The 5C model: Clinical approach to peripheral neuropathy

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Abstract

Peripheral neuropathy is a common condition which is often missed in primary care. The 5C model simplifies the clinical approach to peripheral neuropathy, listing steps of history taking, physical examination and investigations. One begins by eliciting complaints and concerns, and "classifying by the calendar". Comorbid and contributory diseases, concomitant medications and contacted toxins, are then identified. The complications of neuropathy, and the corrective measures undertaken so far, are explored. This is followed by a physical examination, and supplemented by investigations. Once the diagnosis is confirmed, comprehensive management, guided by the LEMON mnemonic, which lists the various facets of neuropathy care, has to be planned.

KEYWORDS: Diabetes, nerve care, neuropathy, nutrition, person centred care, primary care.

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Introduction

Peripheral neuropathy is one of the most commonly encountered conditions in medical practice.[1] This is true in the diabetes clinic as well.[2] Peripheral neuropathy, however, remains underdiagnosed across health care settings. Delayed suspicion, screening and diagnosis leads to avoidable morbidity, and at times, mortality.

The need for simplicity

Recent efforts at improving the diagnosis and management of peripheral neuropathy have created useful tools and aids. One such aid is a five-point guide to peripheral neuropathy.[3] This reminds health practitioners to confirm the trajectory of neuropathy related complaints; explore comorbid diseases, concomitant medication and exposure to toxins; assess the symptoms of the patient; perform a physical examination; and order investigations as required. This five-step process assists physicians in ensuring timely detection of peripheral neuropathy, through an easy and efficient checkup.

This model has simplified and demystified neuropathy diagnosis, and contributed to enhanced awareness about the condition

The 5C model

We share another model, the 5C model, which simplifies the approach to peripheral neuropathy. The earlier construct lists 3 steps in history, one in history, one in examination, and one in investigation.[3] Similar to the earlier framework, the 5C model includes 3 steps of history taking, and one of physical examination and investigations, together. The order of history taking has been changed, however, to reflect the order of questioning used in routine clinical praxis. The traditional hierarchy of conversation, beginning with the chief complaint and going on to significant present and past history, makes the 5C system easier to incorporate and integrate into daily praxis. One point related to action has been added. The alliterative listing of the five points makes the current model reader-friendly user-friendly as well.

The 5Cs to clarity

The approach to peripheral neuropathy begins with taking a history to elicit the complaints and concerns of the patient. The disease is also "classified by the calendar", as being acute, subacute or chronic, according to the duration of symptoms. The next step is to identify the comorbid and contributory diseases, as well as concomitant medications and contacted toxins, which may have an influence on nerve health. The complications of neuropathy, such as foot ulcers, and the corrective measures undertaken for neuropathy so far, including

Table-1: The 5C Approach To Diagnosis Of Peripheral Neuropathy.

• Complaints and concerns; Classification, by the calendar
• Comorbid and contributory diseases; Concomitant medication and contact with toxins
• Complications; Corrective measures taken
• Confirmatory examination; Corroboration with investigations
• Click and confirm the diagnosis; Correct the condition

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Table-2: : The LEMON Of Nerve Care.

Lifestyle optimization, e.g., appropriate exercise
Endocrine optimization, e.g., euthyroid status
Metabolic optimization, e.g., glucose, lipid control
Orthotic optimization, e.g., appropriate footwear
Nutritional optimization, e.g., vitamin sufficiency

medication, folk remedies, topical treatments and physical modulation, are also discussed.

Once a history has been taken, neuropathy is confirmed by a physical examination. This includes assessment by simple tests such as cotton swab, 10g monofilament 128Hz tuning fork, pinprick and elicitation of reflexes.[4,5] The examination is supplemented by investigations, which may corroborate the diagnosis and etiology of peripheral neuropathy.

The fifth, and last step, is to confirm the diagnosis of neuropathy, and plan its management. While the specific etiology, if identified, must be addressed, a few aspects of nerve care are listed in Table 2.

Summary

The main aim of the 5C model is to empower primary care physicians, as well as paramedical professionals, to diagnose and address peripheral neuropathy. This is done by sharing a simple, step wise process which can be integrated at all levels of health care. This process relies on clinical acumen and readily available office tools and does not require expensive investigations.

This communication paraphrases the 'good clinical sense' learnt from our teachers and colleagues. We hope that the 5C model will enhance quality of clinical interaction, as well as care, not only in the field of neuropathy, but across all medical and surgical specialties.

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