Hip Arthroscopy: A View to Cure?
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Introduction

Mankind has attempted to visualize the interior body parts by endoscopy for almost 200 years since Bozzini. But the first recorded attempt of arthroscopic visualization of the hip joint is attributed to Michael Burman in New York in 1931. Professor Kenji Takagi from Japan utilized arthroscope in the treatment of four hips and published his results in 1939 that include Charcot joints, tuberculous hip and suppurative arthritis.

In mid-1980 James Click from San Francisco and Richard Villar from Cambridge, England had expanded the role of arthroscopy in treatment of several hip disorders which range from labral lesions, removal of loose bodies, suppurative arthritis and assessment of avascular necrosis.

Indications

Hip joint, being a ball and socket joint, is the largest joint among the body that is well enclosed by the soft tissue envelopes. Hip arthroscopy, understandably stills undergoes development and improvement in techniques. The indications of hip arthroscopy are:

1. Loose bodies
2. Labral lesions
3. Degenerative arthritis
4. Avascular necrosis of hip
5. Sepsis
6. Ruptured Ligamentum teres
7. Unresolved hip pain

Contraindications

Perhaps the clearest contraindication to hip arthroscopy is ankylosis of the joint characterized by a fixed position. Superficial infections and open wounds contraindicate the passage of arthroscopic instruments into the joint due to the risk of secondary infection. Severe obesity and advance destruction of the hip joint are also contraindications to arthroscopy.

General Technique

The procedure is performed under spinal or general anesthetic. A supine position is commonly employed even though some surgeons prefer lateral position. It is carried out with the use of a fracture table and real-time fluoroscopy.

The operative hip is positioned in extension and approximately 25 degrees of abduction (Figure 1). Slight flexion might relax the capsule and facilitate distraction. Traction is applied to the operative extremity and it usually requires 25 to 30 pounds of traction.

Portals commonly used include anterior, anterolateral and posterolateral portals. A guide wire is passed into the hip joint under fluoroscopic control. Once the portals are established, diagnostic arthroscopy and other therapeutic procedures are carried out as necessary – these include debridement of labral tears, microfracture and removal of loose bodies, chondroplasty and shaving.

Figure 1.
Once the procedure is concluded, the instruments are withdrawn and traction is released. Patient can be discharged the next day with out-patient physiotherapy treatment.

**Case Illustration**
A 43-year-old man presented with unrelenting hip pain for 18 months after a trivial sprain to his hip. MRI of the hips suggest labral tear. We performed hip arthroscopy and excision of labral tear for him (Figure 2). His pain improved dramatically and his functional range has returned to normal (Figure 3).

**Complications Associated with Hip Arthroscopy**
Complications are in general uncommon but may be due to:

1. Neurovascular Traction Injury
2. Direct trauma to neurovascular structures
3. Compression Injury to the Perineum
4. Scope trauma
5. Infection
6. Heterotopic Ossification

**Conclusion**
Hip arthroscopy is a technically demanding procedure that requires vast experience in arthroscopic surgery. With the acquisition of skills, careful patient selection and meticulous surgical techniques, patients may enjoy good relief of symptoms for a considerable period of time.
Preparation for the Trailwalker: Stretch or Not to Stretch?

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With the upcoming Trailwalker 2003 in November, every participating athlete is working very hard to achieve their target hours in accomplishing this charitable 100 km walk. Naturally flexibility training with stretching exercise would be an integral component of physical conditioning program and warm-up activities. One of the many stretching guidelines suggested would include the followings:

- Begin an exercise session with light rhythmic exercise and then stretch. The muscle temperature is higher and the muscle/tendon unit can be stretched farther.
- Precede a passive stretch with an isometric contraction to improve flexibility (Proprioceptive neuromuscular facilitation technique).
- Passive stretches held for 30-45 sec form the basis of any flexibility program.
- Stretches must not be painful.
- To be successful, stretching must be done on a regular basis, preferably daily, and should precede and follow each exercise session.
- Ballistic or "bounce" stretching must be avoided, as it may cause injury to the soft tissues.

Scientist has focused on the physiological basis of stretching and its relationship to injury prevention and athletic performance. Several authors have described flexibility as a component of fitness that is health related rather than performance related. It is difficult to separate the two; an athlete who has a tight muscle group certainly cannot perform at an optimal level without risk of injury. A joint that is unable to move through its full range of motion because of joint capsule or muscle inelasticity is certainly more susceptible to sprains and strains if forced to move beyond its available motion.

Early research in the area of flexibility indicated that stretching exercise done on a regular basis may help to improve the tensile strength and elasticity of ligaments and fascia. This is part of connective tissue biology as it would responds to stress by organizing itself along the axis of that stress.

Many sport medicine professionals have promoted stretching as a way to decrease the risk of injury. Two potential mechanisms are often proposed by which stretching could decrease injury: a direct decrease in muscle stiffness via changes in passive visco-elastic properties, or an indirect decrease in muscle stiffness via reflex muscle inhibition and consequent changes in visco-elastic properties due to decreased actin-myosin cross bridges. These changes in muscle stiffness would allow for increased range of motion around a joint, which is believed to decrease the risk of injury.

There are lots of variations of effects of stretching among individuals and specific muscle groups. Some people are naturally flexible even though they never stretch, whereas others remain inflexible no matter what they do. In addition, stretching appears less effective in increasing hip external rotation and abduction compare to hip flexion. Besides, there are studies showing that stretching decreases visco-elasticity of muscle for less than 30 minutes, and the increase range of motion is at least partially due to an analgesic effect mediated at the level of the spinal cord or higher. New research focus specifically on relationship between stretching and injuries has challenged some of these concepts.

"Does stretching help prevent injuries" is a question frequently asked by athletes, coaches and sports practitioners. Taking stretching as an intervention, it can be further divided into stretching immediately before exercise or stretching outside periods of exercise.

The Medline database was searched for all clinical articles related to stretching and injury limited to human studies. Of the 293 articles retrieved form the search, only 14 articles used a control group to analyse whether pre-exercise stretching prevents injury and all were included in their analysis. Of these, five articles suggested it is beneficial, three articles suggested it is detrimental, and six articles suggested no difference. The relative risk or odds ratio or hazards ratio and confidence intervals were calculated from all the prospective studies. The author believes that the clinical evidence does not suggest the hypothesis that stretching before exercise prevents injury. Overall, the only studies to suggest pre-exercise stretching might prevent injuries included a warm-up program as a co-intervention. The readers are suggested to study Ian's article to understand the detail evidence-based analysis of these articles.
There have only been two studies examining the effect of stretching after or outside periods of exercise.\textsuperscript{7,8} One suggested injury risk is decreased and the other suggested that only injury severity is decreased. Much more research is needed in this area before definite conclusions can be made.

Over-stretching a muscle is in fact another concern. Even strains as little as 20\% beyond resting fiber length, as one would expect with “correct” stretching techniques, can produce damage in isolated muscle preparations.\textsuperscript{9}

Considering the available evidences in the literature are contrary to many people’s belief, a lot of athletes are still stretching with the perspective to minimize the chance of injuries. If the reader decides to continue with his or her “routine”, be aware of the false sense of security. It is certainly the time to face the challenge of evidence-based practice and so is the coming hundred kilometers.

References

Asian Laser Forum 2003
16 November 2003
Hospital Authority Building

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