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Serious Pathology Guide

For Clinicians In Primary Care

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ABOUT THIS DOCUMENT

This is a serious pathology guide designed to support clinicians in primary care settings. This list of pathologies is not exhaustive, as there are many others that may present in clinic. However, this guide endeavours to include the common serious pathologies that can masquerade as musculoskeletal pain.

This was written for clinicians by clinicians, as a quick reference point whilst working in a busy clinic setting. This is not a differential diagnostic tool. It was designed to ensure clinicians are reminded of the special questions and red flags that may indicate a serious pathology. It also includes suggestions on optimal pathways for the management of serious pathologies.

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SCREENING FOR SERIOUS GENERIC PATHOLOGIES

SERIOUS GENERIC PATHOLOGIES

- Malignancy: Primary or Metastatic Tumours
- Infection or Septic Arthritis
- Inflammatory Arthropathy
- Musculoskeletal: Acute Fracture/Dislocations
- Neurological Lesions
- Vascular Lesions

GENERIC SPECIAL QUESTIONS

- Mechanism of injury
- Onset
- PMH: Cancer (including: FH)
- PMH: Inflammatory conditions (including: FH)
- PMH: TB
- PMH: HIV
- IVDU
- Night pain
- Morning stiffness
- History of major trauma
- History of minor trauma with Osteoporosis
- Recent infection
- Weight loss
- Fatigue/Malaise
- Night sweats
- Long term steroid use
- Alcohol/Smoking

SERIOUS GENERIC PATHOLOGIES

Serious conditions requiring urgent management

(If unfamiliar with local pathways/new to post, then recommend prior discussion with GP/mentor/Senior clinical colleague)

GENERIC PATHOLOGIES	SIGNS/SYMPTOMS/RISK FACTORS
Malignancy: Primary or Metastatic Tumours [Follow GP 2 week fast track cancer pathway]	SIGNS & SYMPTOMS: • Deep, intense unremitting non-mechanical pain • Pain worse at night or at rest • Unexplained weight loss • Non-mechanical pain • Fever • Mass present • Lymphadenopathy RISK FACTORS: • PMH: Cancer - bony metastasis develop in two thirds of patients with cancer • Prostate, Breast, Lung, Thyroid and Kidney cancer have the most affinity for bone especially the spine • Smoker or have smoked • Obesity • Alcoholism • Specific infections e.g.: HPV • Increasing age: over 50 cancers more common • Inherited genes
Infections or Septic Arthritis [Urgent A&E referral]	SIGNS & SYMPTOMS: • Constant pain • Sudden onset, red, hot, pyrexia or red-hot joint • High inflammatory markers • Systemic symptoms • Fever, not always present RISK FACTORS: • PMH: RA, DM • Recent surgery/injection • Poor living conditions • Alcoholism/IVDU • Insect bite/trauma with wounds
Inflammatory Arthropathy [Follow GP urgent Rheumatology pathway]	SIGNS & SYMPTOMS: • Early morning joint stiffness over 30 minutes • Persistent swelling of one joint or more • Squeezing the joints is painful in inflammatory arthritis • Peripheral: Psoriatic/RA/Reactive • Axial: Ankylosing spondylitis/ Psoriatic/RA/Reactive • Enteropathic: Inflammatory Bowel Disease/Crohns/Ulcerative Colitis • History of psoriasis, iritis (uveitis), enthesopathy RISK FACTORS: • Recent infection (bowel or genitourinary infection) • FH: Inflammatory conditions • Caucasian > Afro-Caribbean/Asian

SERIOUS GENERIC PATHOLOGIES

Serious conditions requiring urgent management

(If unfamiliar with local pathways/new to post, then recommend prior discussion with GP/mentor)

