Aspects relevant to the identification of intermittent claudication

Aspectos relevantes para identificação da claudicação intermitente

Aspectos relevantes para la identificación de la claudicación intermitente

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ABSTRACT

Intermittent claudication (IC) is one of the defining characteristics approved by NANDA International (NANDA-I) for the nursing diagnosis, *Ineffective Peripheral Tissue Perfusion*. For the correct identification of this defining feature, the nurse must know the clinical characteristics and have specific data collection skills. The aim of this article was to highlight aspects relevant to the identification of IC during the assessment and physical exam performed by the nurse. Based on specific guidelines and other publications on the subject, we described the clinical characteristics of IC and its differentiation from other phenomena that have nociceptive effects on lower limbs. Questionnaires were applied for the traceability of IC, for changes in physical examination, which may accompany the symptom and evaluation through the ankle-brachial index.

Keywords: Intermittent claudication/diagnosis; Medical history taking; Physical examination

RESUMO

A claudicação intermitente (CI) é uma das características definidoras aprovadas pela *North American Nursing Diagnosis Association – International* (NANDA-I) para o diagnóstico de enfermagem Perfusão Tissular Periférica Ineficaz. Para a correta identificação dessa característica definidora, o enfermeiro deve conhecer suas características clínicas e possuir habilidades propedêuticas específicas. O objetivo deste artigo foi destacar os aspectos relevantes para identificação da CI durante aanamnese e o examw físico realizado pela enfermeira. Com base nas diretrizes específicas e outras publicações sobre o tema, foram descritas as características clínicas da CI e sua diferenciação de outros fenômenos álgicos que acometem os membros inferiores. Foram apresentado questionários para a rastreabilidade da CI, busca de alterações no exame físico, que podem acompanhar o sintoma e a avaliação por meio do índice tornozelo-braquial.

Descritores: Claudicação intermitente/diagnóstico; Anamnese; Exame físico

RESUMEN

La claudicación intermitente (CI) es una de las características definidoras aprobadas por la *North American Nursing Diagnosis Association – International* (NANDA-I) para el diagnóstico de enfermería Perfusión Tisular Periférica Ineficaz. Para la correcta identificación de esa característica definidora, el enfermero debe conocer sus características clínicas y poseer habilidades propedéuticas específicas. El objetivo de este artículo fue destacar los aspectos relevantes para la identificación de la CI durante la anamnesis y el examen físico realizado por la enfermera. Con base en las directrices específicas y otras publicaciones sobre el tema, fueron descritas las características clínicas de la CI y su diferenciación de otros fenómenos álgicos que afectan a los miembros inferiores. Fueron presentados cuestionarios para el rastreamiento de la CI, búsqueda de alteraciones en el examen físico, que pueden acompañar al síntoma y la evaluación por medio del índice tobillo-braquial.

Descriptores: Claudicación intermitente/diagnóstico; Anamnesis; Examen físico

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INTRODUCTION

Nursing diagnoses represent an important work tool for nurses as they express situations experienced by people who require nursing care. Among the 201 nursing diagnoses approved by the NANDA-International (NANDA-I) is Ineffective Peripheral Tissue Perfusion (IPTP) defined as a "decrease in blood flow circulation to the periphery that may compromise health"[1].

This is a real nursing diagnosis for which there are 12 approved defining characteristics (DCs): Intermittent claudication (IC) or simply Claudication; Color does not return to leg on lowering it; Altered skin characteristics (color, elasticity, hair, moisture, nails, sensation, temperature); Delayed peripheral wound healing; Skin color pale on elevation; Extremity pain; Edema; Altered motor function; Blood pressure changes in the extremities; Paraesthesia; Diminished or absent pulses[1].

Some authors have recently being concerned with the clinical validation of these DCs[2-4]. It is worth noting that IC and change in peripheral pulse amplitude were validated in patients whose related factor is reduced cardiac output[3]. It is well established the IC is the main clinical manifestation of an imbalance between supply and demand of oxygen and nutrients to the skeletal muscles of the lower limbs in patients with obstructive arterial lesions[5]. There is evidence that this DC is accompanied by important functional limitations, which consequently worsen patients' quality of life[4,6-7].

Despite its relevance, IC is not identified in 75% of patients who experience it[8]. Some hypotheses are raised to explain such a fact. First, IC most frequently affects elderly individuals, who attribute the symptom to the natural aging process and do not complain about it to health professionals. The second hypothesis is that health professionals do not plan for an active search for the symptom. Given the context, this study highlights aspects that are relevant for the identification of IC during anamnesis and physical assessments performed by nurses.

