal problem, such as gastric irritation due to high gastric acid, over eating, consuming alcohol and smoking. Apart from gastrointestinal problem, prolong hiccup can be caused by toxic metabolites stress such as uremia syndrome, diabetes mellitus, and electrolyte imbalance. In serious cases, prolong hiccup may manifest in central nervous system disorder like ischemic or hemorrhage stroke, encephalitis infection or tumor.

It's important to know the etiology of prolong hiccup to reduce the possibility of serious illness. From the detailed history, asking about first symptoms, drug history, neurological, cardiorespiratory and abdominal symptoms. Comprehensive physical examination and laboratory examination may rule out the possible underlying cause of prolong hiccup.[2]

Prolong hiccup can be treated with GABA antagonist or dopamine. Frequently using chlorpromazine administrated orally 25 mg 3 times in a day or IM or IV 25-50 mg as a single dose. Some side effects have been reported by using this drug, like fatigue, nausea further more like somnolence, caused it works in central nervous system or neurological pathway. Prolong hiccup that caused by gastrointestinal disorder can be given with metoclopramide, as gastric emptying drug and decreasing the intensity of esophageal contraction. Some studies found there had been dyskinesia on long term medication. Another prokinetic agents like domperidone with minimal dose can be given in patients with prolong hiccup with observations from the high dose side effect like arrhythmia.

In this case, the patient was presenting prolong hiccup with vomiting and nausea that disturbed his life activity. He had been prescribed with oral medication in general practitioner before, but it doesn't work. He admitted to the hospital caused he was very weak, he had nausea vomiting every time he took drink or food during the hiccup that still exist. Furthermore, the patient had tonic clonic seizure in emergency room within seconds.

On the examination, was found vesicular breathing with fine crackles, tenderness in epigastrium, any other examination was within normal. Physical manoeuvres such as valsava maneuvers, breath holding were performed by the patient, but no relief of the hiccup appeared.

On the blood test found leucocytosis (15.730/µl) with neutrophil dominant with slightly hyponatremia (133 meq/l), with normal glucose and serum creatinine, liver and renal function was within normal limit. There was found pneumonia on the chest X-ray and normal limit on head CT scan. Due to facility limitations, additional test like chest CT with contrast, magnetic resonance imaging (MRI) with contrast can't be examined in this case.

Based on clinical conditions, patient getting better after 4-days hospitalizations. A previous case where patient with persistent hiccup of 4-days duration similar with this case, successfully recovered with antibiotic.[8] On this case, patient also suspect with GERD, presented with epigastric pain, retrosternal burning that improves with PPI therapy. Kockar et al reported two cases of hiccup that related with esophagitis and getting better when PPI therapy was initiated.[9] The symptomatic drug like domperidone and chlorpromazine also given to advancing the recovery. The consciousness, blood pressure, cardiac rhythm was also observed to considerate the possible side effects of the drug.[10]

While the seizure was considerate as coincidence accident, caused there is no historical of neurological disorder and the CT scan was in normal limit. Meantime, the seizure still observed until 6 months in the outpatient follow up.

CONCLUSION

This case description wants to highlight the importance of early recognition, treatment strategy, possible complication, and outcome of prolonged hiccup patient. Even hiccups are considered as common symptoms that can be last in minutes, the prolong or chronic hiccup can indicate the serious disease that disturbing the vagus nerve, phrenic nerve or sympathetic nerve. This case report concludes the mind map to reconsider any other disease as the underlying prolong hiccup using comprehensive history taking, physical examination, minimal laboratory test (due to facility limitations) and improvement of the patient condition.

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