GENERIC PATHOLOGIES	SIGNS/SYMPTOMS/RISK FACTORS
Musculoskeletal: Fracture/Dislocation [Acute fracture/dislocation urgent A&E referral] [Pathological: Dependent on known or unknown Primary. Follow GP 2 week fast track cancer pathway and/or GP urgent Orthopaedic pathway]	SIGNS & SYMPTOMS: • Deformity • Swelling, erythema, bruising • Neurovascular deficit • Muscle wasting • Unable/difficulties weight bearing • Pain after a lot of walking/training/running e.g. stress fracture RISK FACTORS: • Trauma • Pathological fracture (Osteoporosis, Paget's, multiple myeloma, PMH Cancer) • Insufficiency fracture - low BMI, alcoholism, smoker • Has risk factors for osteoporosis – early menopause/COPD/Crohn's/Steroid use/RA/over 65 Female/FH • Relative Energy Deficiency in Sport (RED-S) [Previously Female Athlete Triad]
Neurological Lesion [Dependent on presentation follow GP Neurological pathway or urgent A&E referral]	SIGNS & SYMPTOMS: • Neuropathy (including peripheral neuropathy) • Acute nerve palsy: Foot drop (Peroneal nerve), Saturday night palsy (Radial nerve), post dislocation (Axillary nerve), Long Thoracic nerve • Involuntary tremors • Bradykinesia • Global muscle stiffness/rigidity • Lack of facial expression • Extreme fatigue • Visual disturbances • Altered gait or balance issues • Muscle spasms/twitches • Progressive power loss • Upper motor neuron signs • Cranial nerve disturbances RISK FACTORS: • Family history of neurological illness Awareness of causes • Compression/Entrapment • Trauma/Surgery • Infection • Central cause • Neuropathy – DM, chemotherapy, toxin exposure, alcoholism, vitamin deficiency, hormonal imbalance • Autoimmune problems

SERIOUS GENERIC PATHOLOGIES

Serious conditions requiring urgent management

(If unfamiliar with local pathways/new to post, then recommend prior discussion with GP/mentor)

GENERIC PATHOLOGIES	SIGNS/SYMPTOMS/RISK FACTORS
Vascular Lesions [Referral dependent on condition urgent A&E or Vascular team – needs local discussion]	SIGNS & SYMPTOMS: • Fatigue and cramping symptoms in legs and feet which increase with physical activity • Night cramps • Reddish, blue or pale cold limbs • Reduced hair growth on legs • Muscles feel numb or heavy • Thin or pale skin, wounds that won't heal • Weak or absent pulses • Toes – blue, severe burning or thick, opaque nails • DVT – throbbing/red/swollen calf/thigh/upper arm • Aneurysm – pulsatile mass, syncope, ischemic limbs RISK FACTORS: • Smoker or have smoked • Hypcholesterolaemia • Hypertension • Over 50 years old • Male>Female • Obesity • History of cerebrovascular disease, stroke, IHD, DM • Kidney disease on haemodialysis • Family history of cardiovascular conditions • Lifestyle factors: poor diet, reduced exercise, drug use • Pregnancy or oral contraceptives • Indwelling central venous catheter • Cardiac pacemaker • Malignancy • Underlying connective tissue disease • Trauma • Surgery

SCREENING FOR SERIOUS SPINAL PATHOLOGIES

SERIOUS SPINAL PATHOLOGIES

- Metastatic Spinal Cord Compression (MSCC)
- Multiple Myeloma
- Spinal Infection (Spinal Tuberculosis/Vertebral Osteomyelitis/Discitis)
- Spondyloarthropathy
- Osteoporotic Vertebral Compression Fracture
- Craniocervical Instability
- Cervical Myelopathy
- Cervical Vascular Lesions
- Cauda Equina Syndrome (CES)
- Abdominal Aortic Aneurysm (AAA)

SPECIAL QUESTIONS

- Dizziness/Dysarthria/Dysphagia/Diplopia/Drop attacks (5D's)
- Nausea/Nystagmus/Numbness face/tongue (3N's)
- Clumsy hands
- Gait disturbance
- Severe headaches/acute jaw pain
- Lhermitte's sign
- Altered taste
- Bilateral P&N
- HRT/contraceptive pill
- Recent dental surgery
- PMH: TB/Cancer (breast/lung/prostate/thyroid/kidney)
- Unable to lie flat
- Sudden change in spinal curves
- Osteoporosis with minor trauma
- CES symptoms questioning
- Cardiovascular history
- Inflammatory history
- Recent infection and new onset LBP

