

ABDOMINAL ASSESSMENT FOR SCHOOL NURSES

NEUSHA SUMMER ACADEMY

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AUGUST 7, 2024

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INSPECTION

- CONTOUR AND SYMMETRY
- SCARS
- STRIAE
- RASHES AND LESIONS
- UMBILICUS
- MASSES

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AUSCULTATION

- AUSCULTATE BEFORE PALPATION AND PERCUSSION
- LISTEN FOR BOWEL SOUNDS:
 - HYPOACTIVE LESS THAN 3-5/MINUTE
 - NORMAL 5-30 SOUNDS PER MINUTE
 - HYPERACTIVE GREATER THAN 30 PER MINUTE
 - NO BOWEL SOUNDS-AFTER 2-5 MINUTES IN ALL 4 QUADRANTS
- LISTEN FOR BRUITS (USE BELL SIDE OF STETHOSCOPE)

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PERCUSSION

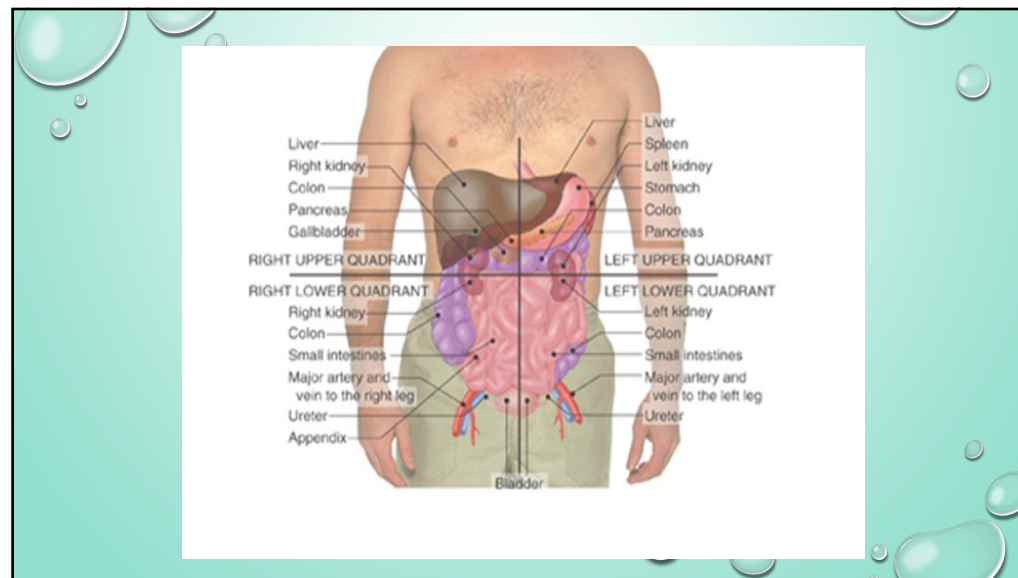
- ASSESS FOR TYMPANY AND DULLNESS
- ASSESS ORGAN SIZE-LIVER
- ASSESS FOR ASCITES

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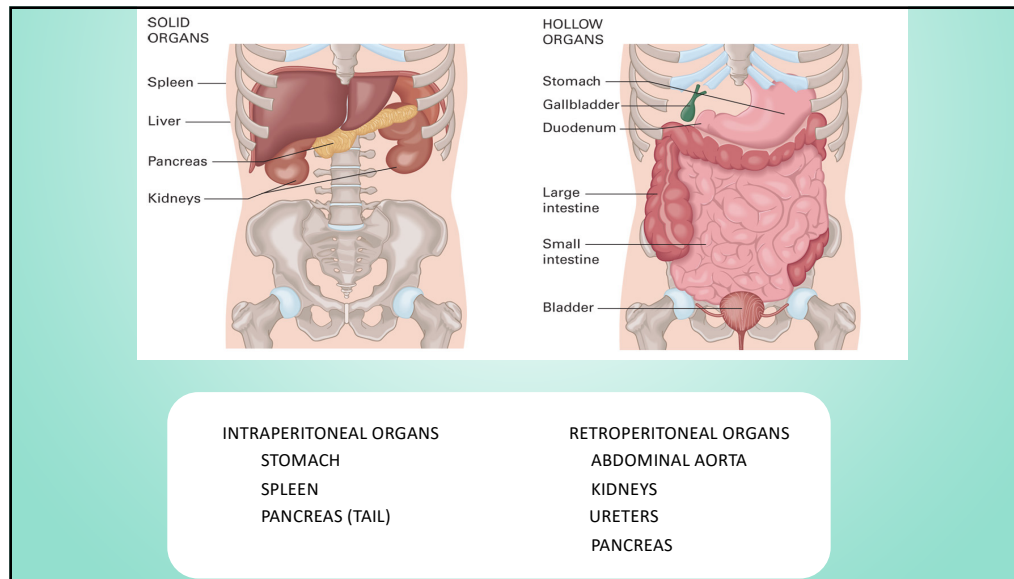
PALPATION

