Children's Hospital Of Wisconsin

Co-Management Guidelines

To support collaborative care, we have developed guidelines for our community providers to utilize when referring to, and managing patients with, the pediatric specialists at Children's Hospital of Wisconsin. Co-management guidelines provide protocols for jointly managing patient cases between community providers and our pediatric specialists.

Genu Varum Angular deformity of the proximal tibia in which the child appears "bowlegged"				
Diagnosis/symptom	**Referring provider's initial evaluation and management:**	**When to initiate referral/ consider refer to Orthopedic Clinic:**	**What can referring provider send to Orthopedic Clinic?**	**Specialist's workup will likely include:**

Signs and symptoms
• Genu varum that has persisted after 18 months of age, usually pronounced by the child beginning ambulation
• Screen for developmental delay
• Family history: short stature, angular knee deformities?
• Has problem improved, gotten worse, stayed the same?
• Measure the child's height and weight
• Measurement of femoral-tibial angle
• Neuromuscular exam
 	
Differential Diagnosis
	Diagnostic Tests
	• Radiographs
	  ○ Severe genu varum for age
	  ○ Height less than the 25th percentile
	  ○ Excessive internal tibial torsion
	  ○ Increasing genu varum
	  ○ Unilateral/asymmetry of limb alignment
	  ○ Lateral thrust
	  ○ Pain
	  ○ Abnormal hip exam
	• Radiographic characteristics: AP standing lower extremities
	  ○ Symmetrical involvement
		• Unilateral, lateral thrust, worsening appearance, not resolving after age 2yo
		• For patients under 10, otherwise healthy and without symptoms-Well Child Lower Extremity Clinic
		• For patients with symptoms/pain - General Orthopaedic Clinic
		• Referral to General ortho MD if over 10, neuromuscular, second opinion
			1. Using Epic
			• Please complete the external referral order
			In order to help triage our patients and maximize the visit, the following information would be helpful to include with your referral order:
			• Urgency of the referral
			• What is the key question you would like answered?
			Note: Our office will call to schedule the appointment with the patient.
			
			2. Not using Epic external referral order:
			• In order to help triage our patients and maximize the
				After referral to Orthopedic Clinic:
				• History
				• Physical Exam
				• Possible radiographs
				• Possible labs

Updated by: Allison Duey-Holtz
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• Hypophosphatemic Rickets • Physiologic bowlegs • Blounts • Pseudoachondroplasia • Focal fibrocartilaginous dysplasia • Osteogenesis imperfect	○ Normal-appearing growth plate ○ Medial bowing that involves the proximal tibia and the distal femur ○ Metaphyseal/Diaphyseal Angle • Laboratory Evaluation ▪ CMP ▪ CBC with differential ▪ Ionized Calcium ▪ PTH ▪ 25 Hydroxy Vitamin D ▪ I-25 Dehydroxy Vit D		visit time, please **fax** the above information to **(414) 607-5288** • It would also be helpful to include: • Chief complaint, onset, frequency • Recent progress notes • Labs and imaging results • Other diagnoses • Office notes with medications tried/failed in the past and any lab work that may have been obtained regarding this patient's problems.	
<u>Causes</u> • Contracture of the medial knee capsule due to in-utero position. During the first year of development this internal rotation contracture leads to external rotation of the entire lower limb and the clinical genu varum posture of the infant (3). • Spontaneous resolution typically begins by 18-22 months, correction continues over the next 2-3 years and overcorrection to a maximum genu valgum is seen between 3.5- 4 years. The valgus angle then decreases to the adult degree of valgus between 7 and 11 years of age. (3)				**<u>Follow Up Recommendations</u>** • Follow up as needed ○ if genu varum is deemed age/developmentally appropriate but PA/NP or family would like follow-up ○ 4 months if metaphyseal-diaphyseal angle between 10-15 degrees • Referral to endocrine for abnormal laboratory evaluation (i.e. rickets) • Follow up with surgeon ○ If metaphyseal/diaphyseal angle greater than 15 degrees and/or lateral thrust ○ Progressive ○ Underlying pathology causing genu varum

Evidenced Based Literature Review

1. Greene, W.B. (1996). Genu varum and genu valgum in children: Differential diagnosis and guidelines for evaluation. *Current Opinion in Pediatrics, 22*(1), 22-29.

2. Health, C.H. & Staheli, L.T. (1993). Normal limits of knee angle in white children-Genu varum and genu valgum. *Journal of Pediatric Orthopedics, 13*, 259-262

3. Do, T.T. (2001). Clinical and radiographic evaluation of bowlegs. *Current Opinion in Pediatrics, 13*(1), 42-46.

4. Zionts, L.E. & Shean, C.J. (1998). Brace treatment of early infantile tibia vara. *Journal of Pediatric Orthopedics, 18*(1), 102-109.

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