Summary: Common Pediatric Lower Limb Disorders

Presentations

Symptoms	What is it?	Examination + Investigation	Treatment
Leg Aches	= **Leg Pain** most commonly Growing pain: which is benign pain, without limping or functional disability	○ Nonspecific tenderness in large area, or even none ○ Normal joint motion ○ Exclude serious conditions	**Resolve spontaneously** ✓ Symptomatic treatment: rest, massage, analgesia ✓ Reassurance
Limping	= **Abnormal Gait** **Causes:** deformity, weakness, or pain	○ **Gait good analysis** Above pelvis: back "scoliosis" Below: hips, knee, ankle, feet ○ **Neurovascular**	**Treat the cause**
Deformities	★ **Leg length inequality** **Types**: True or apparent **Causes**: congenital, developmental, trauma, infection, metabolic, tumor	○ **Clinical picture:** abnormal Gait, equinus deformity, leg pain back pain -> scoliosis ○ **Exam**: Measure discrepancy ○ **Imaging**: centigram	**If the difference > 2cm:** Shorter limb: ✓ shoe rise ✓ bone lengthening surgery Longer limb: ✓ Epiphysiodesis ✓ bone shortening surgery
	★ **Out-toeing** very rare! Big toe directed outward ★ **In-toeing**: very common! Big toe directed inward **The 4 levels:** 1- ↑ femoral anteversion 2- tibial torsion 3- forefoot adduction 4- big toe wandering	**General** : Foot Propagation Angle[1] 1- Hips rotational profile[2] 2- Intermalleolus[3] +foot thigh axis[4] 3- Heel bisector line[5] 4- No special test	**General**: ✓ Education ✓ annual follow up ✓ surgery if > 8 yo with significant deformity 1- Sit cross legged 2- Spontaneous improvement 3- Anti-version shoes 4- Spontaneous improvement
	★ **Genu Valgus** = Knock knees ★ **Genu Varus** = Bow legs **Physiological** (bilateral + mild) Varus ⟶ straight ⟶ excessive valgus ⟶ normal valgus **Pathological** (uni /bi + severe) Rickets	**To roll out pathology:** ○ Examine signs of rickets ○ Order labs **Imaging:** ○ X-ray + mechanical access	**Non operative:** ✓ Physio: wait ✓ Patho: treat medically first **Operative:** ✓ Epiphysiodesis ✓ Corrective osteotomy

[1] **Normal:** (-10°) to (+15°) -> **Intoeing**: if the angle decreased -10 degrees
[2] **Normal**: Internal rotation /External rotation = 45/45 -> **Intoeing:** if the angle of anteversion increased IR/ER = 70-90 / 0- 20
[3] **Normal:** lateral malleolus is posterior to the medial malleolus by 30 - 35 degrees -> **Intoeing:** lateral malleolus directed more anterior
[4] **Normal:** (0°) to (-10°) -> **Intoeing**: if the angle decreased
[5] **Normal:** along the 2nd toe or 2nd web space -> **Intoeing**: If the line passes lateral to the third toe

Diseases

Diagnosis	What is it?	Examination + Investigation	Treatment
Proximal Tibia vara	= **Blount Disease** specific category of genu varus, Damage of proximal **medial tibial** growth plate **Risk factors:** ↑ weight, dark skin, early walker **Types:** Infantile, juvenile, adolescent	○ **Diagnosis**: x-ray "beak" ○ **Staging**: MRI	**Operative:** ✓ Corrective osteotomy
Club foot	1- Postural 2- Secondary to Spina Bifida 3- Primary idipathic: CTEV Congenital Talipes Equano Vara	**Deformity:** ○ Hindfoot: equinus + varus ○ Midfoot: Cavus "pronation" ○ Forefoot: adduction **Examination:** Can walk, Small foot, callosity Abnormal cavus crease	1- Physiotherapy 2- Treat the cause 3- Depend on the age **if < 12 m:** ✓ Ponseti serial cast weekly ✓ Then: Dennis Brown Splint **If >12 m:** ✓ Surgery: Soft tissue or bony or salvage arthrodesis
Cerebral Palsy	**Definition:** non-progressive brain insult occurred during perinatal period **Physiologic classification:** **Spastic,** Athetosis, Ataxia, Rigidity, Mixed **Topographic:** Monoplegia, Diplegia, Paraplegia, Hemiplegia, Triplegia, Quadriplegia	**Clinical picture:** ○ If Upper Limbs involved: Elbow + Wrist (flexed) ○ Lower Limbs: Hip (flexed, adduct, in rot) Knee (flexed) Ankle (equinus, varus /valgus) **Examination:** Hip: Thomas test Knee: popliteal angle Ankle: achilles tendon shortening	**Multidisciplinary** ✓ Pediatric neurology ✓ **Physiotherapy** ✓ Orthotics ✓ Social & governmental ✓ Neurosurgery V.P shunt ✓ Ophthalmology eye squint **Orthopedic surgery** mainly for spastic type: ✓ Tendon elongation, Tendon Transfer, Tenotomy ✓ Neurectomy ✓ Osteotomy

Done by: Sarah AlMutawa