SERIOUS SPINAL PATHOLOGIES

SPINAL PATHOLOGIES	SIGNS/SYMPTOMS/RISK FACTORS
MSCC [Follow GP urgent Spinal Orthopaedic pathway]	SIGNS & SYMPTOMS: • Referred back pain is multi-segmental or band like • Escalating pain which is poorly responsive to treatment • Different character or site to previous symptoms • Funny feelings, odd sensations or heavy legs (multi-segmental) • Lying flat increases back pain • Agonising pain causing anguish and despair • Gait disturbance, unsteadiness, especially on stairs • Sleep grossly disturbed due to pain being worse at night <i>(taken from Alert Card: Greenhalgh et al, 2010)</i> • Symptoms may wax and wane • Cauda Equina Symptoms (CES) • Night sweats RISK FACTORS: • PMH: Prostate/Lung/Breast/Thyroid/Kidney most commonly have affinity to metastasize to bone especially spine • Most common site is thoracic spine but can occur lumbar/cervical (essential to do whole spine MRI) • 30% go on to develop metastases • 2 years post primary diagnosis 50% metastasize but can occur later
Multiple Myeloma [Follow GP 2 week fast track cancer pathway]	SIGNS & SYMPTOMS: • A persistent dull ache or bony tenderness – often back, ribs or pelvis • May cause bone fragility which may result in fracture, vertebral collapse and cord compression • Tiredness, weakness or shortness of breath caused by anaemia • Repeated infections • Extreme thirst, nausea, stomach pain, increased urination, constipation (due to hypercalcaemia) • Blurred vision, headaches, dizziness (due to hyperviscosity of the blood) • Signs of kidney failure • Diagnosis on a constellation of findings using acronym CRAB: calcium elevation with renal dysfunction, anaemia and backache/bone pain (not all need to be present) RISK FACTORS: • Men>Women • Adults over 60 • Black people affected > White or Asian people • FH: multiple myeloma or monoclonal gammopathy of unknown significance

SERIOUS SPINAL PATHOLOGIES

SPINAL PATHOLOGIES	SIGNS/SYMPTOMS/RISK FACTORS
Spinal Infection: Spinal Tuberculosis/Vertebral Osteomyelitis/Discitis [Urgent A&E referral]	SPINAL TUBERCULOSIS: SIGNS & SYMPTOMS • Localised spinal pain • Malaise • Weight loss • Loss of appetite • Night sweats • Kyphosis – result of vertebral collapse • Potential neurological symptoms if causes #/collapse RISK FACTORS: • Sites: lower thoracic/upper lumbar most common • PMH: Previous TB infection • Born in TB endemic country (Asia & Africa)
	VERTEBRAL OSTEOMYELITIS: SIGNS & SYMPTOMS • Severe localised low back pain • Difficulty walking • Fever (not always) or chills • Weight loss • Muscle spasms • Neurological symptoms if causing vertebral collapse RISK FACTORS: • Recent bacterial/fungal/viral infection • Recent spinal surgery/injection • Immunosuppressed – DM/RA/HIV/Malignancy • IVDU/Alcoholism/Smoker • Renal impairment • Poor living conditions • Can occur in cervical/thoracic commonly lumbar • Age: children or over 50 more commonly affected • Males > Females
	DISCITIS: SIGNS & SYMPTOMS • Severe localised low back pain • Gross loss of movement • Difficulty walking • Fever (not always particularly when the infection has localized within the disc) • Weight loss • Muscle spasms RISK FACTORS: • Recent bacterial/fungal/viral infection • Recent spinal surgery/injection • Immunosuppressed – DM/RA/HIV/Malignancy • IVDU/Alcoholism/Smoker • Renal impairment • Poor living conditions • Can occur in cervical/thoracic commonly lumbar • Age: children or over 50 more commonly affected • Males > Females

SERIOUS SPINAL PATHOLOGIES

SPINAL PATHOLOGIES	SIGNS/SYMPTOMS/RISK FACTORS
Spondyloarthropathy [Follow GP Rheumatology pathway]	SIGNS & SYMPTOMS: • <45 with 4 or more of following features • Spinal pain which decreases with activity • Wakes second half of the night • Better with NSAIDs • Buttock pain • Stiffness in morning lasting over 30 minutes • Dactylitis • Enthesitis • Uveitis • Psoriasis • Axial: ankylosing spondylitis/reactive/psoriatic/RA • Recent infection (bowel/genitourinary) RISK FACTORS: • FH: Inflammatory conditions • Caucasian>Afro-Caribbean/Asian
Osteoporotic vertebral compression fracture [Pathway: discuss with mentor as urgent referral not always required to secondary care]	SIGNS & SYMPTOMS: • Sudden severe back pain • T8-L2 most common sites • Pain worse on standing/walking/change of position • Relieved by rest/lying down • Sudden change in spinal curves • Neurological symptoms with vertebral collapse RISK FACTORS: • Minor trauma with osteoporosis • Female > Male • Malabsorption problems (e.g. coeliac) • Hyperparathyroidism • Steroid use – 5mg>3months • Tumours • Over 65 • Alcohol consumption – over 3 units per day • Early menopause • Smoker/smoking history • History of RA
Craniocervical Instability [If acute injury urgent A&E referral/Chronic follow GP urgent Spinal Orthopaedic pathway]	SIGNS & SYMPTOMS: • Feeling like “they need to hold their head on” • Neck pain • Occipital headache • Dizziness • Myelopathic symptoms RISK FACTORS: • PMH: Downs syndrome, RA, TB, EDS, tumours such as haemangioma or aneurysmal bone cysts • May occur with other structural abnormalities such as atlantoaxial instability and Chiari malformation • Major trauma – RTA, head injury – fall or blow • Minor trauma – osteoporotic patient

