Approach to surgical problems in pediatrics

Objectives:

- ❖ Realize the impact of Age :
  - Where/who are the history sources
- ❖ Recognize and interpret the :
  - Important symptoms
  - Important signs

Resources:

- Davidson's.
- Slides
- Surgical recall.
- Raslan's notes.

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History & The impact of age (Less than 3-4 year)

- **Difficult to communicate**
  - Verbal expression
  - Fear of strangers doctors with needles
- **History sources**
  - Mother is the best source (Social barrier less than what we expect)
  - Father is not very reliable
  - Nurses are the best source of information (in chronically hospitalized children) :
    - Not always possible
    - Important in PICU/ NICU (Pediatric ICU / Neonatal ICU)
  - family physician, pediatrician who is familiar with the child

Symptoms of surgical abdomen

- **Feeding & Growing** is the most important symptom of GI problems
  - Feeding well and growing→ healthy baby how many times does the baby feed? And ask about height and weight
  - Poor feeding indicates :
    - Sick baby → from any GI or systemic cause (ear infection,UTI)
    - GI obstruction
    - Pain
- **Persistent vomiting → Sick baby**
  - Frequency
  - Color :
    - Milk (physiological or obstruction before ampulla of Vater, no bile)
    - greenish (pathological → obstruction after ampulla of Vater)
  - Force :
    - Projectile vomiting → caused by proximal obstruction (gastric outlet or 1st part of duodenum) why it is forceful ? because the stomach pumps strongly compared to the bowel
    - Small amount of vomit after each feed → regurgitation → normal as long as they are gaining weight (physiological, because the lower esophageal sphincter is weak, and not hungry after vomiting > normal absorption)

- When do we consider the vomiting is Pathological ?

1. if it was associated with failure to gain weight
2. changing in the color of vomit to greenish.
3. vomiting without feeding, So baby will vomit (saliva, bile, gastric juice and pancreatic juice).

- **Bowel movement (BM) :**
  - **Frequency**
    - What is the normal for infant? 0 to 4 times per day (zero is normal if it's less than 3 days + breastfeeding)
    - More than 4 days → Constipated (because of obstruction)
    - Failure to pass meconium in newborns (Meconium is the early feces (stool) passed by a newborn soon after birth, before the baby has started to digest breast milk or formula).

  (85% of babies pass meconium in the first 24 hours , 90% of babies pass it in the first 48 hours) If it takes more than 2 days → probably a congenital obstruction.
    - Meconium is dark brown, sticky and sterile ,it's the amniotic fluid swallowed by the baby + bile .

  - **Consistency:** soft firm > normal
    - Frequent & watery → diarrhea
    - Firm & dry → constipation
  - **Color :**
    - Very pale (white) → obstructive jaundice (caused by congenital obstruction)
    - Black → Melena (Upper GI Bleeding , which is very rare in children)
    - Bright red (rectal & anal fissures , rectal is uncommon while anal fissures are common in children)

    they usually get it by eating junk food with low fibers causing constipation > anal fissure.
- **Crying baby** **(**Babies communicate their needs by crying**)**
  - Hungry (most common)
  - Diaper is wet (urinate)
  - At >6 month → they learn to cry for other reasons
  - Want to be carried
  - Want to play
  - Baby who continue to cry, refuse feeding and dry → **pain**
    - Abdominal pain
    - Earache
    - Non-crying baby can be worrisome → **very sick** called non-responsive like in sepsis
- **Development :**
  - Physical growth (height and weight) This is what we care about in surgery
    - Chronic problems (Metabolic, Nutrition → gut health)
  - Psychological (not important for surgery)
    - Mental problem, chromosomal abnormalities
  - Motor (not important for surgery)
    - Syndrome
    - Metabolic

Relayed symptoms (by parents)

- **External abnormality** → anything that is seen/felt as abnormal by parents
- **Swelling:**
    - Abscess (how do you know if it is abscess or not ? by associated symptoms such as redness and tenderness with fever)
    - Mass (lymph node, Tumor, Cyst and Hernia) "swelling and non-tender"
    - Hernia (Lower abdominal swelling that comes and goes)
- **Color changes**
    - Inflammation
    - Rash
    - Vascular malformation : hemangioma
- **Mental changes**
    - ↓ Responsiveness : (Alarming sign)
        - Sleepy
        - Not interested in feeding
        - Indicates : Sepsis, shock, CNS trauma, metabolic (O2, Glu, urea)

Abdominal Problems come as a Combination of symptoms

- Vomiting
- Constipation / diarrhea
- Poor feeding
- Abdominal distension
- Palpable mass (felt by parents)
- Very dark or very pale colored stool
- Obstruction proximal / distal

Physical Exam

- **Vital signs**
    - Fever
    - RR, BP, HR, O2 Sat (values in babies are different from adults)

Babies usually have higher HR (because they have a small heart - which means less stroke volume - so the heart rate increases to maintain the cardiac output), RR is also high.
Lower BP (small blood vessels = low resistance).

- **Consciousness (crying)**
    - Crying baby → not very sick (not critical)
    - Unusually calm baby who doesn't respond normally → sick
- **Exam while crying**
    - Can't hear the chest well (Focus on inhalation)

- Can't examine abdomen well (Examine while taking breath ,Keep hand on abdomen)
- Can't concentrate (Parent are stressed → less time)

Otherwise similar to adult.

Never do a rectal examination on babies. It's not helpful, it causes anal fissures and it's very painful.

History (general skills)

- A good history = a good logical story
- Known major predisposing factors → Describe the current problem →Other risk factors → Symptoms of other possible complications
- Due to the relative difficulties in taking a reliable history and performing an accurate physical exam → We tend to depend more on investigations in diagnosing the underlying problems in infants

investigations:

- CBC
- Ultrasound is commonly used

Recall :

What is the motto of pediatric surgery?
"Children are NOT little adults!"
What is a simple way to distract a pediatric patient when examining the abdomen or tenderness?
Listen to the abdomen with the stethoscope and then push down on the abdomen with the stethoscope to check for tenderness