MEET THE *Team*

We understand that no surgery is simple. That is why patients need surgeons who are pediatric-trained and experienced in treating a wide range of conditions. Our team of pediatric general surgeons includes:

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A newsletter from Children's Physician Group—Pediatric Surgery

Surgery Update is a newsletter from Children's Physician Group—Pediatric Surgery intended to keep you informed regarding the latest in pediatric general surgery.

In this issue

Call **404-785-6895** (Scottish Rite) or **404-785-8787** (Egleston) to make a referral or to discuss potential surgical treatments for your patients.

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SURGERY *Update*

A newsletter from Children's Physician Group—Pediatric Surgery

FALL 2016

In this issue

Children's™ Healthcare of Atlanta
Children's Physician Group

Congenital neonatal intestinal obstruction

Jonathan Meisel, M.D.

Introduction and overview

Neonatal bowel obstruction is the most common surgical emergency during the newborn period, occuring in approximately 1 in 2,000 births. Bilious vomiting, abdominal distention and failure to pass meconium on the first day of life are all common symptoms, but many times there are more subtle history and physical exam findings that can clue us in to the type of obstruction. In general, outcomes are excellent, but a high index of suspicion is required to promptly diagnose a surgical emergency and prevent devastating complications. The following will highlight different causes of congenital neonatal intestinal obstruction, as well as describe the evaluation, diagnosis, and treatment.

Malrotation with midgut volvulus

Malrotation describes a spectrum of anatomic abnormalities of incomplete rotation and fixation of the intestine during fetal development. These disorders most commonly present as a midgut volvulus in infancy and childhood, with the potential for ischemic infarction of the intestine supplied by the superior mesenteric artery (duodenum to the mid-transverse colon). This can lead to death or severe complications, such as short bowel syndrome, a need for long-term parenteral nutrition and liver failure.

The incidence of malrotation leading to clinical disease is 1 in 6,000 births. The most common presentation of malrotation with midgut volvulus is the acute onset of bilious emesis during the neonatal period. A plain abdominal X-ray may show a distended stomach and proximal duodenum with a paucity of distal bowel gas. In a stable patient, the definitive diagnosis is made with an upper GI contrast study. Once confirmed, treatment is emergency surgery to detorse the intestine, then a Ladd procedure to help reduce the risk of recurrence.

Esophageal Atresia

The most proximal obstruction of the GI tract is esophageal atresia (EA), which occurs in about 1 in 2,500 births. Infants with EA have excess salivation, which requires repeated suctioning and prompts an attempt to pass a suction catheter through the mouth into the stomach. In an infant with EA, the catheter will not pass beyond 9 or 10 cm, and a chest X-ray will show the tip at the level of the superior mediastinum.

An EA diagnosis should trigger a workup for other anomalies, particularly in the vertebral defects, anal atresia, cardiac defects, tracheoesophageal fistula, renal anomalies, and limb abnormalities (VACTERL) association. Such malformations are present in about 50 percent of cases of EA/distal tracheoesophageal fistula (TEF).

If bowel gas is present on plain film, it confirms the presence of a TEF, which occurs in about 87 percent of infants born with EA. Treatment is ligation of the fistula and primary repair of the esophagus, when possible. At our institution, this is often accomplished using a thoracoscopic technique, though many techniques are used.

Duodenal atresia

Duodenal atresia (DA) occurs in 1 in 6,000 births and is thought to be caused by a failure of the duodenum to recanalize during fetal development. Nearly half of infants with DA will have some other anomaly and approximately one-third will have trisomy 21. DA can sometimes be classified into a stenosis, or incomplete obstruction. Depending on the exact site of obstruction, an infant may present with either bilious or nonbilious emesis. Polyhydramnios is often identifiable on fetal ultrasound. An upright abdominal X-ray is usually sufficient to confirm the diagnosis, showing the classic "double-bubble."

Treatment is typically to bypass the obstruction with a duodenoduodenostomy. This can be performed laparoscopically or via a right upper-quadrant incision.

Small bowel atresia

Jejunoileal atresias occur in approximately 1 in 3,000 births and are thought to be the result of an in-utero vascular accident. Polyhydramnios, bilious emesis and abdominal distention are the most common findings on exam. Abdominal X-ray will show varying amounts of dilated loops of bowel, depending upon how proximal or distal the obstruction is. A contrast enema is quite useful to determine the location of the atresia. The vast majority of infants will have a microcolon, because little meconium has passed the area of obstruction, so the unused colon will not be distended. If the accident leading to the atresia occurs extremely late in gestation, the colon may appear normal.

Treatment is abdominal exploration. Resection of the atretic segment and primary anastomosis is performed when possible, but certain circumstances may call for ostomies, with planned reconnection when the child is older.