SERIOUS SPINAL PATHOLOGIES

SPINAL PATHOLOGIES	SIGNS/SYMPTOMS/RISK FACTORS
Cervical Myelopathy [Follow GP urgent Spinal Orthopaedic pathway]	SIGNS & SYMPTOMS: • Clumsiness in hands/loss of dexterity • Gait disturbance • Loss of bladder, bowel, sexual function • Upper Motor Neurone signs: Brisk reflexes, Hoffman's positive, Babinski – up-going plantars • Lhermitte's sign • Finger escape sign RISK FACTORS: • Age – more common in elderly • Congenitally narrow canal • Current or smoking history
Cervical Vascular Lesions (Stroke/Carotid Artery Aneurysm/Arterial Dissection/Vertebrobasilar Insufficiency) [Either urgent A&E referral or follow GP Vascular pathway]	SIGNS & SYMPTOMS: • Cranial Nerve disturbances - 5D's 3N's • Horner syndrome • One side weakness/ataxia/balance problems • Pulsatile mass in carotid area • Intense, acute pain around the jaw/head/neck • Syncope or pre-syncope • Memory problems or confusion RISK FACTORS: • PMH: Cerebrovascular disease/DM/Hypertension/Hypercholesterolemia/AF • Smoker or have smoked • Obesity • Subclavian Steal Syndrome (causes VBI) • FH: Carotid dissection • Connective tissue disease – Marfans/EDS • Blunt or penetrating trauma • Cervical manipulation
Cauda Equina Syndrome [Urgent A&E referral]	SIGNS & SYMPTOMS: • Back and/or sciatic pain plus • Any disturbance in bladder or bowel function (new) • Saddle or genital sensory disturbance • Bilateral leg pain • Severe or progressive bilateral neuro deficit of legs • Altered sexual function – new onset RISK FACTORS: • Large herniated lumbar disc • History of spinal stenosis/malignancy/osteoporosis • Congenitally narrow spinal canal • Spina Bifida
Abdominal Aortic Aneurysm [Urgent A&E referral]	SIGNS & SYMPTOMS: • Severe low back pain/flank pain worse on exertion • Groin or abdominal pain – band like pain • Blood pressure may have started to drop • Palpable, pulsatile abdominal mass left of umbilicus • Syncope, shortness of breath, dizziness RISK FACTORS: • Male over 50 • Smoker or have smoked • Hypertension/Hypercholesterolemia • Cardiovascular history: IHD • FH: AAA

SHOULDER & ELBOW

SERIOUS SHOULDER & ELBOW PATHOLOGIES

- Osteosarcoma
- Polymyalgia Rheumatica (PMR)/Giant Cell Arteritis (GCA)
- Acute Rotator Cuff Tear
- Loosening/Infection: shoulder arthroplasty
- Acute Nerve Palsy (Axillary/Long Thoracic)
- Avascular Necrosis (AVN): Humeral Head
- DVT: Upper Limb

SPECIAL QUESTIONS

- Trauma/pain/weakness
- Mass/swelling/loss of joint range
- Red skin/fever/systemically unwell
- Epileptic fit/Electric shock

