Pathogenesis and TCM Treatment of the Hip Disorders

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The hip joint is largest ball-and-socket joint that belong to the synovial joint, is most stable and flexible joint in the body. That is designed to withstand repeated motion and a fair amount of wear and tear.
Hip pain is a general term that can stem from pain on the side of your leg, buttock pain radiating into the thigh or the pain in the front of your leg by the groin. The area of the hip is surrounded in the front, back(buttock) and sides by muscles and small pads that cushion the tendons of these muscles called Bursa. Any or all of these structures can become inflamed, injured or torn and lead to hip and leg pain.
The hip pain related to how many diseases?

1. Arthritis of the hip
2. Bursitis of the hip
3. The gluteus medius injury
4. Entrapment syndrome of Superior cluneal nerve
5. Entrapment syndrome of lateral femoral cutaneous nerve
6. Piriformis syndrome
7. Avascular necrosis
8. Fracture of the hip
9. Snapping hip
Anatomy of the Hip

Structure of the Hip

- Pubis
- Ischium
- Acetabulum
- Femoral head
- Greater trochanter
- Femoral head cartilage
- Lesser trochanter
- Femoral neck
- Femur
Ligaments of the Hip

**Anterior**
- Iliofemoral ligament
- Pubofemoral ligament
- Pubis
- Femur

**Posterior**
- Ischium
- Ischiofemoral ligament
Muscles of the Hip

- Gluteus medius
- Greater trochanter
- Iliotibial band
- Gluteus maximus
- Iliacus
- Tensor fasciae latae
- Psoas major
- Piriformis
- Adductor brevis
- Adductor longus
- Pectineus
- Iliotibial tract
- Adductor magnus
- Gracilis
Nerves of the Hip
Lateral femoral cutaneous nerve
Superior cluneal nerve
Femoral Head Blood Supply
Bursae in the Hip

Location of Bursa in the Hips

trochanteric bursa
iliopsoas bursa
gluteus medius bursa
ischiogluteal bursa
Range of motion of the Hip

- **Flexion**: 110-120°
- **Abduction**: 45°
- **Adduction**: 30°
- **Extension**: 30°
- **Outward rotation**: 45°
- **Inward rotation**: 40°
Angle Inclination of the Femoral Neck

A  Normal  125°
B  Coxa vara  105°
C  Coxa valga  140°
1. Arthritis of the Hip

- Osteoarthritis is most common cause of chronic hip pain, because the cartilage wear-and-tear by the aging or injury or mal-alignment, etc.

- Arthritis pain is often felt in the front of the thigh or in the groin or buttock, stiffness hip, limit mobility of hip, these due to inflammation or swelling in the hip joint.
What Causes Osteoarthritis of the Hip Joint?

- Joint injury
- Aging (degeneration)
- Women more than men
- Being overweight
- Mal-alignment
- Genetic
- Secondary disease
Diagnosis

Pain, worse with active, rest feel better
Stiffness
Swollen
Examination positive (Faber’s test)
Loss of flexibility
Grating sensation
Bone spurs
X-ray, MRI
Faber’s test
Treatment

• In TCM:
  • Acupuncture
  • Herbs
  • Herb paste
  • Tuina

• In western medicine:
  • Anti-inflammatory
  • Physical therapy
  • Injection
  • Surgery
Identify Patterns and Determine Treatment in TCM

1. Bi syndrome of Blood stasis and blocked meridians Patterns (血瘀阻痹证):
   - Hip injury, pain around groin or buttock, stiffness, limitation of motion, tongue dark and red or spot, pulse fine and rough.

   Herbs: quicken the blood and free the meridians (活血通络)

① Formula:
TongLuoZhiTongTang (通络止痛汤):
- 三七 (sanqi), 红花 (honghua), 血竭 (xuejie),
- 大黄 (dahuang), 乳香 (ruxiang), 没药 (moyao),
- 麻黄 (mahuang), 当归 (danggui) (酒制), 白芍 (baishao) (酒制), 六神曲 (shenqu), 土鳖虫 (tubie), 续断 (xuduan), 骨碎补 (gusuibu), 甘草 (gancao).

