



PEDIATRIC SURGERY Update 8

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Tracheobronchial Remnants

Tracheobronchial remnants (TBR) are a rare but consistent cause of congenital esophageal stenosis in newborns and infants. The stenosis occurs in the lower esophagus (distal third). TBR anomalies including the cartilaginous rest sometimes present are viewed as different manifestations of a spectrum of abnormal embryonic separation of the foregut from the respiratory tract occurring during the 25th day of gestation. Histologically, the TBR includes cartilage, early columnar metaplasia, disorganized/hyperplastic muscular layer and ectopic glandular tissue. The most common association in children with TBR is the presence of concomitant esophageal atresia a/o tracheoesophageal fistula. The differential diagnosis includes peptic acid esophageal stricture due to gastroesophageal reflux. Symptoms start in early infancy includes progressive dysphagia and vomiting of solid food, food impaction, stridor, repeated respiratory infection, and failure to thrive. Esophagogram shows a narrow stricture in the lower esophagus with proximal dilatation. The mucosa is normal during endoscopy with biopsy. Esophageal dilatation is not very effective and carries a high risk of perforation and leakage. Surgical resection of the stenotic segment with end-to-end anastomosis is the treatment of choice. Resection can be performed through either laparotomy or thoracotomy depending on the location of the lesion. An antireflux operation concomitant with the resection of the remnant will help prevent gastroesophageal reflux in children with a narrowing near the esophagogastric junction.

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Ovarian Masses

Ovarian masses can pose a problem in diagnosis and management in children. Almost 10% of such ovarian masses are malignant. The rate of removing normal ovarian tissue

in lieu of discovering a malignancy is still reported to be very high. Also the role of laparoscopy as a diagnostic/therapeutic tool in such cases is questioned. Symptoms, age at presentation, ultrasound, CT and MRI imaging characteristics, mass size and genetic markers results comprise the significant factors to study used to help classify whether an ovarian mass is benign or malignant. The greatest percent in malignancy is found in girls aged one to eight years with a 3-fold increase in odds. Likewise is extremely rare to find a malignant tumor in infants less than one year of age. In terms of symptoms complaint of abdominal mass (torsion and abdominal pain) or precocious puberty increases the risk of malignancy. Positive HCG, alpha fetoprotein and CA-125 are potential markers of malignancy. Negative tumor markers do not exclude the possibility of malignancy. Imaging characteristics of solid or heterogenous consistency and size larger than 8 cm increase the risk of malignancy, while US evidence of normal ovarian tissue adjacent to the mass can assist to exclude malignancy. During surgery biopsy with frozen section can help establish a diagnosis, but it has the risk of upstaging a potential tumor. Laparoscopy can help stratify the mass into benign or malignant looking further deciding whether an open or closed approach is warranted.

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Oophoropexy

Pexing one or both ovaries is indicated in the setting of ovarian torsion and to protect the ovaries from further damage by adjuvant radiotherapy to nearby malignancies. In the early 80's oophoropexy was utilized in Hodgkin's disease after extensive radiotherapy. With the advent of favoring chemotherapy instead of total nodal radiation the need for oophoropexy decreased significantly. The other indication for lateral oophoropexy is when the child is to receive craniospinal irradiation for a radiosensitive central nervous system tumor. Laparoscopic oophoropexy may protect against radiation-induced ovarian failure. Still, another indication for oophoropexy is in the setting of ovarian torsion with possible or imminent loss of ovarian tissue. The

consensus is that contralateral laparoscopic oophoropexy at the time of ipsilateral oophorectomy for torsion is recommended to avoid castration. Medial oophoropexy to avoid tubo-ovarian disturbance is recommended in such situation.

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