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Pediatric Surgery
Assistant Clinical Professor of Surgery, UCSD
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UNDERGRADUATE: University of California, Berkeley
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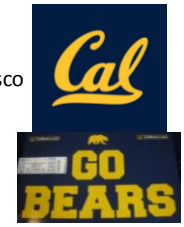
FELLOWSHIP: Boston Children's Hospital
RCSHD: 2015



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

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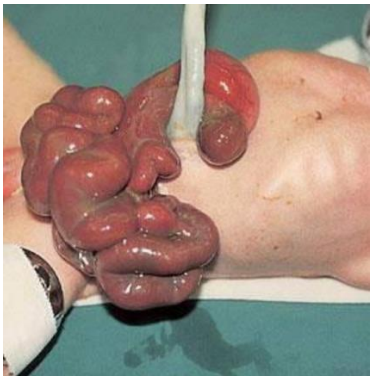
Myths and Misconceptions in Pediatric Surgery

WHAT WON'T BE COVERED



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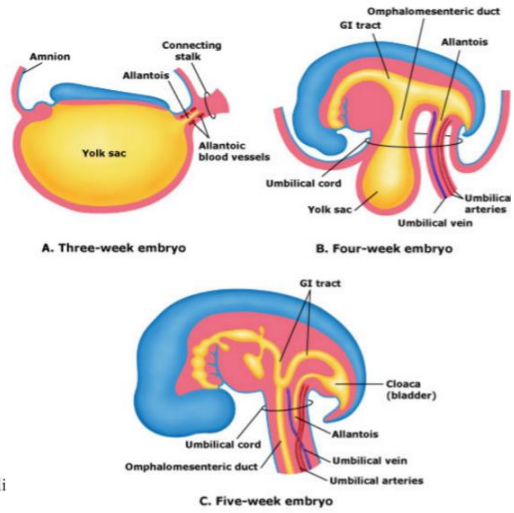
EMBRYOLOGY



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

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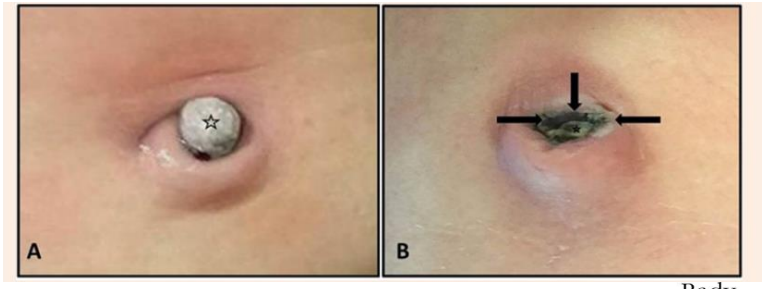
THERAPY

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

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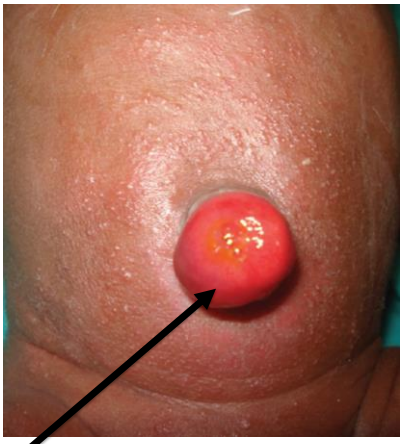

Is that stool???

