Enabling rapid decisions on ACC cover and entitlements

Consideration factors for: hip labral tears

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ACC's Clinical Services and the New Zealand Hip Society (in association with the New Zealand Orthopaedic Association) have jointly developed these consideration factors. These factors are based on a review of published research evidence and expert opinion. The document outlines the factors ACC's Clinical Advisors consider when providing their clinical advice to case owners who are assessing whether ACC can provide cover and entitlements for a hip labral tear.

When to use this document

This document is recommended as a reference guide for ACC Clinical Advisors who are considering a causal link between an accident event and hip labral tear(s) confirmed on soft tissue imaging.

This document provides:

- *Key points* on hip labral pathology, demographic characteristics, the initial presentation of hip labral tears and mechanism of injury.
- *Hip labral tears – clinical advice support tool* – which sets out criteria that are more supportive and less supportive of a possible causal link between an accident event and a hip labral tear.
- *References* to key research papers.

How to apply the consideration factors

These factors must be considered in combination when providing advice on causation of hip labral tears. They are not intended to be used as a point scoring tool e.g. with numeric weighing up of the factors that are more supportive and less supportive of traumatic causation. The factors are not to be considered in isolation; rather the overall balance of factors that are more supportive and less supportive of a causal link should be considered.

The assessment of causation requires a good understanding of the identified pathology and careful consideration of the mechanism of injury, history, clinical and imaging findings and background prevalence. The time interval between the accident event and imaging findings should also be considered. Imaging findings should be interpreted in the context of the patient's age, history of injury and history of symptoms.

Key points

Hip labrum pathology and background prevalence

The literature describes a range of potential causes for hip labral tears. Most commonly these are attributed to, or associated with, femoroacetabular impingement (FAI), degenerative/wear change, increasing age, acetabular dysplasia, hypermobility, loading/activities causing repetitive microtrauma, or a significant single episode traumatic event [1].

When the labrum is torn as a result of single event trauma, this is generally regarded as requiring a significant accident event, and therefore associated with acute significant signs, symptoms and loss of function/incapacity.

The background prevalence of asymptomatic hip labral pathology is an important consideration in determining the causation of a hip labral tear. Hip labral tears are a common finding in the asymptomatic population [2]. They have been reported to be present in almost 70% of individuals with no history of trauma or symptoms [3] [4].

Individuals requesting ACC funding for elective hip surgery, who also have ACC cover for a hip injury, will identify a specific point in time when symptoms first arose. In most situations, ACC Clinical Advisors must weigh up whether the hip condition for which surgery is requested is more likely than not to have been caused by single event trauma or whether it is more likely than not that a previously asymptomatic labral abnormality has become symptomatic after that accident event.

In many people, microinstability of the hip joint experienced over a period of time leads to intra-articular damage. This microinstability is generally considered atraumatic. Its main causes include dysplasia of the hip and connective tissue disorders. It can also be iatrogenic or idiopathic in aetiology [5].

Mechanism of injury

Subluxation or dislocation is a mechanism of injury with a higher risk of causing damage to the labrum.

Other proposed mechanisms or "at risk" positions of the anterior labrum (where these tears are found) include:

- Forced flexion, adduction internal rotation (impingement position), which places the greatest strain on the anterior labrum [6].
- Forced extension, external rotation, which places greater strain on the anterolateral labrum [6].

A key additional component of the mechanism that should be considered when weighing up the likely causation of a hip labral tear is whether there has been an unanticipated, uncontrolled, significant accident event.

Initial presentation

The clinical presentation following a traumatic hip labral tear is typically associated with a clear and consistent history of an accident event (with an appropriate mechanism of injury) and a sudden/immediate onset of significant hip symptoms (e.g. C-shaped pain, groin pain) and documented functional impairment of the hip. It has been suggested that patients with acute traumatic hip labral tears are expected to seek medical attention within a few days after the accident event. In New Zealand, the consensus expert opinion is that presentation would typically occur within a month. A delay in presentation longer than this is less supportive of a traumatic injury unless there are specific extenuating circumstances documented.

