Anterior Luxation (AL) Test: validation of a new test for diagnosis of the ligamentum teres tear

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INTRODUCTION

Ligamentum teres (LT) has a role in hip biomechanics, stability, nociception and proprioception. Lesions of LT may be associated with pain and/or instability of the hip. We describe a new test to assess hip joint instability associated with ligamentum teres injury.

OBJECTIVES

Prospective validation of a new clinical test to assess injury of ligamentum teres related hip instability.

MATERIALS AND METHODS

Three independent examiners assessed a prospective cohort of patients prior to undergoing hip arthroscopy. The examiners were blinded to radiological findings. A full clinical examination was performed and this was compared with arthroscopic assessment in static and dynamic modes. Any LT lesion was recorded according to Gray and Villar classification. Sensitivity, specificity, positive predictive value (PPV) and negative predictive values (NPV) were calculated using Excel (Microsoft, Redmond).

The test is performed with the patient in supine and hip in loose-pack position. The examiner places his/her hand posterior to patient’s hip and attempts to translate the femoral head anteriorly by applying a force directed on posterior aspect of the greater trochanter and femoral neck while the weight of the thigh is taken by examiner’s forearm. The free forearm of the examiner is placed in the groin crease to stabilise the pelvis anteriorly. Examiner feels for anterior translation, the end point and apprehension comparing it with opposite side. A positive test is anterior translation of the hip with or without pain.

RESULTS

There were 58 patients including 32 (55%) females and 26 (45%) males. Clinical examinations identified 21 positive and 37 negative results for LT injury. Results were confirmed against the gold standard, which was hip arthroscopy.

There were 4 false-negative and false-positive tests each. The test sensitivity was 90% and specificity 84% while the PPV and NPV were 90% and 84% respectively.

DISCUSSION

The test as described offers assessment of instability associated with LT injuries, which has thus far been neglected. Test emphasises anterior translation of femoral head-neck complex with respect to fixed pelvis. The secondary purpose of the test is the provocation of pain that is associated with partial tears and occasionally in complete tears with accompanying synovitis. The test is performed with hip in loose-pack position that potentially avoids false positive results.

CONCLUSION

Our experience shows that the AL test is easily reproducible and highly specific for the diagnosis of lesions of the LT. The test can be performed to identify both acute and chronic ligamentum injuries.

Like any clinical examination technique the clinician is recommended to learn, practice and compare in patients to interpret the results better and improve predictability.

We suggest should be used as a special clinical test in conjunction with thorough history and conventional hip examination.

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