② Formula:
TaoHongTang (桃红饮):
- 桃仁 (taoren), 红花 (honghua), 当归 (danggui), 川芎 (chuanxiong), 威灵仙 (weilingxian).
2. Bi syndrome of wind cold damp patterns (风寒湿痹):
Hip pain or soreness but heat can reduce pain and cold damp make worse. Joint stiffness, after activity more pain, tongue fur white and thin or white slippery, pulse string and tight or rough.

Herbs: dispel wind and free the meridians (祛风通络):

①Formula:
Fang feng tang (防风汤): 防风(fangfeng), 秦艽(qinjiao), 麻黄(mahuang), 杏仁(xingren), 葛根(gegen), 赤茯苓(fuling), 当归(danggui), 肉桂(rougui), 生姜(shengjiang), 大枣(dazao), 甘草(gancao).

②Formula:
WenJingTongLuoTang（温经通络汤）:制川乌(chuanwu)、丹参(danshen)、生香附(xiangfu)、透骨草(tougucao)、延胡索各(yanhusuo)15克，桂枝(guizhi)、干地龙(dilong)、姜黄(jianghuang)各9g
3. Bi syndrome of liver and kidney deficiency patterns (肝肾亏虚):
certain reason may make the liver and kidney deficiency, and kidney governs
the bone and liver governs the muscles. The arthritis getting worse, pain come
and goes and sometime leg muscle spasm, stiffness hip, limit movement,
muscle shrink, warm heat helps pain better, urinate frequency, fatigue, tinnitus,
hot flash, tongue pale or red, pulse deep, fine and rapid.

Herbs: supplement the liver and kidney, quicken the channels and soothe
pain(滋补肝肾，活络止痛)

Formula:
duhuojishengtang(独活寄生汤): 独活(duhuo)(9g) 桑寄生(sangjisheng), 杜仲
duzhong), 牛膝(niuxi), 细辛(xixin), 秦艽(qinjiao), 茯苓(fuling), 肉桂(rougui), 防
风(fangfeng), 川芎(chuanxiong), 人参(renshen), 甘草(gancao), 当归
danggui), 芍药(shaoyao), 地黄(dihuang)(各6g)
Acupuncture

Chief points:
环跳 GB30, 居髎 GB29, 阳陵泉 GB34, 绝骨(悬钟 ) GB39

Support points:
dispel wind: 风门BL12，肝腧BL18，膈腧BL17
free the meridians: 大椎GV14，关元CV4
eliminate dampness: 脾腧BL20，中脘CV12，阴陵泉SP9
clear heat: 曲池LI12，合谷LI4
Tuina Manipulation: demonstration

Heating pad

Herb paste: herbs powder with honey makes paste

姜黄(jianghuang)、羌活(qianghuo)、干姜(ganjiang)、栀子(zhizi)、乳香(ruxiang)、没药(moyao), 黑木耳(heimuer), 三七(sanqi), 共研细末。
2. Bursitis of the Hip

Bursae is fluid-filled sacs, act as the cushion to relieve stress between bone and tendons that is close to the surface, so that get injury easily or overuse then sacs can become inflamed cause pain whenever you move the hip joint.

Bursitis is inflammation of the bursa. There are four bursas in the hip but the major and most common bursitis is greater trochanter bursitis.

Greater trochanter bursitis

Ischiogluteal bursitis

Iliopsoas bursitis

Gluteus medius bursitis
Greater Trochanteric Bursitis

- Greater trochanteric bursitis is characterized by painful inflammation of the bursa located just between IT band and greater trochanter of the femur.

