

APPENDIX B. SUMMARY OF RECOMMENDATIONS

Table B1. Summary of recommendations—adult hip disorders

Patient presentation	Recommendations
<p>Adult patients with full or limited movement and nontraumatic hip pain of b4 wk of duration</p> <p>Symptoms are often transient. Physical examination is primarily to discriminate between articular involvement and referred pain. Each age and sex exhibit typical specific hip, pelvis, and proximal thigh problems and diseases.</p>	<p>Radiographs not initially indicated [C]</p>
<p>General indications for radiographs include:</p> <ul style="list-style-type: none"> • Failed conservative treatment • Complex history • History of noninvestigated trauma • Significant unexplained hip pain with no previous films • Loss of mobility in undiagnosed condition. • Acute or subacute onset of intermittent locking • Palpable enlarging mass 	<p>If radiographs are indicated [B] AP pelvis and AP frog leg views</p> <p>Special investigations [C] MRI is the procedure of choice to exclude osteonecrosis, marrow and joint disease including infection</p>
<p>Specific clinical diagnoses</p>	<p>Consult specific clinical diagnoses and related patient presentations for additional help in decision making.</p>
<p>1. Strain, tendinitis or tendinosis</p> <p>Clinical features:</p> <ul style="list-style-type: none"> • Pain aggravated by activity, resistance testing, and with length-tension evaluation (muscle stretch) • “Snapping hip” usually results from iliopsoas tendinitis (internal) or iliotibial band (external) involving both the bursa and tendon. • Suspect adductor muscle strains with medial or anterior thigh pain aggravated by passive abduction or resisted adduction 	<p>Radiographs indicated in suspected osseous avulsion fracture [D] AP pelvis and AP frog leg views</p> <p>Special investigations [D]</p> <ul style="list-style-type: none"> • MRI for soft tissue involvement (edema, hemorrhage, frank disruption) and bony abnormality • US may demonstrate site and amount of tissue disruption.
<p>2. Piriformis syndrome</p> <p>Clinical features:</p> <ul style="list-style-type: none"> • Dull posterior hip pain radiating down the leg • May mimic discogenic radicular pain and facet joint referred pain 	<p>Radiographs not initially indicated [D]</p> <p>Special investigations [D]</p> <ul style="list-style-type: none"> • MRI if unresponsive to care to assess muscle asymmetry and sciatic nerve hyperintensity at the sciatic notch.

Table(continuedB1)(continued)

Patient presentation	Recommendations
<ul style="list-style-type: none"> • Limping • Pain aggravated by active external rotation, passive internal rotation, or palpation of sciatic notch. 	<ul style="list-style-type: none"> • MRI or US may reveal bursitis.
<p>3. Nontraumatic trochanteric and iliopsoas bursitis</p> <p>Clinical features:</p> <ul style="list-style-type: none"> • Localized tenderness and pain • Moderate perceived weakness on resistive testing and length-tension evaluation (whereas true weakness may suggest abnormality such as avulsion of underlying muscle) 	<p>Radiographs not initially indicated [D]</p> <p>Special investigations [D]</p> <ul style="list-style-type: none"> • MRI useful in chronic or recurrent bursitis and is most accurate for iliopsoas bursitis • US is a cost-effective, easy-to-perform, and fast alternative. However, it fails to demonstrate iliopsoas bursitis in about 40% of cases.
<p>4. Osteoporotic hip fractures</p> <p>Clinical features:</p> <ul style="list-style-type: none"> • Patients typically aged N65 y • Often after a fall • Unable to walk • May exhibit shortening and external rotation of the affected limb and localized hip pain <p>Occasionally:</p> <ul style="list-style-type: none"> • Able to walk • Nonspecific leg discomfort • No obvious shortening or malrotation deformity 	<p>Radiographs indicated [C]</p> <p>AP spot and AP pelvis view</p> <p>Special investigations [D]</p> <p>If radiographs negative but clinically suspected, consider MRI, CT, or NM.</p> <ul style="list-style-type: none"> • Dual-energy x-ray absorptiometry recommended
<p>5. Septic arthritis of the hip</p> <p>Clinical features:</p> <ul style="list-style-type: none"> • Significant pain on movement and weight bearing • Malaise • Fever 	<p>Radiographs indicated [C]</p> <p>AP spot and AP frog leg views</p> <p>Special investigations [D]</p> <ul style="list-style-type: none"> • MRI is the imaging modality of choice for infection. • Joint aspiration or surgery • NM very sensitive but not specific for suspected septic arthritis and osteomyelitis
<p>Consider obtaining radiographs in adult patients with chronic hip pain unresponsive to 4 wk of conservative care or if one of the following conditions is suspected:</p> <ol style="list-style-type: none"> 1. Congenital or developmental abnormalities 2. OA (limited ROM) 3. Inflammatory arthritis 4. Osteonecrosis 5. Tumors 6. Stress fractures or undisplaced fractures 	<p>Radiographs indicated [D]</p> <p>AP spot and AP frog leg</p> <p>Additional views: AP pelvis in suspicion of congenital abnormality, osteonecrosis, inflammatory arthritis</p> <p>Special investigations [D]</p> <ul style="list-style-type: none"> • Unenhanced MRI done first (highly sensitive) • MR arthrography • Anesthesia injection • Examination under local anesthesia • Diagnostic arthroscopy
<p>Specific clinical diagnoses</p>	
<p>1. Congenital/developmental abnormalities</p> <p>Plain film radiograph as primary investigation for chronic hip pain, "knife sharp" groin pain, painful giving way, locking and painful clunk, and painful apprehension and impingement tests includes:</p> <p>(a) Acetabular dysplasia</p> <p>Exclude in athlete aged b30 y with chronic hip pain.</p> <p>(b) Labral tear and femoroacetabular impingement</p> <p>Clinical features:</p> <ul style="list-style-type: none"> • "Knife sharp" groin pain • Painful giving way syndrome • Locking • Painful clunk or snapping hip • Painful apprehension tests (forced hyperextension-external rotation in slight 	<p>Radiographs indicated [D]</p> <p>Standing AP pelvis and recumbent AP false profile view</p> <p>Additional views: Abduction view of the hip (to determine eligibility for joint preserving surgery)</p> <p>Special investigations [D]</p> <ul style="list-style-type: none"> • Unenhanced MRI for hip articular cartilage and labrum defects • MRI arthrography has high accuracy (90%) and diagnostic arthroscopy with labral resection