SHOULDER & ELBOW PATHOLOGIES	SIGNS/SYMPTOMS/RISK FACTORS
Osteosarcoma [Follow GP 2 week fast track cancer pathway]	SIGNS & SYMPTOMS: • Bone pain/pain around joint • Constant or more severity at night • Swelling/mass/deformity • Stiffness in the joint • Fatigue RISK FACTORS: • History of childhood cancer • Teens most commonly affected • Over 60 there is an increased incidence • Common site – proximal humerus
PMR/GCA [Refer for bloods (for inflammatory markers) and likely commence steroid Rx] [GCA: Follow local GCA pathway]	PMR SIGNS & SYMPTOMS: • Sudden onset (within a week or two), sometimes just after flu like symptoms • Painful stiffness shoulders +/- thighs/pelvic girdle (usually bilateral) • May feel unwell and have slight fever • May lose weight • Tiredness GCA SIGNS & SYMPTOMS: • 20% of PMR patients develop GCA • Severe headaches / pain in muscles of head • Temple tenderness • Pain in jaw, tongue or side of head when chewing • Pain or swelling of scalp • Blurred or double vision RISK FACTORS: • Women > Men between 70-80 years • Men more likely to suffer blinding eye involvement
Acute Rotator Cuff Tear [Follow GP urgent Orthopaedic pathway however may be dependent on lifestyle factors/patient choice]	SIGNS & SYMPTOMS: • Pain and weakness after trauma • Sudden loss of ability to raise arm (with or without trauma) RISK FACTORS: • Major trauma in younger patients • May be minor trauma in older patients

SHOULDER & ELBOW

SHOULDER & ELBOW PATHOLOGIES	SIGNS/SYMPTOMS/RISK FACTORS
Loosening/infection: Shoulder Arthroplasty [Follow GP urgent Orthopaedic pathway]	SIGNS & SYMPTOMS: • Red, hot swollen joint/wound – post operative acute • Feeling systemically unwell – fever/chills/night sweats • Pus/fluid from incision • Signs of sepsis – temperature/tachycardia/fast breathing • Chronic infection – persistent pain/sometimes loosening leading to failure • Fatigue • New onset shoulder pain/stiffness in arthroplasty side • Feeling of instability/giving way/dislocation • Long term unexplained pain RISK FACTORS: • Shoulder replacement surgery • Immunosuppressed – DM/COPD/RA/Alcoholism/IVDU • Prolonged surgery time • 10-15 years post-operative
Acute Nerve Palsy: Axillary/Long Thoracic Nerve [Referral dependent on cause]	• See Neurological Lesions
AVN Humeral Head [Follow GP urgent Orthopaedic pathway]	SIGNS & SYMPTOMS: • Pain which increases over time • Stiffness in joint RISK FACTORS: • Trauma injuries that may have damaged blood supply • Steroid use – high dose such as prednisolone • Excessive alcohol consumption • Past radiation therapy/chemotherapy • Sickle cell anaemia • HIV • Commercial/military divers
DVT Upper Limb [Urgent referral to local Ambulatory care clinic]	SIGNS & SYMPTOMS: • Swelling in upper extremity • Pain • Visible collateral veins at shoulder girdle – not common RISK FACTORS: Primary causes (20%): • Repeated strenuous activity involving force (Paget-Schroetter syndrome) coupled with Venous Thoracic Outlet syndrome Secondary causes (80%): • Indwelling central venous catheter • Cardiac pacemakers • Malignancy • Surgery • Trauma • Immobilization • Pregnancy/oral contraceptives

HAND & WRIST

SERIOUS HAND & WRIST PATHOLOGIES

- Peripheral Inflammatory Arthropathy
- Scaphoid Fracture
- Acute Nerve Palsy: Wrist Drop
- Kienbock's Disease (Lunate AVN)
- Preiser's Disease (Scaphoid AVN)

SPECIAL QUESTIONS

- Handedness, occupation, previous injury
- Trauma - Mechanism of the injury
- Location of the pain.
- Presence and location of numbness and tingling.
- Functional limitations.
- Were any diagnostic test/imaging performed and what were the results?
- PMH

HAND & WRIST PATHOLOGIES	SIGNS/SYMPTOMS/RISK FACTORS
Peripheral Inflammatory Arthropathy [Follow GP urgent Rheumatology pathway]	RA SIGNS & SYMPTOMS: • MCPs mainly and can involve PIP • MCPs – when making a fist they will lose the contours of the knuckles (flattens) • Thumb - MCP • Swelling and stiffness – may be subtle in early phase • Nodules in 20% - subcutaneous PSORIATIC ARTHRITIS SIGNS & SYMPTOMS: • DIPs mainly • Dactylitis • Nail bed pitting • Nail bed separation RISKS FACTORS: • See Generic Inflammatory section
Scaphoid Fracture [Follow GP urgent Orthopaedic pathway]	SIGNS & SYMPTOMS: • Pain and swelling in the anatomic snuffbox • Pain on wrist and thumb movement. • Pain and/or loss of strength during pinch/power grip • Wrist Deformity (not always present) • Commonly misdiagnosed as wrist sprain • In some cases, a scaphoid fracture will not show up on an X-ray until 10 - 14 days after the initial injury RISK FACTORS: • Trauma