Imperforate anus

Imperforate anus (IA) occurs in approximately 1 in 4,000 births and is the most distal form of obstruction in the GI tract. The physical exam findings and complexity of the disease are quite variable, and are different between males and females. In males, the most common defect is IA with a rectourethral fistula; in females, it is IA with a rectovestibular fistula.

Since anorectal malformations can be a part of the VACTERL association, the initial workup must include plain abdominal X-rays, echocardiogram, renal ultrasound and a spinal ultrasound.

If the location of the fistula is known (i.e. meconium is seen on the neonate's perineum), a primary repair can be performed in the newborn period. If the location is unknown or the infant has comorbidities, a descending colostomy should be performed. An anorectoplasty can be done once the fistula has been identified and the reconstruction carefully planned.

Hirschsprung's disease

Unlike the others causes of neonatal obstruction, Hirschsprung's disease (HD) is not a mechanical obstruction, but a functional one. It is characterized by the absence of ganglion cells in the myenteric and submucosal plexuses of the distal intestine. Patients with HD present with functional intestinal obstruction at the level of aganglionosis. The incidence is approximately 1 in 5,000 births.

News and announcements

Samiksha Bansal, M.D., joins Children's Physician Group

Samiksha Bansal, M.D., joined Children's Physician Group—Pediatric Surgery at Scottish Rite and will see patients at our Alpharetta location, as well. She comes to Children's from St. Louis, Missouri, where she completed a Pediatric Surgery Trauma Fellowship, followed by a Pediatric Surgery Fellowship at Cardinal Glennon Children's Hospital.

Dr. Bansal went to medical school and completed a residency at Jawarharlal Nehru Medical College in Aligarh, India. Board-certified in general surgery, she has focused on research and pediatric surgery, doing fellowships in both. She is particularly interested in traumatic injuries and laparoscopic procedures. Prior to St. Louis, she worked and studied at Rocky Mountain Hospital for Children in Denver, Colorado, and SUNY Upstate Medical University in Syracuse, New York.

When not working, she enjoys hiking, swimming, kayaking and horseback riding. She also plays guitar and banjo.

Children's New Vascular Anomalies Clinic

For children with vascular anomalies, the number of facilities capable of providing comprehensive treatment is limited. Vascular anomalies occur when arteries, veins, capillaries or lymph vessels do not develop properly. Many vascular anomalies are congenital, but others may develop later in a child's life. These anomalies fall into two main categories: vascular tumors, such as infantile and congenital hemangiomas, and vascular malformations, such as venous, lymphatic, capillary and arteriovenous malformations.

Our Vascular Anomalies Clinic includes providers and consultative services from 16 different pediatric specialties, including hematology, interventional radiology, otolaryngology, pathology, pediatric surgery, plastic surgery and radiology. Our clinic is the only one of its kind in the Southeast and one of just a handful of centers in the country to offer this type of coordinated care.

If you have a patient whom you believe might benefit from evaluation by our team, please call 404-785-KIDS (5437) for an appointment or contact Rachel Swerdlin, R.N., C.P.N.P., Vascular Anomalies Clinic Coordinator, at vac@choa.org for more information. Or visit choa.org/vac.

Contact us

Children's Physician Group—Pediatric Surgery provides comprehensive general and thoracic pediatric surgical care for children and adolescents throughout Georgia and the Southeast. Our offices are located at:

Main offices

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Drs. Bhatia, Clifton, Durham, Heiss, Meisel, Parker, Raval, Santore and Wulkan

Children's Medical Office Building
5455 Meridian Mark Road, Suite 570
Atlanta, GA 30342
P: 404-785-6895, F: 404-785-6896
Drs. Bansal, Bleacher, Bussey, Glasson, Norelius and Raschbaum

Outpatient clinics

Children's at Cobb (Marietta)
P: 404-785-8787, F: 404-785-8788
Dr. Meisel

Children's at East Cobb (Marietta)
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Dr. Bleacher

Children's at Fayette (Fayetteville)
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Dr. Bhatia

Children's at Forsyth (Cumming)
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Drs. Bleacher, Norelius and Raschbaum

Children's at Old Milton (Alpharetta)
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Drs. Bansal and Bussey

Children's at Satellite Boulevard (Duluth)
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Drs. Bhatia, Heiss, Meisel and Santore
P: 404-785-6895, F: 404-785-6896
Dr. Glasson

Athens Clinic (Athens)
P: 404-785-8787, F: 404-785-8788
Dr. Clifton

Columbus Clinic (Columbus)
P: 404-785-8787, F: 404-785-8788
Drs. Heiss and Wulkan

Surgical locations

We perform surgeries at Egleston hospital, Scottish Rite hospital, Children's at Meridian Mark Outpatient Surgery Center and Children's at Satellite Boulevard Outpatient Surgery Center.