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Table B1 (continued)

Patient presentation	Recommendations
abduction) • Painful impingement test (forced flexion adduction)	
2. Osteoarthritis (OA) Clinical features: • Age ≥ 40 y • Hip pain only with possible protective limp • Activity-induced symptoms • Improvement with rest • Stiffness: in the morning or with periods of inactivity • May be bilateral • Significant decrease in pain with weight loss and exercise in patient aged ≥ 60 y Test for ROM: • Restricted and painful internal rotation (LOE III) • 3 Planes ROM limitations less sensitive but more specific	Radiographs indicated [B] AP spot and AP frog leg views
3. Inflammatory arthritis (seronegative and seropositive) Unrelenting morning stiffness ≥ 30 min, pain at rest, pain or stiffness better with light activity, polyarticular involvement, warmth, effusion, diffuse tenderness, decreased ROM; fever/chills or other systemic symptoms, responsive to NSAID/steroid, flexion and adduction contracture in long-standing arthritis. RA diagnostic criteria (≥ 4 of 7 required): • Morning joint stiffness ≥ 1 hour • Arthritis involving ≥ 3 joints for at least 6 wk • Hand arthritis (wrist, MCP, PIP) • Symmetric arthritis • Rheumatoid nodules • Serum Rh factor • Radiographic changes	Radiographs indicated [D] AP spot and AP frog leg views AP pelvis may also be warranted as initial study to assess both hips Special investigations [D] MRI highly sensitive and often more specific than US. Detection of synovial pannus, erosions, cartilage loss, small subchondral cysts, and marrow edema distribution US may show effusion and osseous erosions
4. Osteonecrosis (avascular necrosis) Clinical features: • Most common in those aged ≤ 50 y • M:F = 8:1; in younger patients, M:F = 4.2:1 • Progressive groin pain that may refer to the knee • Early stages: normal ROM • Advanced stages: limitation of extension, internal rotation and abduction; limping and atrophy.	Radiographs indicated [B] AP spot and AP frog leg views Consider AP pelvis as initial examination as condition may be bilateral Special investigations [B] MRI useful when radiographs are normal, especially in high-risk patients; also NM and CT (when MRI unavailable)
5. Tumors and metastatic lesions Variable clinical features; spontaneous pathologic fracture is often first sign of metastasis from breast, lung, or prostate cancer.	Radiographs indicated [D] AP spot and AP frog leg views Special investigations [D] NM, CT, MRI
6. Stress (fatigue or insufficiency) fractures Exertional anterior hip pain, especially after an increase in training regimen. Chronic repetitive overloads, typically in athletes or reduced mechanical bone properties (athletic amenorrhea, osteoporosis, corticosteroid use)	Radiographs indicated [D] AP spot and AP frog leg views If radiograph is inconclusive, re-radiograph after 10-14 d of restricted use before going to advanced imaging Special investigations [D] Bone scan, MRI, or CT in suspected occult, osteoporotic, or stress fractures
Adult patients with significant hip trauma Delay in recognition and reduction of acute dislocations, fractures, and	Radiographs indicated [C]

fracture-dislocation of hip leads to preventable complications and morbidity (LOE III).

Table(continuedB1)(continued)

Patient presentation	Recommendations
	AP pelvis, AP centered of hip, right and left obliques of the pelvis, and true lateral views Special investigations [C] MRI for patients with significant hip pain after injury, especially when unable to bear weight; also to exclude occult fracture and possible labral tear