Case Report

Transient Carotid Sinus Hypersensitivity Resolved by Surgery: A Case Report and Review of Literature

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Abstract

Patients presenting with carotid sinus syndrome (CSS) are predominantly from elderly population experiencing dizziness and syncope [1-3]. This syndrome is characterized by the presence of an abnormal baroreflex response spontaneous or during carotid stimulation, leading to a systole and hypotension [2]. CSS have three different expressions; the mixed type includes both cardio inhibitory and the vasodepressive form, with hypotension and a prolonged ventricular pause [4]. We are discussing a case of a 70 years old male with a history of diffuse atherosclerotic heart disease with severe obstructive carotid disease with the CSS mixed type.

INTRODUCTION

Patients presenting with carotid sinus syndrome (CSS) are predominantly from elderly population experiencing dizziness and syncope [1-3]. This syndrome is characterized by the presence of an abnormal baroreflex response spontaneous or during carotid stimulation, leading to a systole and hypotension [2]. CSS have three different expressions; the mixed type includes both cardio inhibitory and the vasodepressive form, with hypotension and a prolonged ventricular pause [4]. We are discussing a case of a 70 years old male with a history of diffuse atherosclerotic heart disease with severe obstructive carotid disease with the CSS mixed type.

CASE PRESENTATION

This is a case of a 70 years old male patient (p.) with a medical history of severe peripheral vascular disease status post iliofemoral bypass grafting. Severe bilateral disease with 90% obstructive disease in the right carotid artery.

He was scheduled for endarterectomy of the right carotid artery. During evaluation, prior to surgery the carotid artery was massaged, when he developed a systole (Figure 1). Non-contrast head computer tomography was normal without evidence of ischemia. He received a dual chamber pacemaker, as a precaution, followed by a successful endarterectomy. After surgery he had mild carotid massage without asystole. Producing only mild bradycardia, but no asystole. He has remained asymptomatic. Holters have been negative for electrocardiographic abnormalities including asystole.

DISCUSSION

Syncope is one of the most common factors increasing morbidity and reduced quality of life in elderly p. According to the World Health Organization [5], syncope lead to 20-30% of mild severe injuries, and more than 50% of hospitalizations among people over 65 years and older. CSS is known as one of the main causes of falls in elderly population [6]. CSS is diagnosed with carotid sinus massage in the supine and in the upright position [6,7]. It could produce asystole exceeding 3 seconds (cardio inhibitory), reduced systolic blood pressure, and dizziness.

Figure 1 EKG tracing during carotid massage showing asystole.

pressure lower than 50 mmHG (vasodepressor) or both (mixed) [7]. The arterial baro receptors are very sensitive as shown in this P, when they are affected by different diseases as in this pathology.

In this report, the p. was diagnosed with the mixed type of CSS in presence of sinus arrest and hypotension due to ischemic carotid hypersensitivity. The presence of different factors such as DMT2, hypertension and hyperlipidemia, has been demonstrated to have a strong influence. According to literature, the risk of carotid artery stenosis is greater in diabetic patients, those with history of ischemic heart disease, cigarette, alcohol use and hyperlipidemia, influencing in the development of atherosclerotic changes in the carotid arteries [8-10].

This case suggests that the p. has an induced carotid hypersensitivity due to severe atherosclerotic carotid disease producing transient electrocardiographic changes and hypotension. The P. underwent carotid endarterectomy of the right carotid artery which eliminated the carotid hypersensitivity, producing syncope. This has been reported by previous studies, although it is a rare event [11-13]. This shows that plaque deposition may blunt the baroreflex properties of this structure (transient) and be removed surgically.

Surgery must be done promptly to avoid cardiovascular catastrophe, especially ischemic changes in the brain, heart of sudden death. Close follow up should be done in these groups of patient after surgery and normalize comorbidities to avoid further baroreceptors abnormalities.

REFERENCES


