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Hari enjoys: operating, eating, spending time with friends and family, traveling, and watching Cal beat Stanford

Myths and Misconceptions in Pediatric Surgery

DISCLOSURES

• None
OUTLINE – MYTHS & MISCONCEPTIONS RELATED TO UMBILICAL ANOMALIES

• Umbilical Granulomas
• Omphalomesenteric Duct Remnants
• Urachal Anomalies
• Umbilical Hernias

WHAT WON’T BE COVERED
A six-week-old male infant is brought to the office by his mother. During a diaper change, she notes the following lesion. Intermittent staining of his clothing has been observed. He is otherwise faring well. What is the most likely diagnosis?

A) Umbilical hernia  
B) Urachal anomaly  
C) Umbilical granuloma  
D) Prolapsed bowel from an omphalomesenteric duct remnant
UMBILICAL GRANULOMAS

~1:500 births
Continued inflammation of granulation tissue after cord separation
Tissue becomes hypertrophic and won’t epithelialize
Presentation:
  Round, wet, pink, velvety lesion
  A few mm to 1-2 cm in size
  Persistent drainage or moisture involving umbilicus
Distinguish from omphalitis

THERAPY
Silver nitrate – 100+ years of experience
Sometimes requires repeated applications
Prepare/protect surrounding skin with petroleum jelly to prevent burns
Failure to respond to treatment should raise concern for other diagnoses
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THERAPY
Other Topical Agents

Double Ligature

Salt, Air Drying, Cryosurgery, Excision

Is that stool???
OMPHALOMESENTERIC DUCT (OMD) REMNANTS
Incidence ~2%, equal sex distribution
Result from failure of involution of the OMD
Multiple Variants
  - Patent OMD (‘congenital umbilical anus’)
  - Umbilical polyp or sinus
  - Meckel’s diverticulum (most common)
  - OMD cyst (rare)
  - Fibrous cord from small bowel to umbilicus

PRESENTATION
Enteric drainage from umbilicus
Intestinal obstruction
GI bleeding
Inflammation/Infection

DIAGNOSIS – Guided by clinical circumstances given multiple variants and presentations
H&P
X-rays (bowel obstruction)
US (intussusception)
Sinogram/fistulogram
Cross sectional imaging (CT, MRI)
Meckel’s scan
A five-month-old female infant is brought to the emergency room with a several day history of umbilical swelling, pain, and redness. She is having fevers. There is no umbilical drainage or history of an umbilical bulge. She is tolerating her feeds. What is the most likely diagnosis?

A) Infected urachal cyst  
B) Patent OMD  
C) Umbilical granuloma  
D) Incarcerated umbilical hernia
URACHAL ANOMALIES
~1:5000, M>F
Urachus connects the bladder to the allantois
Underlying etiology not known
  Bladder outlet obstruction not present postnataally
  in most urachal abnormalities

Variants
  Patent urachus
  Urachal sinus
  Urachal cyst
  Bladder diverticulum

PRESENTATION
~50% identified incidentally
Mean age ~4 years at dx
Most common symptoms: umbilical drainage, mass/cyst, and pain
  Urinary symptoms infrequent (<5%)
UTI, infected cyst

DIAGNOSIS
H&P
US
Sinogram/fistulogram
CT, MRI
VCUG
During a well child visit, an infant is found to have the following umbilical abnormality on examination. True or False: If still present at 5 years of age, this problem is exceptionally unlikely to resolve without an operation.

A) True
B) False
C) Unknown
UMBILICAL HERNIAS
Virtually all are congenital
Defect results from a persistent umbilical ring
   Incomplete fascial covering/closure
10-20% of all infants
No gender differences
More common in
   African Americans
   Premature and LBW infants
   Beckwith-Wiedeman syndrome, Hurler’s syndrome, various trisomies
   Children on peritoneal dialysis

Presentation
Fascial defect can range from several mm to a few cm
   Defects > 2 cm are unusual
Protrusion exacerbated with straining
Extent of skin protrusion not indicative of size of fascial defect
Incarceration and strangulation are main concerns with unrepaired umbilical hernias – both are quite rare
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**Treatment**

Majority close spontaneously

Spontaneous resolution rates of 83-95% by age 6 years

Observe until age 3-5 years to allow closure to occur

Hernias may continue to close after age 5 years

Can consider earlier closure if very large, undergoing another procedure, or for social reasons

>1.5 cm fascial defect unlikely to close?

Validity of this threshold for repair is unclear

**What not to do**

Pressure dressings:

Do not speed resolution

May result in skin irritation and breakdown
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Treatment – Umbilical Hernia Repair

Possible Complications:
- Seroma
- Hematoma
- Wound infection
- Recurrent hernia
SUMMARY

• Umbilical granulomas are common causes of umbilical drainage and can usually be treated with topical therapy

• Urachal and omphalomesenteric duct remnants represent rarer causes of umbilical drainage – both require an operation for cure

• Umbilical hernias rarely incarcerate and most should be observed until age 3-5 years

THANK YOU!

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