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The Diagnosis of Shoulder Pain in Primary Care

Shoulder pain is a common and disabling complaint that is associated with high morbidity and significant health care costs. The diagnosis of shoulder pain is complicated by similar clinical presentations of different shoulder disorders and a lack of validated clinical examination tests and diagnostic criteria in primary care populations. Radiological imaging investigations are frequently used to aid the diagnostic process, however the relevance of imaging findings to symptoms of shoulder pain remains unclear and the diagnostic value of imaging findings in identifying symptomatic shoulder pathology remains unknown.

The aim of this research was to evaluate the diagnostic accuracy of a clinical examination for identifying a predominant subacromial, acromio-clavicular joint and glenohumeral joint pain source, and to assess the added value of diagnostic imaging findings for identifying symptomatic pathology affecting these structures. All participants in this diagnostic accuracy study received a clinical examination, a series of diagnostic imaging investigations (x-ray and diagnostic ultrasound scan) (index tests) followed by a diagnostic injection of local anaesthetic (diagnostic block) into the subacromial bursa and acromio-clavicular joint (reference standard tests). Those not reporting at least 80% reduction in pain (positive anaesthetic response) following the subacromial bursa or acromio-clavicular joint diagnostic block also received a glenohumeral joint diagnostic block performed as part of a magnetic resonance arthrogram investigation. Results of the clinical examination and diagnostic imaging investigations (index tests) were compared with results of the reference standard tests to estimate the ability of these clinical examination and imaging findings to accurately identify a predominant subacromial, acromio-clavicular joint or glenohumeral joint pain source and to detect the presence of rotator cuff tears.

Combinations of clinical examination features were identified with the ability to accurately identify those likely to report a positive anaesthetic response following subacromial bursa and acromio-clavicular joint diagnostic block. Overall the added diagnostic value of imaging findings for predicting an 80% positive anaesthetic response was limited due to the low prevalence of imaging findings. Analysis of diagnostic accuracy of clinical examination and imaging findings for predicting a positive anaesthetic response following glenohumeral joint diagnostic block was beyond the scope of this research. Clinical examination predictors of rotator cuff tears were identified that were able to accurately identify the presence of a large or multi-tendon rotator cuff tear that may require specialist evaluation.

The ability to accurately diagnose painful subacromial and acromio-clavicular joint disorders in primary care using combinations of clinical examination features appears to be possible for a small proportion of patients. Imaging findings may also improve the accuracy of diagnosis for these conditions for a small number of patients however the relative benefit of these investigations should be weighed against the availability and cost of the procedure. For many patients, diagnostic injections of local anaesthetic may provide an efficient and cost-effective method of assessing the contribution of the targeted structure to symptoms of shoulder pain. Results of this research may provide a framework that can be used by primary care practitioners to guide diagnostic processes for painful shoulder disorders, enabling more accurate and efficient identification of these conditions.

Dr Angela Cadogan
Nordic walking for Parkinson's disease: A single case design

The use of readily available walking poles could help people with Parkinson's disease to improve their mobility. A repeated measures mixed methods single case design was undertaken to test the feasibility of protocols for a larger mixed methods investigation of the effect of Nordic and ordinary walking on physical function and wellbeing in people with Parkinson's disease. There was no significant change in the quantitative measures of physical function. Qualitative data indicated the participant considered Nordic walking more beneficial than ordinary walking. During Nordic walking the patient felt more stable, did not have to focus on walking and step length increased. The patient also reported coping better with daily activities and a general improvement in health. The trial opens the door for further research.

Dr Sandra Bassett, Jenny Stewart and Lynne Giddings

Age dependent differences when descending a step

Patterns of muscle activation change with increasing age. There is some evidence to suggest that, in weight bearing joints this change in the eccentric, protective function of muscles may expose the joints to damage. The increase in osteoarthritis in the sixth decade of life coincides with a change in neuromuscular control and a consequent reduction in attenuation of impact may predispose the joints to damage. Twenty participants took part in this exploratory study. Ten in the older group of 60-80 years, mean 65.3 (SD 5) years and ten in the younger age group of 20-30 years, mean 22.8 (SD 2.5) years. The variables measured were the maximum joint range of motion of the hip and knee during early stance in step descent. There was a significant difference in both the amount of knee flexion and the amount of activity of the vastus lateralis muscle during impact between older and younger adults. Older adults had significantly less knee flexion during a step descent activity than younger adults (F(1,18)=5.48; p=.031) and significantly more vastus lateralis activity during a step descent activity than younger adults (F(1,18)=5.21; p=.035).

It would therefore appear older and younger adults use different strategies of muscle activation and joint range of motion around the knee of the leading leg during the step descent. Older adults used more vastus lateralis activity perhaps to increase stiffness in the knee, leading to a reduction in range of motion at impact, these strategies have the potential to increase the impact of a step and therefore cause jarring and possible damage. The decrease in knee flexion and increase in percentage of vastus lateralis activation in the older age group were two findings that would have the potential to increase the impact of a step descent. This study recruited healthy active older adults and differences in impact may be observed in an older or less active population, or in those with joint pathology such as osteoarthritis.

Niki Saywell

Older Adults at Risk of Falls

The aim of this study was to investigate eye and whole body movement strategies during a step turning task in older adults at risk of falls compared to healthy older adults. Older adults at risk of falls were about three times as likely to use a contralateral strategy compared to healthy older adults. While this may suggest more flexibility in the turning programme, it may also contribute to an increase in falls risk. Findings from the current study suggest that older adults may move more en-bloc compared to previous studies of young adults. Falls risk in older adults may contribute to differences in the onset order and latency of segmental movement, and may have some relationship to the direction of turn and preference of turning strategy.

Strategies to address this problem should be integrated into fall prevention programmes.

Todd Stretton