HAND & WRIST

HAND & WRIST PATHOLOGIES	SIGNS/SYMPTOMS/RISK FACTORS
Acute Nerve Palsy: Wrist Drop (Radial Nerve) [Referral dependent on cause]	See Neurological Lesions
Kienbock's disease (Lunate AVN) [Follow GP urgent Orthopaedic pathway]	SIGNS AND SYMPTOMS: - Swelling on the dorsal side of the wrist, along with synovitis - Pain over the crucifixion fossa - Stiffness and tenderness may develop over the lunate bone - Decreased active and passive flexion / extension - Pain mainly on extension - Progressive loss of grip strength - Pronation and supination maintained RISK FACTORS: - Most prevalent in Males age 20 – 45
Preiser's Disease (Scaphoid AVN) [Follow GP urgent Orthopaedic pathway]	SIGNS & SYMPTOMS: - More frequently in dominant hand - Pain on palpation of the anatomical snuff box - Prolonged use of corticosteroids, chemotherapy, trauma, collagen diseases, and alcoholism - Sometimes, slight swelling and loss of strength - The decrease in the amplitude of motion occurs only in advanced disease RISK FACTORS: - More prevalent in Females average age 45

HIP

SERIOUS HIP PATHOLOGIES

- Loosening/Infection Hip Arthroplasty
- Slipped Capital Femoral Epiphysis
- Avascular Necrosis: Femoral Head
- Femoral Aneurysm

SPECIAL QUESTIONS

- Pain/Clunking Hip Arthroplasty
- Systemically unwell/fever/hip pain
- Adolescent with new hip/knee pain
- New acute limp
- Sudden new inability to weightbear

HIP PATHOLOGIES	SIGNS/SYMPTOMS/RISK FACTORS
Loosening/infection Hip Arthroplasty [Follow GP urgent Orthopaedic pathway]	SIGNS & SYMPTOMS: • Red, hot swollen joint/wound – post operative acute • Feeling systemically unwell – fever/chills/night sweats • Pus/fluid from incision • Signs of sepsis – temperature/tachycardia/fast breathing • Chronic infection – persistent pain/sometimes loosening leading to failure • Fatigue • New onset of hip pain/stiffness in arthroplasty side • Feeling of instability/giving way RISK FACTORS: • Hip replacement surgery • Loosening – 5 in 100 • Immunosuppressed – DM/COPD/RA/Alcoholism/IVDU • Prolonged surgery time • 10-15 years post-operative
Slipped capital femoral epiphysis (adolescents) [Follow GP urgent Paediatric Orthopaedic pathway]	SIGNS & SYMPTOMS: • New onset hip/groin or diffuse knee pain • Limping • Deformity – shortening/externally rotated joint • Decreased range of movement at hip joint • Unable to stand on one leg RISK FACTORS: • Age: Pre-teens or teens (11 – 17 years old) • Atraumatic or minor injury • Sex: Boys > Girls • Obesity • Family history • Endocrine/metabolic disorder/inflammatory condition

HIP

HIP PATHOLOGIES	SIGNS/SYMPTOMS/RISK FACTORS
AVN Femoral Head [Follow GP urgent Orthopaedic pathway]	SIGNS & SYMPTOMS: • Pain which increases over time • Stiffness in joint RISK FACTORS: • Trauma injuries that may have damaged blood supply • Steroid use – high dose such as prednisolone • Excessive alcohol consumption • Past radiation therapy/chemotherapy • Sickle cell anaemia • HIV • Commercial/military divers
Femoral Aneurysm [Referral dependent on condition urgent A&E or Vascular team – needs local discussion]	SIGNS & SYMPTOMS: • Pulsatile mass in the groin • Pale • Pain • Perishing with cold • Pallor • Paralysis • Paraesthesia • Pedal pulses – reduced/absent • Blue toes – small clots washing from above RISK FACTORS: • Previous intermittent claudication • Often associated with aneurysms elsewhere (popliteal, aortic, iliac) • Vascular risk factors – smoking, hypertension, hypercholesterolemia, atherosclerosis • Previous history/family history of aneurysms • Older Males – more commonly • Connective tissue disease

