A Case of Sick Sinus Syndrome Presenting as Exploding Head Syndrome

Hye Yun Kim, Do Young Yoon, Dong Sun Kim, Ji Sun Kwon and Hyun Jeong Han
Department of Neurology, Myongji Hospital, Kwandong University College of Medicine, Goyang, Korea

Exploding head syndrome (EHS) is a rare syndrome experienced with explosive noise happening in a head. A 78 year old man visited for intractable headache with explosive noises. His vigo-electroencephalography monitoring showed tachy-brady arrhythmia on electrocardiogram. We diagnosed as a sick sinus syndrome (SSS) presented with EHS. We suggest SSS should be considered with the elderly patients who have EHS symptom.

Key Words: Sick sinus syndrome, Headache.

Case Report

A 78 year old man visited our neurology clinic for intractable headache, which persisted for 2 months. He had no pertinent medical history such as hypertension, cardiac disease or diabetes mellitus. He described his symptoms as sudden attacks with big noise in his head like a bomb explosion and persisting headache for half or one hour. The location of pain was mainly vertex area with moderate to severe intensity. The patient said that the character of pain cannot be explained by a simple word and often experienced almost loss of consciousness with the pain. The pain attack was not controlled by pain medication and occurred two or three times a day, mainly in the evening or at night. The attacks were aggravated at night before bed time.

His blood pressure was 130/75 mm Hg and there was not significant finding on results of routine serologic and cardiologic studies including electrocardiogram (ECG). Also on the result of brain magnetic resonance imaging, there were no significant lesions and no abnormality of arterial nor venous studies on the angiography. To rule out seizure episode, video-electroencephalogram (EEG) monitoring with ECG was performed from the evening to the next morning. During the video EEG monitoring, there was no significant finding, however, it was shown a tachy-brady arrhythmia accompanying with the headache attack on the ECG (Fig. 1). In detail, the patient was awake but calmly lying down during having tachy-brady arrhythmia and sinus pause on the ECG. In the middle of pause was presenting, the patient took action to sit up and was complaining having noise attack from just before. We can mark the point of the attack started and assume the point was at several seconds after sinus pause.

Though detail cardiologic evaluations, he was diagnosed with sick sinus syndrome (SSS) and the pain attack gradually disappeared with insertion of pacemaker.

Discussion

Sick sinus syndrome is a condition, which involves sinus
A Case of Sick Sinus Syndrome Presenting as Exploding Head Syndrome

node dysfunction, and commonly affects elderly patients. SSS has multiple manifestations on ECG, such as sinus bradycardia, sinus arrest, sinoatrial block, and alternative bradycardia and tachycardia, called bradycardia-tachycardia syndrome, which was present in the patient.

Patients with SSS are often asymptomatic or nonspecific. Symptoms are thought to be the result from decreased cardiac output, during arrhythmic attacks. Therefore, most patients with SSS sometimes showed presyncope or syncope, as a result of cerebral hypoperfusion. Other symptoms include wakefulness during night, memory loss, errors in judgement, lethargy and lightheadedness. In the case, there is no significant finding on screening ECG and no other significant symptom which can be presented a cardiologic disease. The patient only explained the experience of explosive noise in his head and persistent headache. The symptom corresponded with EHS and he was diagnosed as a EHS ruled out of other cardiologic issues.

The diagnosis of SSS might be difficult because the symptoms are variety or asymptomatic. Therefore, many patients with SSS are often ruled out of other diseases, like as happening in this case. Some elderly patients with SSS often misdiagnosed as a senile dementia presenting with gradual loss of memory.

Through a 24 hour Holter monitoring detecting cardiac arrhythmia is needed for a proper diagnosis of SSS. There are many other methods to diagnosis SSS such as isometric hand grip exercise, carotid massage or Valsalva’s maneuvers undergoing ECG monitoring. In this case, the patient was performed a 24 hours Holter monitoring to diagnose of SSS. The patient was inserted pacemaker and did not experience the symptom that he complained of before.

Exploding head syndrome is not well known to physicians. The causative etiology is also not understood well. The possible mechanisms have been suggested the result of a sudden movement of a middle ear component of the eustachian tube and minor seizure in temporal lobe. To correct diagnosis, we should rule out the other diagnosis which can have similar symptoms such as thunderclap headache, hypnic headache, nocturnal paroxysmal hemicrania, low volume subarachnoid hemorrhage and nocturnal epilepsy. Therefore, the patients with EHS need to perform brain images or EEG. The loud noises, which EHS patients can have, might also be a common symptom in SSS. On another similarity is the range of frequent affected age between EHS and SSS. With that, we suggest adding SSS as another differential diagnosis of EHS especially in elderly patients with or without risk factors of cardiac problems.

REFERENCES