- PALPATING FOR MASSES, ORGAN SIZE, TENDERNESS
- REBOUND TENDERNESS OCCURS WHEN PERITONEUM BECOMES
INFLAMED PRESS AREA FAR AWAY FROM THE TENDER AREA AND
RELEASE SUDDENLY PAIN WILL OCCUR UPON RELEASE **NOT** WHEN
APPLIED (PALPATED) PAIN WILL OCCUR IN THE DISEASED AREA

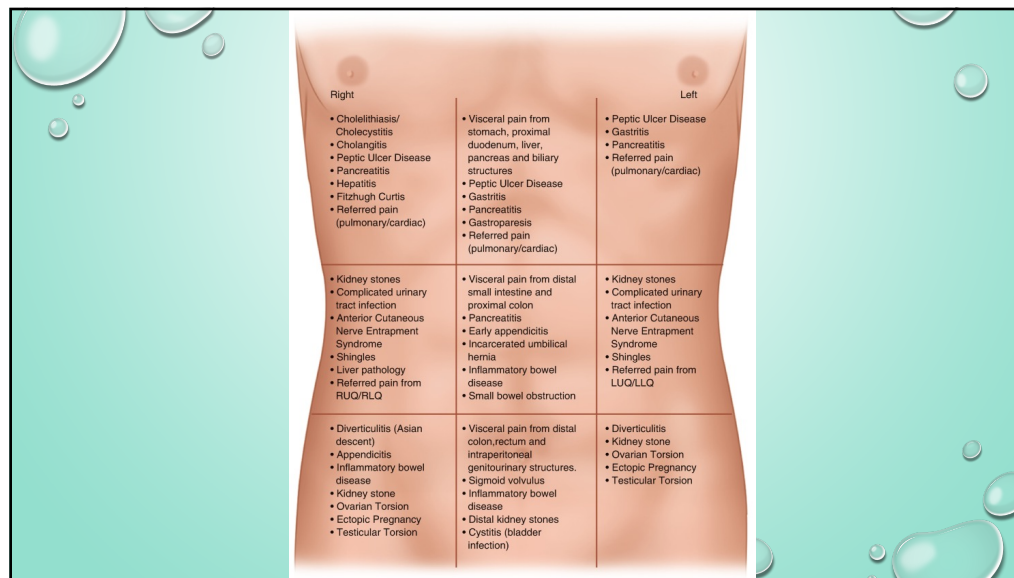
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ABDOMINAL PAIN

- MOST COMMON MEDICAL CAUSE: GASTROENTERITIS
- MOST COMMON SURGICAL CAUSE: APPENDICITIS
- ACUTE SURGICAL ABDOMEN: PAIN COME BEFORE VOMITING
- MEDICAL CONDITIONS: VOMITING STARTS FIRST

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CAUSES OF ABDOMINAL PAIN 5-18 YO

MEDICAL

- GASTROENTERITIS/FOOD POISONING
- FOOD ALLERGIES/INTOLERANCE
- CONSTIPATION
- FUNCTIONAL ABDOMINAL PAIN
- UTI/PYELONEPHRITIS
- STREP THROAT/MESENTERIC ADENITIS
- ABDOMINAL MIGRAINES
- RESPIRATORY ILLNESS-PNA
- SICKLE CELL
- IBD
- PANCREATITIS
- PARASITIC INFECTIONS

SURGICAL

- APPENDICITIS
- TESTICULAR TORSION
- OVARIAN TORSION
- INTESTINAL OBSTRUCTION
- CHOLECYSTITIS
- STRESS
- TRAUMA
- TOXIN/FB INGESTION

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CAUSES OF ABDOMINAL PAIN IN ADOLESCENTS

MEDICAL

GASTROENTERITIS/FOOD POISONING
 FOOD INTOLERANCES
 CONSTIPATION
 FUNCTIONAL ABDOMINAL PAIN
 GERD
 UTI/PYELONEPHRITIS
 STREP THROAT
 OVARIAN CYSTS/OVULATION
 PID
 URETERAL COLIC
 PANCREATITIS

SURGICAL

APPENDICITIS
 TESTICULAR TORSION
 OVARIAN TORSION
 INTESTINAL OBSTRUCTION
 ECTOPIC PREGNANCY
 DYSMENORRHEA
 CHOLECYSTITIS
 TRAUMA
 TOXIN INGESTION
 STRESS

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CAUSES OF ABDOMINAL PAIN FROM OUTSIDE THE ABDOMEN

SYSTEMIC

DKA
 ALCOHOLIC KETOACIDOSIS
 UREMIA
 SICKLE CELL
 SLE (LUPUS)
 VASCULITIS
 HYPERTHYROIDISM

TOXIC

METHANOL POISONING
 HEAVY METAL TOXICITY
 SCORPION BITE
 BLACK WIDOW BITE

GU

TESTICULAR TORSION
 RENAL COLIC

THORACIC

MI
 ANGINA
 PNEUMONIA
 PULMONARY EMBOLISM
 HERNIATED THORACIC DISC

ABDOMINAL WALL

MUSCLE SPASM
 HEMATOMA
 HERPES ZOSTER

INFECTIOUS

STREP THROAT
 MONONUCLEOSIS
 ROCKY MOUNTAIN SPOTTED FEVER

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ABDOMINAL PAIN HISTORY (PQRSTAAA)

