International Society of Gastrointestinal Oncology
2013 Gastrointestinal Oncology Conference
October 17–19, 2013

PEDIATRIC GASTROINTESTINAL TUMORS AND THEIR RADIOLOGIC APPEARANCE.

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Introduction: GI tumors in pediatric age group are rare. We reviewed all the cases of primary gastrointestinal tumors presented at Childrens Hospital of New Orleans over last 16 years (n=40). The aim of study is to highlight characteristic CT findings in various GI tumors. We will also discuss difference in cancer incidence and histologic types between adult and pediatric GI tumors.

Pancreatic Tumors: As per SEER data incidence of pancreatic cancer is 13.9 and 10.9 per 100,000 population in males and females respectively with 5 year survival around 6%. On the contrary pancreatic tumors are very rare in pediatrics. national cancer institute data suggests 0.46 cases per million population in patient population less that 30 years[1]. Review of 33 years of pancreatic cancer data in patient group younger than 21 at memorial sloan kettering confirmed rarity of pancreatic tumor in pediatrics and and a better survival [2]. Pancreatoblastoma, SPEN (solid and papillary epithelial neoplasms), neuroendocrine tumors, ductal adenocarcinoma and acinar cell carcinoma are some of the common pancreatic tumors in pediatric population [3]. CT scan has 90 sensitivity and 95% specificity in diagnosing pancreatic carcinoma. Some of the characteristic imaging findings are presence of diffuse enlargement of the pancreas or focal low density mass, usually noncalcified, mostly at neck-body junction and last but not the least presence of dilated pancreatic duct.

GIST (Gastrointestinal stromal tumors): Although commonest mesenchymal malignancy of GI tract in adults, only 1.4 - 2.7 % constitute pediatric population [4,5]. We have encountered only one case in last 16 years. Incidence peaks around 6th and 7th decade but in pediatrics it is usually a girl in her second decade [4]. Stomach followed by large and small bowel are the common site of presentation. Tumor is well demarcated and usually protrudes intraluminally with mucosal ulceration. Tumor seems to originate from muscularis propria [6,7].

Hepatic Cancers: Every year around 150 cases of hepatic tumors are reported from united states [8], which is in stark contrast with massive adult numbers. American Cancer Society estimates around 30,000 new adult hepatic cancer for the year 2013. Pediatric liver tumors are mostly represented by hepatoblastoma followed by hepatocellular carcinoma. Sarcomas, germ cell tumors and vascular tumors form minority of cases [8]. 15 of our patients were diagnosed with primary malignant neoplasm of liver, by far the single largest subset in GI cancers. Hepatoblastomas and hepatocellular carcinoma are characterized by hypoattenuation as compared to normal liver tissue on CT scan. Hepatoblastoma in 50% cases can show calcification but it can be difficult to differentiate the above mentioned two tumors on imaging [9]. Lin et al described epithelioid hemangioendothelioma as " solitary or diffuse nodular lesions with a predilection for peripheral subcapsular growth and nodular confluence, together with the "halo" and "capsular retraction" signs." [10]

Lymphoma: A common pediatric malignancy, can affect any part of GI tract [11], usually affects distal small intestine unlike adults where stomach is most commonly affected site. lymphoma has variable appearance on CT scan. CT findings are usually classified as nodular, constrictive, ulcerative or aneurysmal. There can be bowel wall thickening, presence of polypoidal mass or abdominal lymphadenopathy.

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