An unusual case of recurrent syncope in elderly male: A case report

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Abstract
Carotid sinus Hypersensitivity (CSH) or syndrome (CSS), is a frequently encountered and potentially treatable condition in the elderly, that may be characterized by neurological symptoms or an exaggerated cardiovascular response. Mechanical stimulation of carotid sinus leads to an exaggerated baroreflex response, which may manifest as bradycardia and/ or hypotension along with a reflex mediated syncope. We report a 70yr old male patient, who presented with complaint of multiple recurrent episodes of syncope and fall associated with bradycardia while shaving. A diagnosis of cardio-inhibitory type of CSH was made and the patient was discharged after successful implantation of a cardiac pacemaker.

Keywords: Recurrent syncope attacks, Cardio-inhibitory type, Pacemaker implantation.

Introduction
Carotid sinus Hypersensitivity (CSH) or syndrome (CSS), is a frequently encountered and potentially treatable condition in the elderly.[1] The presentation of CSS may be variable, ranging from a mild syncope to a serious cardiac arrest.[1,2] CSS is a clinical diagnosis, that may be characterized by neurological symptoms or an exaggerated cardiovascular response.[1,3] Mechanical stimulation of carotid sinus during manoeuvres like carotid sinus massage, turning of head, straining etc. leads to an exaggerated baroreflex response, which may manifest as bradycardia and/ or hypotension along with a reflex mediated syncope.[4] CSS has been classified into 3 types namely, cardio-inhibitory vasodepressive, and mixed forms.[5] Pacemaker implantation and pacing, is nowadays widely recognized as treatment for CSS, and is known to cause a reduction in frequency of syncopal episodes.[1]

Case Report
A 70-yr-old male patient presented to OPD with history of a sudden episode of fall at home. The patient gave a history of sudden fall at home while shaving, during the early morning hours which was followed by loss of consciousness for a brief period of 2 minutes. The patient later regained consciousness.

There was no history of vomiting, headache, seizures, loss of bowel or bladder control.

The patient gave a history of similar episodes in the past for the last 6 months.

The patient was a known case of hypertension, Nondiabetic on regular medication with tab Telmisartan 20mg once daily for 5 years. There was no significant past medical or surgical history in the past.

On examination, the patient was conscious, oriented, afebrile with a pulse rate of 88/min, respiratory rate of 22cycles /min, blood pressure in right arm supine position was of 136/84mmhg. Systemic examination was unremarkable. The patient underwent MRI brain which was normal except for age-related atrophic changes. EKG was done which showed normal sinus rhythm. 2D echo was done with EF of 60% and grade I diastolic dysfunction. The patient was advised for carotid doppler to look for luminal narrowing. While performing the carotid Doppler study, the patient complained of giddiness and blackout for two minutes when the patient was asked to turn his neck laterally to the left side.

It was then that, a possibility of carotid hypersensitivity syndrome was suspected. The patient was further subjected to Right sided carotid sinus stimulation with continuous EKG and vitals monitoring. The patient showed similar complaints with fall of heart rate up to 30/ min within 2 seconds with no fall in blood pressure. The patient was immediately given Inj Atropine 0.6mg/ml intravenously.

Therefore, the patient was diagnosed with a cardioinhibitory type of carotid hypersensitivity syndrome.

A pacemaker was implanted, Cardiac pacing was done and the patient was successfully discharged with health education and counseling regarding the precipitation of symptoms and prevention of maneuvers leading to CSH.

Discussion
Diagnosis of CSH should be kept as a possibility in all patients with unexplainable reasons of syncopal episodes, especially if loss of consciousness is transient, with no obvious prodromal symptoms and associated with immediate recovery.[5] The carotid sinus is a body located above the carotid bifurcation, in the walls of the arch of the aorta and the carotid arteries.[3] Carotid sinus, regulates the blood pressure via baroreceptor mechanism. [6] In response to a rise in the blood pressure, carotid sinus discharges inhibitory impulses, to cardioinhibitory areas present in the reticular formation of the medulla. This results in an increased parasympathetic response and a decreased sympathetic response ultimately leading to systemic vasodilatation, decreased heart rate, negative inotropic effect, fall in the systemic blood pressure and prolonged AV Nodal conduction time.[3] Manoeuvres like head turning, tight

collar, neck straining causing mechanical stimulation of baroreceptors present in walls of carotid sinus, may lead to an exaggerated overt response as in patients with CSH. These patients may develop bradycardia, hypotension or in rare cases even asystole.[1,2] Tan MP et al., have stated in their study that in patients of symptomatic CSH presenting with a fall in blood pressure, have a decreased cerebral autoregulatory blood flow.[7]

CSH, has been primarily classified into 2 types: Cardio-inhibitory and vasodepressor. [8] According to the study conducted by Schellack J et al., the time duration of asystole varied from 2 to 10 seconds (with a mean of 4.4 seconds), in patients with cardio-inhibitory CSH and the extent of arterial vasodepression varied from 30 to 130 mmHg (with a mean of 41 mmHg), in patients with vasodepressor CSH.[8]

CSH, is now-a-days known to be a treatable condition. The treatment modality of CSH varies according to the type of CSH. The primary treatment modality in cardio-inhibitory CSH is Pacemaker implantation or cardiac pacing while in vasodepressor CSH it is pharmacological therapy.[8] Other less frequently used modalities for CSH treatment include, Denervation of the carotid sinus surgically, irradiation of the carotid sinus or excision of the local tumor or mass which may be compressing the carotid body.[3,8]

Conclusion

CSH is a potentially treatable cause of recurrent unexplained syncopal episodes, AV blocks and inappropriate symptomatic bradycardia.[3,9] Physicians need to be aware and keep a possibility of CSH as diagnosis in patients presenting with symptoms of carotid sinus syncope. [3] Once a diagnosis of CSH, has been made it is important to identify the type of CSH and treating it appropriately.

Conflict of Interest: None.

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How to cite this article: Yarappa R, Gatiani S, Acharya S, Kumar S, Gagneja S. An unusual case of recurrent syncope in elderly male: A case report. *Ann Geriatrics Educ Med Sci* 2019;6(1):16-7.