- Patients typically complain of lateral hip pain, although the hip joint itself is not involved. Pain may radiate down the lateral aspect of the thigh.
Diagnosis points of greater trochanter bursitis

1) With acute trauma, patients may recall specific details of the impact.
2) The typical symptom is pain at the greater trochanteric region at the lateral hip.
3) Pain may radiate down the lateral aspect of the ipsilateral thigh, pain usually does not radiate all the way into the foot.
4) Typically, symptoms worsen when the patient is lying on the affected bursa (eg, lying in the lateral decubitus position).
5) Palpation also may reproduce pain that radiates down the lateral thigh, but it does not go below the knee.
TCM Treatment

Acupuncture: 环跳 GB30, 居髎 GB29, 阳陵泉 GB34, 绝骨(悬钟 ) GB39
Ashi point

Tuina

Herb paste:
姜黄(jianghuang)、羌活(qianghuo)、干姜(ganjiang)、栀子(zhizi)、乳香(ruxiang)、没药(moyao), 黑木耳(heimuer), 三七(sanqi), 共研细末。

Ice pad
3. Avascular necrosis

Avascular necrosis is the death of femoral head due to a lack of blood supply. Also called osteonecrosis, in children called Legg-Calve-Perthes disease. Avascular necrosis can lead to tiny breaks in the bone and the bone's eventual collapse.

Avascular necrosis occurs when blood flow to a bone is interrupted or reduced, which may be caused by injury or high bone pressure (Sickle cell anemia or Gaucher's disease) or other.

Pain, stiffness and limping are common symptoms, but early no symptoms. it usually occurs in men between the ages of 30 and 60, or children.
Avascular necrosis (adult)

X-ray
Legg-Calve-Perthes disease (children)

X-ray
Treatment

Earlier treat is best otherwise have to has joint replacement

① Herbs: 蟹甲 (turtle shell) 100g, 穿山甲 (pangolin) 15g, 丹参 (danshen) 30g. these make powder.

② Herbs: 地鳖虫 (woodlouse) 30g, 血蝎 (dragon’s blood) 30g, 三七 (sanqi) 30g, 乳香 (olibanum) 20g, 没药 (myrrh) 20g, 牛膝 (niuxi) 40g, 儿茶 (ercha) 40g, 苏木 (sumu) 40g, 延胡索 (yuanhusuo) 100g, 自然铜 (zirantong) 20g, 桃仁 (taoren) 60g, 丹参 (danshen) 100g, 红花 (honghua) 60g, 木香 (muxiang) 30g, 白芍 (baishao) 100g, 川芎 (chuanxong) 50g, 当归 (danggui) 50g, 甘草 (gancao) 50g. all these makes powder

Acupuncture: 环跳 GB30, 居髎 GB29, 阳陵泉 GB34, 绝骨(悬钟) GB39
    Ashi point

Tuina

Using crutches: to release pressure of femoral head.
4. The Gluteus Medius Injury

- Athlete more than other people.
- Chronic or acute injury.
- Pain is referred from the lower back or tailbone across the buttock to the hip and top of the thigh, sometime pain is referred to below knee in the fibular neck area.
- Worse from activity or in the morning.
- Trigger points.
- Right gluteus medius injury occurs more often than left.
- Forward bend occurs pain in the low back, buttock or thigh.
gluteus medius (cut)
gluteus maximus (cut)
gluteus minimus
piriformis
greater trochanter
Iliotibial tract
Examination

(A) negative

(B) positive
5. Entrapment syndrome of superior cluneal nerves

The medial branch of the superior cluneal nerve passes over a *osteofibrous tunnels* which is between fascia and iliac crest down to the buttocks. In that particular area the superior cluneal nerves are compressed easily when injured. The nerves distribution of the skin are upper part of the buttocks and lateral thigh.
Diagnosis points of entrapment syndrome of superior cluneal nerve