The absence of these features (a clear, consistent history of an accident event; an appropriate mechanism of injury; an immediate onset of hip symptoms; early presentation; documented ongoing functional impairment up until presentation) tends to point away from a single episode of trauma as being causative of any subsequently identified hip labral tear. It is noted, however, that acute hip labral tears may be missed on initial clinical examination.

The initial clinical examination findings need to be considered in the context of the timeframe between that accident event and the first assessment.

Radiology findings

The MRI diagnosis of a labral tear is made when there is evidence of a space or crevice between the labrum and the adjacent articular cartilage. The use of contrast (MR arthrography) improves the accuracy of the diagnosis.

MRI criteria for diagnosis of a labral tear are a detached labrum, a partial or full thickness cleft of increased T2 weighted signal intensity in the labrum or distortion of the labrum from the normal triangular morphological configuration resulting in an enlarged, small or irregular shape or detachment [7].

These MRI findings do not infer causation. The degree of any chondral loss can be underestimated by MRI.

When the labrum is completely separated from the articular cartilage, this may allow increased movement of the labrum at that location. Whether this increased movement reflects symptomatic labral instability is unclear. MRI cannot differentiate a chondro-labral cleft from a labrum that is thought to be unstable.

In younger individuals, a symptomatic labrum may remain firmly attached to the adjacent articular cartilage creating the so-called wave sign or bubble sign. In these cases MRI appearances may be reported as normal.

A high rate of MRI-defined labral tear is found in asymptomatic individuals. This rate is higher in athletes and in individuals with morphologic risk factors for FAI, and it also increases with age. The majority of individuals with this finding do not develop a symptomatic hip or later arthrosis.

In an individual with no clear evidence of established hip osteoarthritis (including articular cartilage changes), it is very difficult to establish the age of a labral tear based on the imaging alone. The clinical findings, history, mechanism of injury and background prevalence should always be considered.

ACC arthroscopic hip surgery entitlement

ACC cover and entitlements in relation to acetabular labral tears are considered on a case-by-case basis. This assessment is based on the Assessment Report and Treatment Plan (ARTP) and information ACC collects on the case from relevant and appropriate sources.

Information ACC requires

If there is a request for surgery, the ARTP must include appropriate X-rays (AP and lateral views) and appropriate soft tissue imaging (MRI or MR arthrogram). Other imaging, such as CT scan, should be provided if available.

Relevant radiological observations and measurements should be provided. Assessments include the lateral central edge angle, alpha angle, Tonnis angle, hip joint space (in mm), femoral head neck offset, and the presence or absence of a crossover sign (relevant images must be provided with the ARTP).

Hip labral tears – clinical advice support tool

ACC uses the following consideration factors to determine whether a labral tear is likely to represent a physical injury caused by an accident.

IMPORTANT:

The factors in this table are not to be considered in isolation; rather the overall balance of factors that are more supportive and less supportive of a causal link should be considered.

Factors that are MORE SUPPORTIVE of a possible causal link between an accident and an identified labral tear	
Demographics	Younger age <40 years of age.
Cover	There is an ACC-covered hip injury or evidence of a hip injury documented in the contemporaneous clinical notes.
Past history	No previous history of hip symptoms or dysfunction and no evidence suggestive of pre-existing hip labral pathology.

Factors that are LESS SUPPORTIVE of a possible causal link between an accident and an identified labral tear	
Demographics	Older age >40 years of age.
Cover	ACC cover has not been given for a hip injury or there is no evidence of a hip injury documented in the contemporaneous clinical notes.
Past history	Documented evidence of pre-existing hip symptoms or dysfunction in the injured hip.
	Note that a history of prior hip problems does not exclude a new accident causing a new hip labral tear. A history of hip problems in the contralateral hip is relevant only if there is a history suggestive of an atraumatic hip labral tear in that hip.
	Previous claims for the same hip, particularly if associated with low energy accident events. Note that if there are previous claims for the same hip then any contribution from these accidents to the current hip labral pathology should be considered.

