Pyloric Stenosis

Surgical Pathway

0032 pathway 03/2009

Children's Hospital Central California

DIAGNOSIS: Pyloric Stenosis **WT:** kg **HT:** cm

☐ **Open Pyloromyotomy**

☐ **Laparoscopic Pyloromyotomy**

ALLERGIES: **Message Phone Number:**

Patients to include on pathway: 1. Patients with a diagnosis of probable Pyloric Stenosis

Patients to exclude from pathway:

Remove the patient from the pathway if the following occurs:
1. Transfer to a higher level of care
2. Change in diagnosis

PHASE OF CARE:	**Phase I:** Emergency Room / Admission / Preoperative	**Phase II:** Postoperative/Discharge
INTERVENTION CATEGORIES	**START DATE/TIME: BY:**	**START DATE/TIME: BY:**
ADMIT TO:	**Acute Care Unit**	
ASSESSMENT & MONITORING:	- Routine VS, pain assessment ---> - Accurate I&O every shift ---> - Assess patient for FTT, developmental delay - Assess family for cultural or religious diversity, knowledge deficits, and language barriers ---> - Assess if infant was delivered at home. Did they get vitamin K prophylaxis?	---> ---> - If no urine output in 4 hours, <u>without</u> bladder distention, give IV bolus of NS 20ml/kg x 1; if no void within next 2 hours, notify physician ---> ☐ Centralized monitoring ☐ Bedside monitoring - If monitored, HR limits: High ______ Low: ______ Apnea: > 20 sec
ACTIVITY / ENVIRONMENTAL:	- May be held --->	--->
CONSULTS:	- Surgical consult: progressive vomiting, r/o pyloric stenosis	
DIAGNOSTICS:	☐ Abdominal ultrasound, as indicated per surgeon to confirm diagnosis	
OPERATIVE / INVASIVE PROCEDURES:	- Surgery consent for "Pyloromyotomy"; to be obtained after the surgeon/surgical resident has talked to the family	
LABORATORY:	- CBC, if not done prior to surgery consult - Basic Metabolic Panel (BMP), if not done prior to surgery consult - If initial Cl < 90, repeat BMP in 12 hrs; if surgery is scheduled prior to 12 hrs, obtain STAT BMP at least 1 hour before surgery	
NUTRITION / I.V. THERAPY:	- NPO - Normal saline 20 ml/kg IV over 1 hour *(unless IV bolus previously given, or IV fluids already infusing),* then: - Check **Chloride** level from BMP panel and select IVF as follows: - If Chloride is <u>above</u> 90 mEq/L, give D5½ NS with **20 mEq/L KCl** - If Chloride is 80-90 mEq/L, give D5½ NS with **30 mEq/L KCl** - If Chloride is <u>below</u> 80 mEq/L, give D5½ NS with **40 mEq/L KCl** - IVF to run at 1.5 x maintenance rate for weight _______ ml/hr	- IVF: D5½ NS with 20mEq/L KCl at 1.5 x maintenance rate for weight ___________ml/hr - PIV site care & armboard change every T-TH-SA - IV bag/tubing change every 96 hours *(Nights)* - Saline lock IV if PO intake adequate - Begin post-op PO feeding as soon as the infant is alert - If pt. is breast fed, advance feeds ad lib - If pt. is formula fed, for first feed give 30-45 ml of Pedialyte; wait 2 hours, then advance to formula feeds ad lib **- <u>Note:</u>** Small, frequent feeds, with lots of pausing and frequent burping, decreases post-op spit ups/emesis. Some post-op vomiting is expected and should not delay advancement of feeds or the pt's. recovery.
MEDICATIONS:		**- Acetaminophen 15 mg/kg** PO/PR every 4 hours, PRN mild to moderate pain or temperature > 101.5ºF ☐ **Morphine 0.05 mg/kg** IV **times 1 dose only** PRN moderate to severe pain, notify physician if pain persists
THERAPIES:		- Remove surgical dressing prior to discharge *(if present)*