KNEE

SERIOUS KNEE PATHOLOGIES

- Osteosarcoma
- Loosening/Infection Knee Arthroplasty
- Acute Locked Knee
- Spontaneous Osteonecrosis of the Knee (SPONK)
- Popliteal Aneurysm

SPECIAL QUESTIONS

- Pain/Clunk Knee Arthroplasty
- Systemically unwell/fever/hip pain
- Locking/Locked
- Giving way
- Immediate swelling post injury (haemarthrosis)
- Hot, red joint
- Loud pop/snap heard when injured
- Mass/Joint deformity
- Sudden new inability to WB

KNEE PATHOLOGIES	SIGNS/SYMPTOMS/RISK FACTORS
Osteosarcoma [Follow GP 2 week fast track cancer pathway]	SIGNS & SYMPTOMS: • Bone pain/pain around joint • Constant or more severity at night • Swelling/mass/deformity • Stiffness in the joint • Fatigue RISK FACTORS: • History of childhood cancer • Teens most commonly affected (Osteosarcoma and Ewing's sarcoma) • Over 60 there is an increased incidence (Osteosarcoma) • Adults above 40 (Chondrosarcoma) • Common site – proximal tibia/distal femur
Loosening/infection Knee Arthroplasty [Follow GP urgent Orthopaedic pathway]	SIGNS & SYMPTOMS: • Red, hot swollen joint/wound – post operative acute • Feeling systemically unwell – fever/chills/night sweats • Pus/fluid from incision • Signs of sepsis – temperature/tachycardia/fast breathing • Chronic infection – persistent pain/sometimes loosening leading to failure • Fatigue • New onset of knee pain/stiffness in arthroplasty side • Feeling of instability/giving way RISK FACTORS: • Knee replacement surgery • Loosening – 5 in 100 • Immunosuppressed – DM/COPD/RA/Alcoholism/IVDU • Prolonged surgery time • 10-15 years post-operative
Acute Locked Knee [Follow GP urgent Orthopaedic pathway]	• History of trauma/injury • Knee blocked to full extension • Effusion • Joint line tenderness

KNEE

KNEE PATHOLOGIES	SIGNS/SYMPTOMS/RISK FACTORS
SPONK [Follow GP urgent Orthopaedic pathway]	SIGNS & SYMPTOMS: - Typically unilateral medial - Sudden onset of severe knee pain - Effusion - Limited joint range of movement - Most commonly affects medial condyle - Tenderness along joint line - Pain at night and on weight bearing RISK FACTORS: - SPONK - Female > Males over 60 - Secondary osteonecrosis – risk factors as AVN - Third type – post-arthroscopic
Popliteal Aneurysm [Referral dependent on condition urgent A&E or Vascular team – needs local discussion]	SIGNS & SYMPTOMS: - Pulsatile mass in the back of knee - Pale - Pain - Perishing with cold - Pallor - Paralysis - Paraesthesia - Pedal pulses – reduced/absent - Blue toes – small clots washing from above RISK FACTORS: - Previous intermittent claudication - Often associated with aneurysms elsewhere (popliteal, aortic, iliac) - Vascular risk factors – smoking, hypertension, hypercholesterolemia, atherosclerosis - Previous history/family history of aneurysms - Older Males – more commonly - Connective tissue disease

FOOT & ANKLE

SERIOUS FOOT & ANKLE PATHOLOGIES

- Peripheral Inflammatory Arthropathy
- Achilles Tendon Rupture
- Charcot Foot
- Acute Nerve Palsy
- Mueller-Weiss Syndrome (Navicular AVN)
- Compartment Syndrome
- DVT: Lower Limb

SPECIAL QUESTIONS

- Inability to weightbear
- Trauma history
- Bruising
- Joint deformity
- Swelling
- PMH: DM
- Numbness