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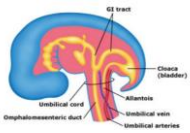
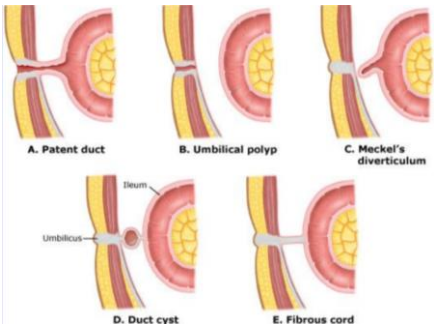
OMPHALOMESENTERIC DUCT (OMD) REMNANTS

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





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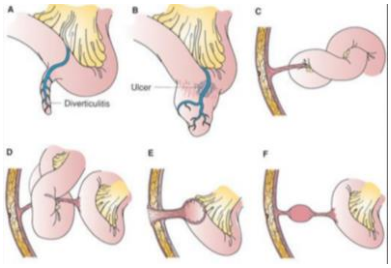
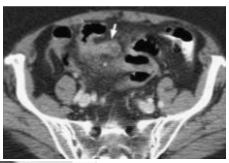
PRESENTATION

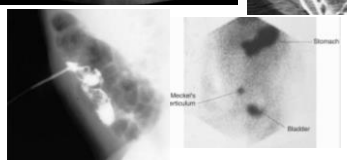
Enteric drainage from umbilicus
Intestinal obstruction
GI bleeding
Inflammation/Infection



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





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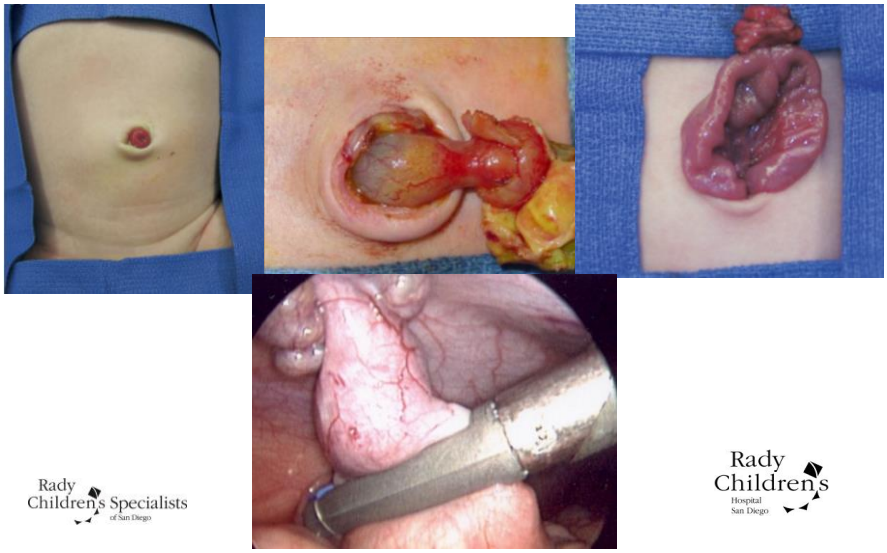
MANAGEMENT - Surgery



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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

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URACHAL ANOMALIES

~1:5000, M>F

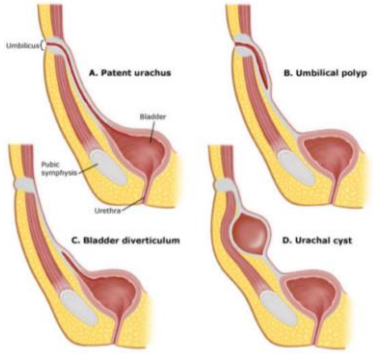
Urachus connects the bladder to the allantois

Underlying etiology not known

Bladder outlet obstruction not present postnatally in most urachal abnormalities

Variants

- Patent urachus
- Urachal sinus
- Urachal cyst
- Bladder diverticulur



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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