P-PLACE/LOCATION

Q-QUALITY

R- RADIATES

S- SEVERITY- 1-10 SCALE

T- TIMING, TRAUMA

A- ALLEVIATING FACTORS

A- AGGRAVATING FACTORS

A- ASSOCIATED SYMPTOMS

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ADDITIONAL GI HISTORY

1. BOWEL MOVEMENTS-PATTERN, SIZE, HARD, SOFT, LAST ONE
2. INGESTION OF TOXINS/FOREIGN OBJECTS (MAGNETS)
3. TRAUMA
4. DIETARY HISTORY
5. PMH
6. SEXUAL HISTORY
7. FAMILY HISTORY
8. TRAVEL HISTORY
9. SOCIAL/PSYCHIATRIC HISTORY- POTENTIAL STRESSORS
10. CONTACT HISTORY

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RED FLAGS OF ABDOMINAL PAIN

1. BILIOUS VOMITING
2. BLOODY STOOLS OR EMESIS
3. NOCTURNAL WAKING WITH ABDOMINAL PAIN AND/OR DIARRHEA
4. HEMODYNAMIC INSTABILITY
5. WEIGHT LOSS
6. HISTORY OF INTRA-ABDOMINAL SURGERY
7. ABDOMINAL TRAUMA

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CASE STUDY

- SUSIE IS A 14 YO STUDENT WHO COMES INTO THE CLINIC COMPLAINING OF ABDOMINAL CRAMPS AND TWO EPISODES OF DIARRHEA IN THE LAST TWO HOURS. UPON ELICITING A HISTORY, SHE SHARES WITH YOU THAT HER SIBLING AND PARENT ARE HOME SICK WITH SIMILAR SYMPTOMS. THE NEXT STEPS IN YOUR INTERVENTIONS INCLUDE:
 - a) SENDING HER BACK TO CLASS
 - b) DISMISSING HER HOME
 - c) EDUCATION TO STUDENT AND PARENT
 1. A & C
 2. B & C

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GASTROENTERITIS

INFLAMMATION OF GI TRACT CAUSED BY AN INFECTION

VIRAL INFECTIONS, (MOSTLY ROTAVIRUS): 75-90% OF INFECTIOUS
DIARRHEA CASES

ROTAVIRUS

ENTERIC ADENOVIRUS

NOROVIRUS

ASTROVIRUS

BACTERIAL CASES: 10-20%

○ SALMONELLA

SHIGELLA

○ CAMPYLOBACTER

YERSINIA

○ ECOLI

CDIFF

PARASITES: 5%

○ GIARDIA

CRYPTOSPORIDIUM

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GASTROENTERITIS

SX: DIARRHEA
ABDOMINAL PAIN OR CRAMPING
NAUSEA AND VOMITING
FEVER
CLAMMY SKIN

SX OF DEHYDRATION:

EXTREME THIRST
URINE-DARK, SMALL AMOUNTS
DRY SKIN AND MOUTH
SUNKEN EYES/CHEEKS

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GASTROENTERITIS

DX: CLINICAL PICTURE/HISTORY
STOOL CULTURE FOR PROLONGED DIARRHEA

TX: SUPPORTIVE - FLUID REPLACEMENT

PREVENTION:

WASH YOUR HANDS
FOOD SAFETY
BOTTLED WATER WHEN TRAVELING

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Johnny is a 10 y.o. student who enters the clinic complaining of “belly pain”. He has already had lunch, but he didn’t really feel like eating. He points to his umbilicus and rates the pain as a 6. His temperature is 99.9 po. How would you proceed?

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1. COMPLETE YOUR ASSESSMENT INCLUDING AN EXAMINATION OF THE THROAT
2. SEND HIM BACK TO CLASS
3. CALL HIS PARENT/GUARDIAN
4. INSTRUCT PARENT/GUARDIAN OF NEED FOR FURTHER EVAL WITH PCP

A. 2,3,4

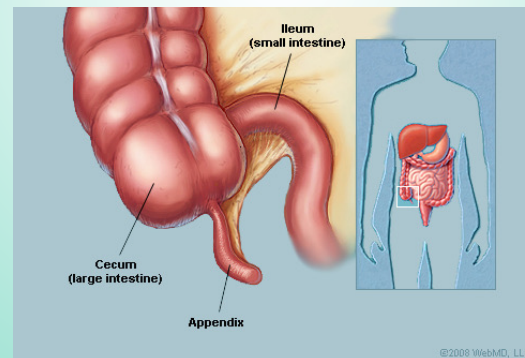
B. 1,2

C. 1,3,4

D. 1, 3

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APPENDIX



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APPENDICITIS

INFLAMMATION OF THE APPENDIX

CAUSE: NOT CLEAR

CAN BE SEEN AT ANY AGE, MORE COMMON 10-20 YO

SX: ANOREXIA

ABDOMINAL PAIN-STARTS DULL UMBILICAL PAIN, THEN BECOMES SHARP

GRAVITATING TO RLQ

ABDOMINAL TENDERNESS (+ MCBURNEY'S SIGN)

