Prevention of Syncope during IUD Placement, a quality improvement project

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Abstract

Syncope is a common experience that patients within the medical community experience. The syncope and the sensation of syncope is secondary to a vagal response that causes excessive pooling in the peripheral vasculature leading to an overall decrease in blood flow to the cerebral tissue. This typically presents during medical procedures including cervical or uterine biopsies, pap smears, blood draws, injections, or seeing the site of blood. This presentation is usually diaphoresis, facial pallor, dilated pupils, and fatigue. The treatment should include having the patient recognizing these symptoms and to have them isometrically contract their extremities and other counter pressure maneuvers. The efficacy of these symptoms were studied which found that recurrent syncope was decreased (32 vs 51 percent), via patient education and early physician recognition.

Introduction

Syncope is a clinical syndrome in which transient loss of consciousness (TLOC) is caused by a period of inadequate cerebral nutrient flow, most often the result of an abrupt drop of systemic blood pressure. Reflex syncope (previously termed neurally-mediated syncope) is TLOC due to a reflex response that encompasses vasodilatation and/or bradycardia (rarely tachycardia), leading to systemic hypotension and cerebral hypoperfusion. Vasovagal syncope is the most common cause of syncope. Vasovagal syncope may be suggested or diagnosed by a specific history with well-known triggers. Acute vasovagal reactions leading to syncope or presyncope are common in a number of stressful settings, such as blood donation or IUD insertion. Vasovagal reactions during an IUD insertion and are characterized by presyncope, syncope, nausea, bradycardia, and hypotension. Most reactions are transient and resolve spontaneously.

A vagal episode begins with excessive pooling of blood in the arms and legs. This causes a sudden drop in the return of blood from peripheral veins, triggering a cardiac “hypercontractile” state leading to tachycardia. Paradoxically, this provokes both a reflex bradycardia and a drop in peripheral vascular resistance, leading to decreased profusion to systemic end organs. As a result, the decreased blood flow to the brain leads to sensations of presyncope and syncope.

During these types of procedures, it is important to maintain communication with your patient in order to be able to recognize the symptoms of a vasovagal reaction. This will help you to notice the signs and allow the patient to let you know about an early warning symptom.

Treatments:

There have been many studies in the field of pre-syncope secondary to a vasovagal reaction. Certain techniques have been employed for prevention and will be presented here:

- Isometric contraction: Crossing of arm and leg muscles.
- Counter pressure maneuvers: tensing arms, clenching fists, leg pumping.
- Laying supine

The potential efficacy of these maneuvers was evaluated in a randomized trial of 223 patients with recurrent vasovagal syncope and recognizable prodromal symptoms. Patients were randomly assigned to lifestyle modification (eg, avoidance of triggers, increasing fluid and salt intake, lying down at the onset of prodromal symptoms), or lifestyle modification plus physical counter pressure maneuvers. Over a mean follow-up of 14 months, patients assigned to counter pressure maneuvers were significantly less likely to have recurrent syncope compared with those assigned to lifestyle modification alone (32 versus 51 percent).

Prevention:

Vasovagal reactions (a.k.a. neurocardiogenic syncope) occur more frequently in people who have a predisposition. As a result, we should ask our patients if they have ever fainted at the sight of blood or lost consciousness prior to having an injection or procedure. Prior to a procedure:

- Be sure your patient is well hydrated.
- Be sure your patient has eaten.
- Teach your patient how to stop the reflex if s/he starts to feel early warning symptoms.

Other techniques that may be helpful is to recommend that patients cross their legs before a blood draw or an injection.

Although vasovagal syncope generally has a benign prognosis, a frequent concern is the potential for injury particularly during certain activities, such as driving.

As a result, early recognition could ward preventable circumstances that may ensue.

As shown previously, patients assigned to counter pressure maneuvers were significantly less likely to have recurrent syncope compared with those assigned to lifestyle modification alone (32 versus 51 percent).

Bibliography

1. Van Dirk N., Quartieri, F., & Blanc, J. (2006). Effectiveness of physical counterpressure maneuvers in preventing vasovagal syncope: The Physical Counterpressure Manoeuvres Trial (PC-Trial). *Am Coll Cardiol., 48*(8), 1652
2. Krediet CT (2002). Management of vasovagal syncope: controlling or aborting faints by leg crossing and muscle tensing. Circulation. 106(13): 1684-9
3. Faden, A (1977). Fits, Faints, and IUD. Annals of Neurology. 1 (3) 306.