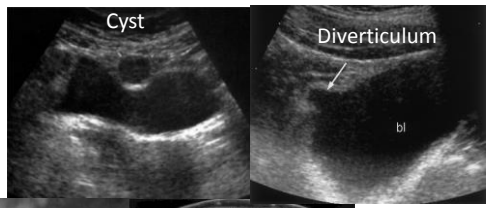
H&P

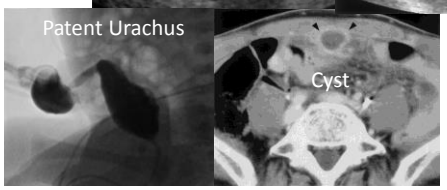
US

Sinogram/fistulogram

CT, MRI

VCUG





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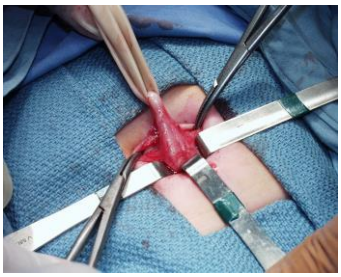
TREATMENT - Surgery



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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

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UMBILICAL HERNIAS

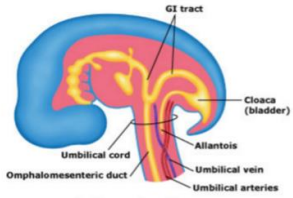
Virtually all are congenital

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



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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




Proboscoid Umbilical Hernias



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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

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Myths and Misconceptions in Pediatric Surgery

Treatment

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<u>What not to do</u>

Pressure dressings:
Do not speed resolution
May result in skin irritation and breakdown

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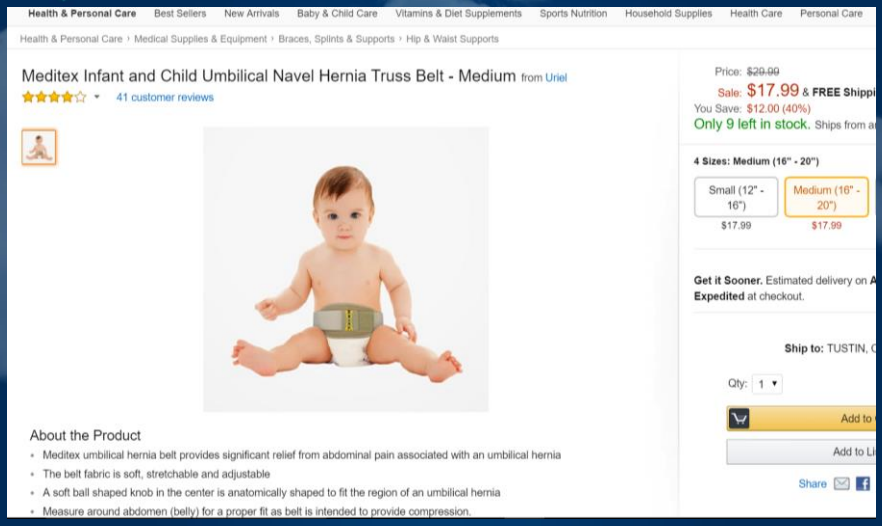

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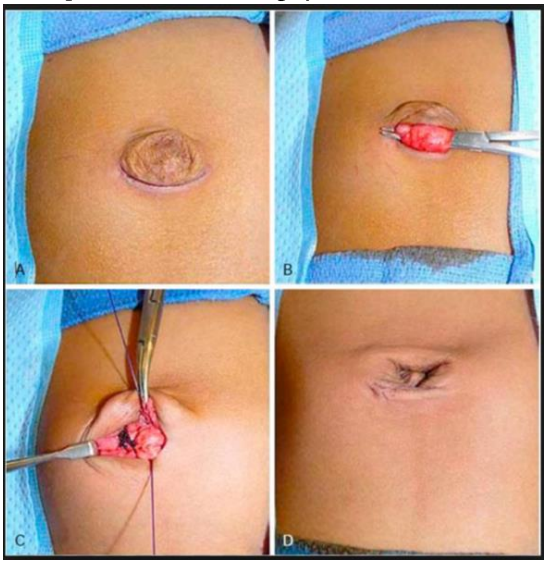
Treatment – Umbilical Hernia Repair



Possible Complications:

- Seroma
- Hematoma
- Wound infection
- Recurrent hernia

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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

Myths and Misconceptions in Pediatric Surgery

THANK YOU!

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