Children's Hospital Central California

DIAGNOSIS: Pyloric Stenosis		WT: kg HT: cm
PHASE OF CARE:	**Phase I:** Emergency Room / Admission / Preoperative	**Phase II:** Postoperative/Discharge
PATIENT / FAMILY TEACHING:	- Explain diagnostic studies - Provide parents with copy of Pyloric Stenosis Teaching Handout - Initiate "Teaching Plan for Surgical Patient"	- Continue "Teaching Plan for Surgical Patient" - Explain discharge criteria
EXPECTED OUTCOMES:	- Implement Phase II orders when patient demonstrates the following: 1. Arrival in PACU following surgery	- Notify physician when patient demonstrates all of the following criteria for discharge: 1. Temp < 100ºF 2. Tolerating ad lib feeds times 3 3. Pain controlled on oral analgesics 4. Parent or caregiver verbalizes understanding of patient's nutritional needs
SUPPLEMENTAL ORDERS	Signature: ______________________ Date/Time: ________	Signature: ______________________ Date/Time: ________

HUC: Initiated order for clinical pathway in meditech Date: ___/___/___ Time: __________ Signature: ______________________________

PHYSICIAN'S SIGNATURE: Date: ___/___/___ Time: __________ Signature: ______________________________MD

Phase I Orders Initiated on: Date: ___/___/___ Time: __________ Signature:______________________________

Phase II Orders Initiated on: Date: ___/___/___ Time: __________ Signature:______________________________

Reviewed Days: ___/___/___ Time: ________ Signature: ____________________ **Reviewed Nights:** ___/___/___ Time: ________ Signature: ____________________

Reviewed Days: ___/___/___ Time: ________ Signature: ____________________ **Reviewed Nights:** ___/___/___ Time: ________ Signature: ____________________

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Children's Hospital Central California

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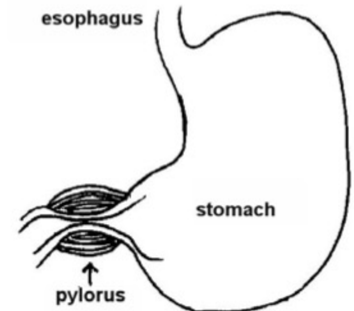
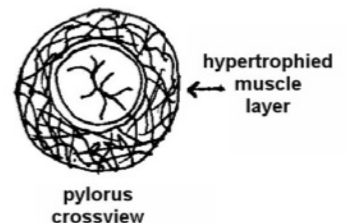


What is pyloric stenosis?

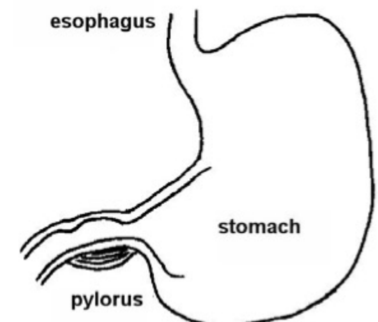
It is when the opening from the lower part of the stomach is too narrow for food to pass through to the small intestine. This happens because the muscle between the lower part of the stomach and the small intestine is too thick. Many infants will vomit forcefully. This is called "projectile" vomiting and it usually happens at the end of a feeding. The baby will continue to want to eat because the stomach is empty and they are still hungry. There is nothing you can do to prevent pyloric stenosis. It is more likely to occur with your first baby and it is more common in boys. Pyloric stenosis runs in families. If a brother or sister had pyloric stenosis, the new baby has a higher chance of having it as well. Also, a person who had pyloric stenosis as a newborn has a greater chance of having babies with this problem.



How will I know if my child has pyloric stenosis?