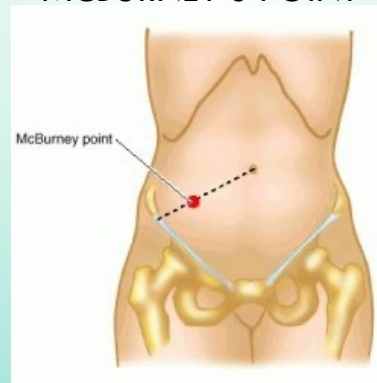
FEVER

VOMITING

MAY TAKE 4-48 HOURS TO DEVELOP

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MCBURNEY'S POINT



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ADVANCED ASSESSMENT FOR APPENDICITIS

ROVSIING SIGN-PAIN IN RLQ ON PALPATION OF **LEFT** SIDE OF ABDOMEN

PSOAS SIGN- PLACE HAND ABOVE RIGHT KNEE – ASK PT TO PUSH UP AGAINST YOUR HAND. IF APPENDIX INFLAMED THE CONTRACTION OF THE PSOAS MUSCLE CAUSES PAIN IN RLQ

OBTURATOR SIGN- PAIN IN RLQ ON INTERNAL ROTATION OF FLEXED RIGHT THIGH

[VIDEO](#) OF THESE TESTS

MARKLE SIGN (HEEL DROP JARRING TEST) – HAVE STUDENT STAND ON TOES, THEN SUDDENLY DROP DOWN ONTO THEIR HEELS WITH AN AUDIBLE THUMP- IF PAIN IS LOCALIZED UPON LANDING - + SIGN: SUGGESTIVE OF A POSITIVE APPENDICITIS.

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APPENDICITIS

DX:

CLINICAL PICTURE

LAB WORK- ELEVATED WBC, U/A TO R/O UTI

IMAGING: US OR CT SCAN

TREATMENT:

APPENDECTOMY

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WHICH IS THE MOST WORRISOME?

IF A STUDENT INGESTS:

1. ONE MAGNET
2. ONE METALLIC OBJECT
3. TWO MAGNETS
4. TWO METALLIC OBJECTS

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MAGNET INGESTION

CRITICAL TO DETERMINE HOW MANY MAGNETS OR OTHER METALLIC OBJECTS THE STUDENT SWALLOWED

SINGLE MAGNET: LOW RISK

**TWO OR MORE MAGNETS OR A MAGNET INGESTION
ALONG WITH A METAL OBJECT:**

IS AT RISK FOR BOWEL NECROSIS, OBSTRUCTION AND/OR PERFORATION

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MAGNET INGESTION

TIME IS IMPORTANT- COMPLICATIONS CAN OCCUR WITHIN 12 HOURS-
IMMEDIATE REFERRAL TO ER

EVEN IF STUDENT ADMITS TO ONLY INGESTING ONE MAGNET, MD
SHOULD GET X-RAYS (TWO VIEWS) TO VERIFY. TWO VIEWS ARE
NEEDED AS THE MAGNETS COULD BE STUCK BEHIND ONE ANOTHER.

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MAGNET INGESTION

DX: SELF DISCLOSURE
CLINICAL PICTURE/HISTORY
X-RAY (TWO VIEWS)

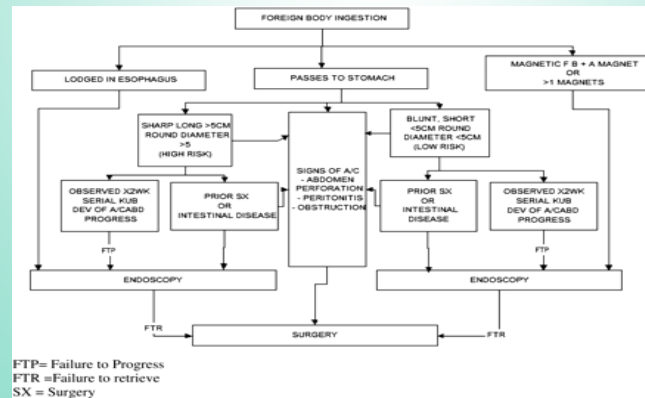
SX: MAY NOT HAVE SYMPTOMS FOR 12-36 HOURS
NAUSEA, VOMITING, ABDOMINAL PAIN

TX: DEPENDS ON SX, AS WELL AS SIZE, SHAPE AND # OF MAGNETS
AND/OR OTHER METALLIC OBJECTS INGESTED

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MAGNET INGESTION

JOURNAL AMERICAN BOARD FAMILY MEDICINE SEPTEMBER-OCTOBER 2006 VOL. 19 NO. 5 511-516



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GERD GASTROESOPHAGEAL REFLUX DISEASE