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Factors that are MORE SUPPORTIVE of a possible causal link between an accident and an identified labral tear

Mechanism of injury	Unexpected, uncontrolled significant accident event (e.g. leading to forced end range hip movement).
History	Immediate incapacity associated with the hip joint (inability to weight bear/need to stop activity).
	The history and mechanism of injury documented in the clinical notes including any specialist reports are consistent with the contemporaneous medical records.
Activity levels	No significant participation in sports and activities which place significant repetitive loading on the hip joint (hockey, football, gymnastics, martial arts, etc.).
Initial presentation	C-shaped pain/groin pain and clear signs of intra-articular hip pathology and functional impairment of the hip.
	Early first presentation to healthcare provider (<1 month).

Factors that are LESS SUPPORTIVE of a possible causal link between an accident and an identified labral tear

Mechanism of injury	Controlled activities.
	Accustomed activities.
	Expected forces.
History	Able to continue participating in activities which load the hip joint in a way that would be expected to produce symptoms (e.g. in flexion and twisting).
	The history and mechanism of injury documented in the clinical notes and specialist reports do not match the contemporaneous clinical records.
Activity levels	Significant participation in sports and activities which place significant repetitive loading on the hip joint (hockey, football, gymnastics, martial arts, etc.).
Initial presentation	Low back pain, posterior buttock pain and the absence of assessment findings consistent with intra-articular hip pathology.
	Bilateral hip symptoms.
	Delay in presentation (>1 month) without an adequate explanation for this delay.

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Factors that are MORE SUPPORTIVE of a possible causal link between an accident and an identified labral tear	
General imaging features	Preserved hip joint space.
	No signs of osteoarthritis.
	Contralateral side is unremarkable (if there is bilateral imaging).

Factors that are LESS SUPPORTIVE of a possible causal link between an accident and an identified labral tear	
General imaging features	Loss of hip joint space (joint space loss of 2mm or more).
	Osteophyte formation.
	Labral ossification.
	Subchondral acetabular cysts.
	Superior joint space chondral loss.
	Evidence of chronic repetitive FAI (os acetabuli, herniation pit, femoral head neck cysts).
	Acetabular dysplasia (lateral centre-edge angle <20 degrees and Tonnis angle >10 degrees).
	Bilateral labral pathology in the absence of a history of bilateral hip trauma.

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It should be noted that general imaging features and morphology are not deciding factors or the major reason for determining causation. They can correlate with the likelihood of asymptomatic tearing, but do not exclude a person from having had a traumatic injury from an accident. The individual mechanism of injury and contemporaneous clinical findings (such as their presentation and symptoms) need to be weighted higher than morphology alone.

Factors that are MORE SUPPORTIVE of a possible causal link between an accident and an identified labral tear	
Morphology	Tonnis angle <10 degrees.
	Lateral centre-edge angle 20–39 degrees.
	Femoral head neck offset >7 mm.
	Alpha angle <65 degrees.

Factors that are LESS SUPPORTIVE of a possible causal link between an accident and an identified labral tear	
Morphology	Tonnis angle >10 degrees.
	Lateral centre-edge angle <20 or >39 degrees.
	Femoral head neck offset <7 mm.
	Alpha angle >65 degrees.
	Loss of femoral head spherical shape.
	Loss of hip joint space (joint space loss of 2mm or more).
	Note: The further any of these measurements are outside these ranges, the more likely that a labral tear is non-traumatic.

Note: Morphology is not a determinant on its own of causation and all factors that have been outlined in this table MUST be weighed up to determine whether it is more likely or less likely that a labral tear has been caused by a covered accident event.

Other considerations	Surgery involves debridement or repair of the labrum without any need to address bony morphology.

Other considerations	Surgery specifically addressing any underlying morphology (periacetabular osteotomy, cam or pincer resection whether a labral tear is present or not).

When performing a surgical debridement or repair of the labrum, a surgeon is altering the morphology of the hip. This means that cam or pincer resection may be performed to create some clearance and mitigate against the effects of the surgery itself. As such, minor resection may not necessarily be addressing cam or pincer morphology.

References

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