1) Indication of injury or over did in low back area.
2) The pain occurs in the specific area of the nerve and radiates to the lateral thigh.
3) Bending the waist and walking causes pain. Also, changing posture from sitting to standing is difficult.
posterior

anteri or
6. Entrapment syndrome of the lateral femoral cutaneous nerve

- It is a syndrome of pain in the lateral and anterolateral thigh.
- The lateral femoral cutaneous nerve passes through and underneath the lateral aspect of the inguinal ligament, and finally travels to innervate the lateral thigh. It divides into anterior and posterior branches and supplies skin from the greater trochanter to the mid thigh.
- If the nerve is pressed when injured, it causes burning pain and numbness of the greater trochanter and the mid thigh.
Diagnosis points of entrapment syndrome of the lateral femoral cutaneous nerve

1) This syndrome is most commonly seen in individuals aged 20-60 years.
2) Sports injuries such as trauma or muscle tears of the lower abdominal muscles may also result in injury to the nerve.
3) It may also occur during pregnancy due to the rapidly expanding abdomen in the third trimester.
4) It may also be caused by injury from surgical procedures.
5) There is pain on deep palpation just below the anterior superior iliac spine and from hip extension.
6) The pain is at the lateral thigh or anterolateral thigh and down to the knee and also sometimes in the inguinal region.
hip extension test
7. Piriformis Syndrome

The piriformis syndrome is a condition in which the piriformis muscle irritates the sciatic nerve, causing pain in the buttocks and leg, with referred pain, commonly called sciatica, along the course of the sciatic nerve.
Diagnosis Points of Piriformis Syndrome

1) Patients generally complain of pain deep in the buttocks, which is made worse by sitting, climbing history of injury to the buttocks.
2) No low back pain, but has leg pain of along the sciatic nerve.
3) Special examination will be positive.
4) CT or MRI does not show a herniated disc.
examination
Piriformis Figure
Relation of Sciatic Nerve to Piriformis Muscle
In 1510 Extremities Studied

88% (1329 specimens)
11% (166)

0.86% (13)
0.13% (2)
8. Fracture of the hip

Hip fractures most commonly occur from a fall or from a direct blow to the side of the hip. Some medical conditions such as osteoporosis, cancer, or stress injuries can weaken the bone and make the hip more susceptible to breaking.

A hip fracture is a break in the upper quarter of the femur (thigh) bone but for aged people most commonly break in neck of the femur.

The patient with a hip fracture will have pain over the outer upper thigh or in the groin. There will be significant discomfort with any attempt to flex or rotate the hip.
Subcapital neck fracture
Transcervical neck fracture
Intertrochanteric fracture
Subtrochanteric fracture
Fracture of the greater trochanter
Fracture of the lesser trochanter
9. Snapping hip

Snapping hip is a condition in which you feel a snapping sensation or hear a popping sound in your hip when you walk, get up from a chair, or swing your leg around.

The snapping sensation occurs when a muscle or tendon moves over a bony protrusion in your hip.

Snapping hip is usually painless and harmless, the sensation can be annoying. In some cases, snapping hip leads to bursitis, a painful swelling of the fluid-filled sacs that cushion the hip joint.
### Summary of the hip disorders

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<th>Pain</th>
<th>Stiffness</th>
<th>Limit of movement</th>
<th>Examination</th>
<th>Secondary disease</th>
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#### Conditions Mentioned:
- **Arthritis of the hip**
- **Bursitis of the hip**
- **Gluteus medius injury**
- **Entrapment syndrome of Superior cluneal nerve**
- **Entrapment syndrome of lateral femoral cutaneous nerve**
- **Piriformis syndrome**
- **Avascular necrosis**
- **Fracture of the hip**
- **Snapping hip**

#### Symptoms:
- *Pain along sciatic down to leg*
- *Pain radiate to lateral thigh or down to knee*
- *Pain radiate to lateral thigh, low back pain*
- *Pain radiate to low back, buttock or thigh*
- *Pain radiate to lateral thigh or down to knee*
- *Pain along sciatic down to leg*
- *Femoral head collapse*

#### Additional Notes:
- *Women more*
- *After 50 year*
- *30-60 or children*
- *Senior more*
- *May injury*
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