Intermittent claudication

IC can be described by patients as involving fatigue, discomfort, cramps, paralysis, tightness or pain in a specific muscle group in the lower limbs (usually including the calf) during the expenditure of effort and that is relieved with rest. IC results from arterial stenosis in the lower limbs, caused by atherosclerosis. Similarly to what happens in the case of coronary problems, individuals with IC possess appropriate blood flow to the lower limbs when at rest and that is why they do not present that particular symptom. However, this flow becomes inadequate to meet metabolic needs during exercise (effort) given increased local muscle demand[5]. Since IC is a manifestation of systemic atherosclerosis, associated risk factors are similar to those for other atherosclerotic diseases such as age, male gender, smoking, sedentariness, obesity and diabetes[9-10].

Identifying the site affected by pain or discomfort, its characterization, relationship with exercise and rest, and obtaining knowledge concerning the patient's clinical history are useful in discriminating claudication of arterial origin from other causes. To make this discrimination simpler, with the exception of arterial claudication, claudication of other origins improves, in general, with postural changes and/or persists even during rest[5].

Other strategies used to identify IC are: the use of specific questionnaires, the search for evidence in physical assessments that indicates poor tissue perfusion, and ankle-brachial index (ABI).

Questionnaire to detect IC

An adjuvant method to screening patients with IC that can be employed by nurses is the use of specific questionnaires. A questionnaire was proposed in 1962 aiming to aid in the identification of IC. Even though it is a questionnaire adopted by the World Health Organization, it was never validated for Portuguese[11]. Years later, the Edinburgh Claudication questionnaire was developed and its translation was recently validated in Brazil[12]. This questionnaire is composed of six questions: 1) Do you get pain or discomfort in your leg(s) when you walk?; 2) Does this pain ever begin when you are standing still or sitting?; 3) Do you get it if you walk uphill or hurry?; 4) Do you get it when you walk at an ordinary pace on level?; 5) What happens if you stand still?; 6) where do you get this pain or discomfort? The result is considered positive (presence of IC) if questions 1 and 3 are answered "yes", "no" is the answer for question 2, "generally disappear in 10 minutes or less" is the response to question 5, and the affected areas are "calf" and/or "thigh" and/or "gluteal region". Question 4 defines how severe the IC is[12].

Physical assessment

The findings include skin alterations and appendages compatible with reduced tissue nutrition. Assessment of lower limbs may reveal thin, dry and scaly skin in addition to thinning hair. Extremities may be pale and cold and nails may be brittle[13].

The femoral arterial pulse, poptileal, dorsal pedis and posterior tibial arteries should be palpated in the corresponding anatomic sites and their amplitude and symmetry should be evaluated[13]. Amplitude in patients with IPTP may be absent or reduced.

Auscultation of the inguinal region may reveal the presence of a murmur in the femoral arteries[13]. A recent study showed that the odds ratio of individuals who present changes in peripheral pulse amplitude or femoral

artery murmur to present IPTP is 1,024 times (CI = 61 - >999 p < 0.0001)[4].

Other tests may help to identify compromised peripheral arterial circulation such as: pallor upon elevation, venous filling time, reactive hyperemia and paddling movements or flexion of the thighs[13].

Ankle-brachial index

ABI is a simple, low cost, objective, non-invasive and reproducible method that consists of computing the ratio between the highest systolic pressure measured in the ankle (pedis and tibial arteries) and the highest systolic pressure measured in the arms (assuming an absence of arterial obstruction in the upper limbs). The systolic pressures should be obtained through an ultrasonic flow detector and a blood pressure cuff of appropriate size[5,13-14]. ABI values < 0.90 present high sensitivity (79% to 97%) and specificity (96% to 100%) to identify stenosis above 50% of the vascular bed regardless of the presence of symptoms. IC is most common in patients with ABI < 0.80 and ABI levels ≤ 0.4 are related to the presence of ischemic pain at rest and ischemic ulcerations in the lower limbs[5,15].

Hence, ABI is currently a measure widely accepted to detect changes in blood pressure in the lower extremities[5,13-14], which is also a DC of the nursing diagnosis IPTP[1].

FINAL CONSIDERATIONS

IC is acknowledged as the most important clinical manifestation of decreased blood flow to the lower limbs in the case of patients with diffuse atherosclerotic disease. Therefore, IC should be taken into account when the nursing diagnosis IPTP is investigated and the nurse is evaluating patients at risk. There are already relatively simple strategies to identify IC that can be routinely used during anamnesis and physical assessments performed by nurses as described in this paper. The presence of IC can support nurses' decision-making to confirm the nursing diagnosis IPTP, improving diagnosis accuracy. Consequently, nurses can propose appropriate interventions to contribute to increasing the functional capacity of these patients and their quality of life.

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