Practical Orthopaedics: Common Congenital Diagnoses in the Newborn

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Future of Pediatrics
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GOALS

1. Identify opportunities to diagnose and treat in your office.
2. Understand diagnoses that do NOT require a work up.
3. Define clear referral guidelines for common conditions.
Polydactyly

- Genetic
- Blacks > whites
- Small toe/finger most common
Polydactyly
Polydactyly
Polydactyly
Metatarsus Adductus

- Flexible = correctible
- Observe vs. casting

CURVED LATERAL BORDER
Metatarsus Adductus

- Flexible = correctible
- Observe vs. casting

NOT TO BE CONFUSED WITH...

CURVED LATERAL BORDER
Clubfoot
Clubfoot  talipes equinovarus

cavus
internal rotation
varus
adductus
equinus

CAN’T DORSIFLEX
Cast #4
Cast #5 (post tenotomy)
3 weeks later...
Key to success!
You can play a big role.
1 year old.
3 years old
7 years old
IF CASTING FAILS = SURGERY
JUST BEFORE WALKING AGE
Calcaneovalgus foot

- Intrauterine positioning
- Resolve 1-2 months
- Cast if not
- Look for tibial bowing
## Tibial Bowing

<table>
<thead>
<tr>
<th>Bowing</th>
<th>Diagnosis</th>
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</thead>
<tbody>
<tr>
<td>Anterolateral</td>
<td>Congenital pseudarthrosis (NF1)</td>
</tr>
<tr>
<td>Posteromedial</td>
<td>Benign</td>
</tr>
<tr>
<td>Anterior (+/- medial)</td>
<td>Fibula hemimelia</td>
</tr>
</tbody>
</table>
Anterolateral Tibial Bowing

NF type 1

Brace to avoid fracture
Surgery for fracture
Posteromedial Tibial Bowing

Calcaneovalgus foot and LLD

Foot deformity will improve
Leg length discrepancy will need treatment
Fibular deficiency

Reconstruction of leg or amputation depending on foot and length of leg
Congenital Knee Dislocations
After casting/splinting...
DDH

- Spectrum of disease
- Common cause of OA
  - Most <40 yo female
  - 5-10% all

X-rays after 4 months

U/S until 6 months old
DDH

- X-rays after 4 months
- *Breech (2-27%)
- *Family history (12x 1° relative)
- Swaddling
- Female
- First born
- L>R

Female w/o risk factor = 75% cases

U/S until 6 months old
Galeazzi’s sign
difference in knee height

look for asymmetric thigh folds – not specific

Decreased abduction
DDH

instability common at birth $\rightarrow$ most resolves

Barlow positive hip “dislocatable”

Ortolani positive hip “relocatable”

hip clicks = soft tissues moving over bony prominences;

NO ASSOCIATION WITH DDH
AAP Guidelines

Abnormal exam → Ortho

Inconclusive 2 week exam → Ortho or U/S 3-4 weeks

+FH (F) or breech (M+F) → U/S 6 wks or XR 4 months

AAP Guidelines – Surveillance concept

Consider imaging before 6 months of age for male or female infants with normal findings on physical examination and the following risk factors:

1. Breech presentation in third trimester (regardless of cesarean or vaginal delivery)
2. Positive family history
3. History of previous clinical instability
4. Parental concern
5. History of improper swaddling
6. Suspicious or inconclusive physical examination

Referral

- +Ortolani
- Dislocated hip
- Limited/asymmetry abduction > 4 weeks age
- Relative: risk factors, questionable exam, pediatrician/parent concern

DDH

- Pavlik (<6 months)
- NO DOUBLE DIAPERS
- Closed vs. open reduction when older

Associated conditions (?):
- torticollis
- metatarsus adductus
DDH – dislocated hip

Unilateral ≠ bilateral
Congenital Muscular Torticollis

- Associated with DDH
- Different than paroxysmal torticollis

- “packing” problem
- infant
- +/- SCM mass

stretching program
Congenital Muscular Torticollis
## Torticollis

<table>
<thead>
<tr>
<th>Type</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Muscular torticollis (not painful)</td>
<td>Fetal positioning</td>
</tr>
<tr>
<td></td>
<td>SCM mass stretching</td>
</tr>
<tr>
<td>Congenital spine anomalies (not painful)</td>
<td>Need x-rays</td>
</tr>
<tr>
<td>Infectious (Grisel’s) (painful)</td>
<td>Retropharyngeal abscess</td>
</tr>
<tr>
<td></td>
<td>After ENT surgery</td>
</tr>
<tr>
<td>Traumatic (painful)</td>
<td>C1-C2 subluxation</td>
</tr>
<tr>
<td>Neoplasms</td>
<td>Posterior fossa tumor</td>
</tr>
<tr>
<td></td>
<td>Upper motor signs (↑DTR)</td>
</tr>
<tr>
<td>Paroxysmal</td>
<td>Migraine variant</td>
</tr>
<tr>
<td></td>
<td>Lasts only for minutes recurrent</td>
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</table>
Thank you!

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