REFLUX OF THE STOMACH CONTENTS BACK UP INTO THE ESOPHAGUS

SX: HEARTBURN, COUGH (NOCTURNAL)

DX: CLINICAL PICTURE/HISTORY

UGI

ENDOSCOPY

TX: DIETARY

MEDICATIONS

LIFESTYLE CHANGES

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FUNCTIONAL ABDOMINAL PAIN

- DEFINITION:** CAN NOT BE EXPLAINED BY ANY VISIBLE OR DETECTABLE ABNORMALITY AFTER THOROUGH A EXAM AND TESTING
- CAUSE:** EXACT CAUSE UNKNOWN
POSSIBLE NERVE SIGNALS MAY CAUSE THE GUT TO BE MORE SENSITIVE TO TRIGGERS THAT DON'T NORMALLY CAUSE PAIN- STRETCHING, BLOATING
- INCIDENCE:** COMMON, APPROXIMATELY ALL 25% OF ALL PEDI GASTRO VISITS
- RISK FACTORS:** ANXIETY/DEPRESSION AND OTHER PSYCH DISORDERS MAY EXAGGERATE PAIN RESPONSES

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FUNCTIONAL ABDOMINAL PAIN

- SX:** USUALLY UMBILICAL PAIN
PATTERN AND LOCATION UNPREDICTABLE
MAY HAVE N,V,D,C AND EARLY SATIETY
- DX:** HISTORY AND NEGATIVE FINDINGS AND NEGATIVE TEST RESULTS
- TX:** REASSURANCE TO CHILD AND FAMILY THAT PAIN IS REAL
SUPPORTIVE/EDUCATION
MEDS MAY INCLUDE ANTISPASMODICS, ACID REDUCERS, LAXATIVES PRN, LOW DOSE TRICYCLIC ANTIDEPRESSANTS
DIET: MAY TRY ELIMINATING- GREASY, SPICY FOODS, CAFFEINE, SORBITOL, GAS PRODUCING FOODS

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ABDOMINAL TRAUMA

TWO TYPES OF TRAUMA

BLUNT-MVA, FALLS, ASSAULTS

PENETRATING: STAB WOUNDS, GSW

THERE ARE GRADING SYSTEMS FOR THE SEVERITY OF THE INJURY TO THE SPLEEN, LIVER AND KIDNEYS.

CLASS 1,2,3,4,5

1 = LESS SEVERE 5 BEING MOST SEVERE

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SPLEEN INJURY AND KIDNEY INJURY GRADES AND MANAGEMENT - SIMPLIFIED

WWW.OPENMED.CO.IN

GRADE	SPLEEN INJURY	KIDNEY INJURY
1	Subcapsular Hematoma < 10% Laceration < 1 cm	Subcapsular Hematoma
2	Subcapsular Hematoma - 10 - 50% Laceration 1 - 3 cm	Subcapsular Hematoma Laceration < 1 cm WWW.OPENMED.CO.IN
3	Subcapsular Hematoma > 50% Laceration > 3cm WWW.OPENMED.CO.IN	Laceration > 1 cm
4	> 25% Vascular Loss (Hilum Injury)	Partial Vascular Loss (Injury to Medulla)
5	Complete Vascular Loss Shattered Spleen	Complete Vascular Loss Shattered Kidney
MANAGEMENT	GRADE 1,2,3 - OBSERVATION (If Vitals are stable) GRADE 4,5 - SPLENECTOMY.	GRADE 1,2,3,4- OBSERVATION (If Vitals are stable) GRADE 5 - IMMEDIATE EXPLORATION

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ABDOMINAL TRAUMA

DX: CLINICAL PICTURE/HISTORY

CBC, METABOLIC PANEL

IMAGING STUDIES

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KIDNEY TRAUMA

GENERALLY PROTECTED BY BACK MUSCLES AND RIBS

TWO TYPES OF TRAUMA TO KIDNEY

A. BLUNT- CAR ACCIDENT, SPORTS INJURY

B. PENETRATING – GUNSHOT WOUND

SX:

- HARD TO DETECT, MAY SEE DISCOLORATION IN ABDOMEN OR ON BACK WHERE KIDNEY IS LOCATED
- PAIN IN ABDOMEN OR FLANK
- HEMATURIA

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KIDNEY TRAUMA

DX: CLINICAL PICTURE/HISTORY

BLOOD WORK

URINALYSIS

US, CT SCAN, IVP

TX: VARIES ON CONDITION OF PT, SEVERITY OF INJURY,
PRESENCE OF OTHER INJURIES

BED REST AND SERIAL URINES

SURGICAL INTERVENTION PRN

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ULTRASOUND MACHINE



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ULTRASOUND (US)