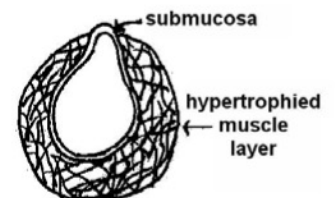
First you will be asked about your baby and how he/she is doing with their feedings. Your doctor will examine your baby and try to feel a lump in your baby's abdomen. Your doctor is checking for the thickened muscle. A special test called an ultrasound may be done to look for the thickened muscle and narrow opening between the stomach and the small intestine.

How is pyloric stenosis treated?



Surgery is needed to fix pyloric stenosis. There is no medication that successfully treats this problem. Before surgery, your baby will:

- Need a blood test
- Usually not be allowed to have anything to drink before surgery.
- Be checked for dehydration (not enough liquid in the body). This happens because of the vomiting.
- Have an intravenous (IV) line placed in his/her vein to fix any dehydration.
- Go to surgery, after the dehydration is fixed.



The surgery is called a **pyloromyotomy**. A small incision (opening) is made in the abdomen in or around the belly button or in the right upper abdomen. The thickened muscle is found and the surgeon opens the passage way from the stomach to the small intestine. This surgery may also be done laparoscopically. If this is done, three small incisions (openings) are made in different places on the abdomen. This allows the

surgeon to place a small camera through one incision and instruments through the other two incisions. The surgeon will explain the type of surgery needed for your baby.

What happens after surgery?

After surgery, your baby will:

- Receive IV fluids until he/she is feeding well
- Be given pain medication as needed
- Have a small piece of paper tape called a steri-strip over the incision. It is not unusual for there to be a small amount of drainage from the incision right after surgery. So, the incision may also be covered with a dry, sterile dressing that is removed after 24 hours.
- Be held to comfort and for feeding
- Begin feeding soon after surgery. If your baby is breast fed, you can begin breast feeding at that time. The feedings will start slowly with small amounts. If your baby is formula fed, the first feeding will be a small amount of Pedialyte. If he/she does okay, after 2 hours you can feed your baby formula. It is important to burp your baby frequently during these feedings.
- Many babies will still vomit early on after surgery. This is nothing to be concerned about and it does not mean that the baby has pyloric stenosis again. If this happens make sure your baby eats slowly and burps well. Many babies will try to "over eat" for a week or so after surgery, then they will return to normal feeding.

When can my baby leave the hospital?

Your baby's stay in the hospital will depend on how well he/she is doing after surgery. Most babies will go home 24-48 hours after surgery.

What happens after my baby leaves the hospital?

You will be given discharge instructions about any special care that is needed at home, including:

Feeding

- Continue to offer feedings slowly (1-2 ounces at a time), stopping often to burp your baby.

Pain

- If your baby seems uncomfortable, acetaminophen (Tylenol) or ibuprofen (Pediaprofen) may be given every 4 hours, as needed.

Bathing

- Give your baby sponge baths for 2-3 days after surgery. Pat the incision dry after bathing.

Care of the Surgical Incisions

- The incisions should be left uncovered and open to air. The steri-strips will begin to peel back at the edges. Do not take them off. Let them fall off on their own.
- Watch for signs of infection. This may include redness or drainage at surgery sites and/or a fever greater than 101.5 degrees Fahrenheit rectally.

Follow-Up

- An appointment will be scheduled for your baby to see the surgeon in the Pediatric Surgery Clinic at Children's Hospital 10-14 days after surgery.
- You may receive a call from the Surgery Clinic about 1 week after discharge to check on how your child is doing and if everything is OK. You may not have to come to the clinic for a follow-up appointment.

When to Call the Surgeon? Call the surgeon if you have any questions or concerns about how your baby is doing after leaving the hospital, or if your baby child has:

- Fever, with temperature greater than 101.5 degrees Fahrenheit rectally
- An increase in redness, swelling or soreness at the surgery sites
- Any discharge or drainage from the surgery sites
- Pain not relieved by acetaminophen (Tylenol)/ibuprofen (Pediaprofen)
- Continued vomiting (more than 3 times) with feedings

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