FOOT & ANKLE PATHOLOGIES	SIGNS/SYMPTOMS/RISK FACTORS
Peripheral Inflammatory Arthropathy [Follow GP urgent Rheumatology pathway]	RA SIGNS & SYMPTOMS: • MTPs mainly and can involve PIP • Swelling and stiffness – may be subtle in early phase • Nodules in 20% - subcutaneous PSORIATIC ARTHRITIS SIGNS & SYMPTOMS: • DIPs mainly • Dactylitis • Nail bed pitting • Nail bed separation RISKS FACTORS: • See Generic Inflammatory section
Achilles Tendon Rupture [Urgent Fracture/soft tissue injury clinic or A&E referral]	SIGNS & SYMPTOMS: • Audible snap or pop during sport or running activity • Sudden, significant pain in the calf or back of the ankle • Inability to walk or continue the precipitating activity • Unable to single leg heel raise • Simmonds triad (altered angle of declination, palpable gap and a positive squeeze/Thompson test) • Palpable tendon gap (No gap may be felt in the acute phase due to haematoma or in the chronic phase due to organization) • Bruising may be seen RISK FACTORS: • Trauma • Antibiotics use (Fluroquinolones, Doxycycline, Tetracycline and Macrolides)
Charcot Foot [Follow GP urgent Diabetic clinic pathway and/or urgent Orthopaedic pathway]	SIGNS & SYMPTOMS: • Neuropathy – with possible development of pain when there has been an absence of sensation previously • Trauma history – may be mild sprain (often the trigger) but can also develop without trauma • Deep aching feeling • Markedly warm and extremely swollen foot • Acute local inflammation may be where injury is • May have slight musculoskeletal deformity in early stages or none • Bounding pedal pulses – early phase • May also develop possible bone infection and/or inflammation of the joint membranes RISK FACTORS: • History of diabetes/peripheral neuropathy

FOOT & ANKLE

FOOT & ANKLE PATHOLOGIES	SIGNS/SYMPTOMS/RISK FACTORS
Acute Nerve Palsy: Foot Drop (Peroneal Nerve) [Referral dependent on cause]	See Neurological Lesions
Mueller-Weiss Syndrome: (Navicular AVN) [Follow GP urgent Orthopaedic pathway]	SIGNS & SYMPTOMS: - Midfoot pain over the dorsomedial aspect of the foot - Stiffness in hindfoot/midfoot RISK FACTORS: - Vascular supply interruption - Fractures/Stress fractures - Idiopathic
Compartment Syndrome [Urgent A&E referral if acute]	SIGNS & SYMPTOMS: - Pain - Pallor - Paraesthesia - Pulselessness - Paralysis RISK FACTORS: Acute: - Post fracture/crush injury - Post-surgery - Plaster cast - Burns Chronic (exertional) - Gradual onset repetitive exercise - Young runners/cyclists
DVT: Lower Limb [Urgent referral to local Ambulatory care clinic] [Alternatively request urgent D-dimer test and arrange urgent USS with consideration to A+E depending on Wells score]	SIGNS & SYMPTOMS: - Throbbing or cramping pain in affected leg - Usually calf or thigh - Swelling - Warmth around the site - Red or darkened skin - Swollen veins – painful to touch - Breathless or chest pain may be pulmonary embolus - Positive Homans sign - Wells criteria for DVT RISK FACTORS: - Over 60 - Obesity - Smoker - History of thrombophilia - Oral contraceptive/HRT - Malignancy - Heart failure - Varicose veins - Prolonged bed rest/travel - Pregnancy

ABBREVIATIONS

ABBREVIATION	MEANING
AAA	Abdominal Aortic Aneurysm
AVN	Avascular Necrosis
BMI	Body Mass Index
CES	Cauda Equina Syndrome
COPD	Chronic Obstructive Pulmonary Disease
DM	Diabetes Mellitus
DVT	Deep Vein Thrombosis
EDS	Ehlers Danlos Syndrome
FH	Family History
GCA	Giant Cell Arteritis
GP	General Practitioner
HIV	Human Immunodeficiency Virus
HPV	Human Papillomavirus
HRT	Hormone Replacement Therapy
IHD	Ischemic Heart Disease
IVDU	Intravenous Drug User
MSCC	Metastatic Spinal Cord Compression
NSAIDS	Non Steroidal Anti-inflammatory Drugs
PMR	Polymyalgia Rheumatica
PMH	Past Medical History
P&N	Pins and Needles
RA	Rheumatoid Arthritis
RTA	Road Traffic Accident
SPONK	Spontaneous Osteonecrosis of the Knee
TB	Tuberculosis
TIA	Transient Ischemic Attack
VBI	Vertebrobasilar Insufficiency

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