- WORKS BY USING HIGH FREQUENCY SOUND WAVES TO TO CREATE REAL TIME IMAGES OF INSIDE THE BODY
- NO IONIZING RADIATION EXPOSURE, ESSENTIALLY THE SAME AS EVERYDAY LIFE
- USE: FETAL, ABDOMINAL/PELVIC ORGANS, CARDIAC, MUSCLES, TENDONS, BLOOD VESSELS
- SCAN TIME: 20-60 MINUTES
- COST ABOUT \$200-800
- FIRST AVAILABLE IN THE US– LATE 60'S

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CAT (CT) SCAN COMPUTED AXIAL TOMOGRAPHY

- SPECIALIZED TYPE OF X-RAY
- X-RAY TUBE ROTATES AROUND PERSON AND COLLECTS DATA
- SMALL DEGREE OF RADIATION EXPOSURE
- CAN BE DONE WITH OR WITHOUT CONTRAST
- VERY GOOD FOR BONEY STRUCTURES, LUNG AND CHEST IMAGING
- RELATIVELY QUICK SCAN- ABOUT 5 MINUTES
- CHEAPER THAN MRI'S –ABOUT HALF THE PRICE
- FIRST AVAILABLE IN 1971

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CT (COMPUTED AXIAL TOMOGRAPHY) SCANNER



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MRI (MAGNETIC RESONANCE IMAGING)

- USES MAGNETS AND RADIO WAVES TO CREATE IMAGES, NO RADIATION EXPOSURE
- VERY HIGH DETAIL OF SOFT TISSUES, NOT GOOD FOR BONES
- ALSO USED TO SPINAL CORD AND BRAIN TUMORS
- SCAN TAKES ABOUT 30 MINUTES
- COSTS MORE THAN A CT SCAN
- CAN'T BE USED IN PTS WITH PACERS, TATTOOS AND METAL IMPLANTS
- FIRST AVAILABLE IN 1981

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MRI



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CROHNS

CHRONIC INFLAMMATION OF THE COLON

SX: ABDOMINAL PAIN
DIARRHEA
WEIGHT LOSS

TX: MEDICATIONS-
AMINOSALICYLATES CORTICOSTEROIDS
ANTIBIOTICS BIOLOGICS
DRUGS THAT SUPPRESS THE IMMUNE SYSTEM
NUTRITION SUPPORT
SURGERY

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Difference	Crohn's	Ulcerative Colitis
Location	May occur anywhere along GI tract	Usually only occurs in large intestine
Inflammation	May occur in patches	Continuous throughout large intestine
Pain	RLQ	LLQ
Appearance	Ulcers in digestive track are deep and may extend into all layers of bowel wall	Ulcers do not extend beyond inner lining
Bleeding	Not common	common

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PYELONEPHRITIS

- BACTERIAL INFECTION OF THE KIDNEYS- MOST COMMONLY ECOLI
- CAN BE ACUTE OF CHRONIC
- MOST OFTEN CAUSED BY THE ASCENT OF BACTERIA FROM THE BLADDER UP THE URETERS AND INFECT THE KIDNEYS
- CONDITIONS THAT CREATE DECREASE URINE FLOW INCREASE CHANCE OF PYELONEPHRITIS SUCH AS – STONES, URETERAL STRICTURES, ABDOMINAL/PELVIS MASSES

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PYELONEPHRITIS

SX:

- URINARY DISCOMFORT-DYSURIA, URGENCY, FREQUENCY
- BACK/FLANK PAIN ON AFFECTED SIDE
- FEVER OR CHILLS
- MALAISE
- NAUSEA/VOMITING
- HEMATURIA
- FOUL SMELLING URINE

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PYELONEPHRITIS

DX:

CLINICAL PICTURE AND PATIENT HISTORY
 URINALYSIS + BACTERIA AND WHITE CELLS
 URINE CULTURES
 BLOOD CULTURES
 KIDNEY US OR CT SCAN

TX:

ANTIBIOTICS X 5-14 DAYS
 (CIPRO, LEVAQUIN, BACTRIM, SEPTA)

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PREVENTION OF UTI/PYELONEPHRITIS

- INCREASE FLUIDS, ESPECIALLY WATER

(CRANBERRIES CONTAIN SUBSTANCES THAT PREVENT
ECOLI FROM STICKING TO THE BLADDER WALLS)
- EMPTY BLADDER FREQUENTLY- DON'T POSTPONE URINATION
- EMPTY BLADDER BEFORE AND AFTER SEX
- PROPER HYGIENE-FRONT TO BACK
- TAKE SHOWERS INSTEAD OF BATHS

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RENAL COLIC

- SX: PAINFUL URINATION
HEMATURIA
SHARP ABDOMINAL OR FLANK PAIN, WHICH MAY RADIATE TO GROIN AREA
NAUSEA AND VOMITING
- DX: CLINICAL PICTURE AND HISTORY
BLOOD AND URINE RESULTS
ULTRASOUND
- TX: DEPENDS ON SIZE AND LOCATION OF STONE
PAIN MEDICATION
HYDRATION
LITHOTRIPSY
SURGICAL INTERVENTION

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OVARIAN CYSTS/OVARIAN TORSION

SX: ABDOMINAL PAIN, NAUSEA, VOMITING

ACUTE ONSET OF PAIN AND COLICKY IN NATURE

DX: CLINICAL PICTURE/HISTORY

ULTRASOUND

TX: LAPAROSCOPY

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ECTOPIC PREGNANCY

SX: NAUSEA, VOMITING, LOWER ABDOMINAL PAIN, SHARP PAIN
ON ONE SIDE, DIZZINESS, WEAKNESS, PAIN IN SHOULDER,
VAGINAL BLEEDING

DX: CLINICAL PICTURE/HISTORY
HCG LEVELS
US

TX: SURGICAL -LAPAROSCOPY
MEDICAL- METHOTREXATE

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JOEY IS A 14 YO WHO COMES INTO THE CLINIC C/O SUDDEN ONSET OF LEFT TESTICULAR PAIN. ON ASSESSMENT, HE DESCRIBES THE PAIN AS A 8 OUT OF 10. HE DENIES ANY URINARY SYMPTOMS, DENIES ANY TRAUMA. HE DOES HAVE SOME LOWER ABDOMINAL PAIN AND FEELS NAUSEATED. WHAT SHOULD YOU DO?

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- a) Allow Joey to rest in the clinic
- b) Send him back to class
- c) Offer him ice to relieve the discomfort
- d) Contact his parent/guardian immediately
- e) Refer him to the emergency room immediately
- f) Give him Tylenol for the pain

- | | |
|------------|------------|
| 1. A, C, F | 3. B, C, F |
| 2. A, D, E | 4. A, C, F |

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TORSION OF THE TESTICLE

- TESTICLE ROTATES-TWISTS THE SPERMATIC CORD →↓
BLOOD FLOW TO TESTICLE →SUDDEN, SEVERE PAIN AND SWELLING
- CAN OCCUR AT ANY AGE, BUT MORE COMMON IN 12-16 YO
- CAUSES: UNKNOWN, INCREASED INCIDENCE IN BOYS WITH BELL CLAPPER DEFORMITY (USUALLY A BILATERAL DEFORMITY)

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TORSION OF THE TESTICLE

RISK FACTORS:

PREVIOUS TESTICULAR TORSION
FAMILY HISTORY OF TESTICULAR TORSION

SYMPTOMS:

SUDDEN, SEVERE PAIN IN SCROTUM
SWELLING OF SCROTUM
ABDOMINAL PAIN
NAUSEA/VOMITING
TESTICLE THAT IS ↑ OR AT AN UNUSUAL ANGLE

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TORSION OF THE TESTICLE

DX: CLINICAL PICTURE/EXAM AND HISTORY

URINALYSIS

SCROTAL US

TX: **EMERGENCY** SURGERY

COMPLICATIONS: DAMAGE OR DEATH TO TESTICLE

MALE INFERTILITY

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TORSION OF THE TESTICLE

**RECOGNITION AND IMMEDIATE SURGERY
IS ESSENTIAL!**

SUCCESS RATE:

95% IF SURGERY IS WITHIN 6 HOURS

20% AFTER 24 HOURS

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TORSION OF THE TESTICLE

Remember: TWIST Is an Emergency!

- T** Testicular pain that is sudden.
- W** Warning signs to act fast are pain, swelling, and/or redness in the scrotum.
- I** Immediately tell a parent, school nurse, or other adult.
- S** See a doctor right away.
- T** Time is limited.

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TESTICULAR TORSION

Intervaginal torsion: longitudinal rotation of the spermatic cord due to "bell-clapper deformity". This results in the absence of testicular blood flow and is a surgical emergency.

Normal **Bell-clapper** **Torsion**

Bell-clapper deformity: Capacious scrotal sac. Often bilateral.

PRESENTATION

- Pain**
 - Sudden onset
 - Deep / visceral
 - Unilateral
 - Testicular / scrotal
 - May radiate to inguinal or lower abdominal areas
 - Potential prior Hx of intermittent pain
- Nausea**
 - May have associated trauma
 - Peak incidence: 12-16 y/o, unlikely before puberty
 - May be awakened from sleep due to pain

PHYSICAL EXAM

- Scrotum**
 - Early presentation: may be normal
 - Late: edematous, indurated, erythematous
- Affected testis**
 - Tender
 - High riding
 - Horizontal lie
 - Cremasteric reflex absent

DIAGNOSIS

Primarily a clinical diagnosis. History and PE often sufficient to bring straight into OR.
 U/A generally not indicated and not needed for diagnosis

Colour Doppler Ultrasound

If Dx is in question, US to determine presence or absence of blood flow:

- Decreased testicular perfusion
- Twisting of spermatic cord

Usefulness limited in small prepubertal testes with baseline flow
 DO NOT delay surgical management for imaging studies if clinical findings are strongly suggestive.

TWIST Score

Symptom	Points
Testicular swelling	2
Hard testicle	2
Absent cremasteric reflex	1
Nausea/vomiting	1
High riding testis	1

≤3 Points: low risk
 3-4 Points: medium risk
 ≥5 Points: HIGH risk

De-torsion

Time within	Testis viability
4-6 hours	97-100%
>12 hours	20-61%
>24 hours	0-14%

GOAL: early surgical consultation with surgeon and in operating room within 6 hours from onset of symptoms

NEVER delay surgery on assumption of nonviability based on clinically estimated duration of torsion

SURGICAL EXPLORATION

Is the twisted testicle viable?

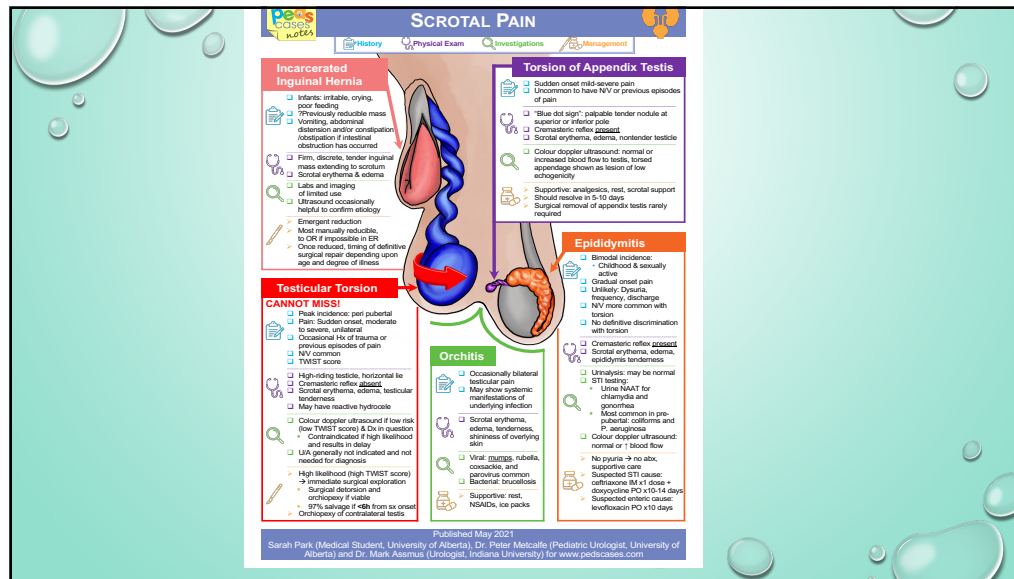
- YES** → Surgical detorsion and orchiopexy (fixation)
- NO** → Orchiectomy (removal)

Contralateral testicle exploration and orchiopexy (bell-clapper often bilateral)

- Average recovery time: 1-2 weeks
- One functional testicle is sufficient for normal fertility

Published May 2021
 Sarah Park (Medical Student, University of Alberta), Dr. Peter Melcotte (Pediatric Urologist, University of Alberta) and Dr. Mark Asmus (Urologist, Indiana University) for www.pedcases.com

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EPIDIDYMITIS

INFLAMMATION OF EPIDIDYMITIS

SX: PAINFUL SWELLING OF THE EPIDIDYMITIS AND THE ASSOCIATED TESTICLE
FEVER, CHILLS
GROIN PAIN
URINARY SYMPTOMS

DX: CLINICAL PICTURE/HISTORY
US
CBC, URINALYSIS AND URINE CULTURE

TX: ANTIBIOTICS
PAIN MEDICATION

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PID –PELVIC INFLAMMATORY DISEASE

INFECTION OF THE FALLOPIAN TUBES, UTERUS OR OVARIES

SX: PAIN AND TENDERNESS IN LOWER ABDOMEN
 FOUL SMELLING OR ABNORMAL COLORED DISCHARGE
 PAIN DURING INTERCOURSE
 SPOTTING BETWEEN PERIODS
 CHILLS/FEVER
 NAUSEA, VOMITING, DIARRHEA
 ANOREXIA
 BACK PAIN
 PAINFUL OR FREQUENT URINATION

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PID

DX: CLINICAL PICTURE/HISTORY
 PELVIC EXAM
 CULTURES
 US MAYBE A CT SCAN

TX: ANTIBIOTICS
 MAY NEED SURGERY I & D FOR ABSCESSSES

COMPLICATIONS: TUBO-OVARIAN ABSCESS
 INFERTILITY
 ECTOPIC PREGNANCY

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TAKEAWAYS

- BEST TO SEND OUT FOR FURTHER EVAL IF YOU HAVE **ANY** CONCERNS
- ? STANDARD EMAIL HOME FOR EVAL OF ABDOMINAL PAIN
- DOCUMENT WHAT YOU DO AND TELL FAMILIES IN THE STUDENT MEDICAL RECORD
- [RED FLAGS](#)

CONDITIONS THAT WARRANT AN EMERGENT EVALUATION:

ACUTE ABDOMEN
 RED FLAGS LISTED ABOVE
 SUSPECTED OVARIAN TORSION
 SUSPECTED TESTICULAR TORSION

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QUESTIONS



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