Gastric Schwannoma presenting as right upper quadrant pain

Katherine Kendrick[1], Jesse Clanton[2], Kristen Adams[3], Veeral M Oza[1]

[1]Prisma Health Upstate-Greenville Memorial Hospital, Department of Gastroenterology and Hepatology, (890 W. Faris Rd., Suite 580, Greenville, SC 29605/ Prisma Health Gastroenterology and Liver Center)

[2]Prisma Health-Midlands, Department of Surgery, 2 Medical Park Rd., Columbia, SC 29203

[3]Prisma Health Upstate-Greenville Memorial Hospital, Department of Pathology

Abstract

Gastric schwannomas are very rare tumors of the gastrointestinal tract. They are typically benign. In this poster, we present an elderly female presenting with abdominal pain, nausea, vomiting and anorexia. Upon further evaluation, was found to have a gastric mass consistent with gastric schwannoma.

Case Presentation

An 82-year-old woman with a past medical history of CHF, HTN, CKD, dementia, and atrial fibrillation presented for complaint of right upper quadrant pain that radiated to the epigastric area. The pain was associated with nausea, vomiting, anorexia and regurgitation. Physical examination was unremarkable. A contrast enhanced CT scan found a 6.21cm x 4.98 cm gastric mass. (Figure 1). Blood tests did not reveal anemia. Computed Tomography scan of the chest did not reveal intrathoracic metastatic disease

An upper endoscopy revealed a tortuous esophagus, hiatal hernia, and an area of extrinsic compression in the gastric antrum. An endoscopic ultrasound (EUS) examination was then performed, and on EUS, a large perigastric mass in the distal stomach was noted. The lesion appeared hypoechoic and measured 4.6 x 4.9cm with minimal amount of vascularity under doppler. (Figure 2) Biopsies were taken via transgastric passes. Initial onsite pathology revealed spindle cells. Final pathology revealed spindle cell neoplasm with myxoid stroma, most consistent with schwannoma. The spindle cell population was diffusely positive for S100 and negative for CD34, CD117, DOG1, and SMA. The immunohistochemical profile was consistent with schwannoma.

Patient then underwent a surgical resection of the gastric mass. An exploratory laparotomy, distal gastrectomy, and Billroth II gastrojejuostomy were performed. Surgical pathology again confirmed a gastric schwannoma. (Figure 3).

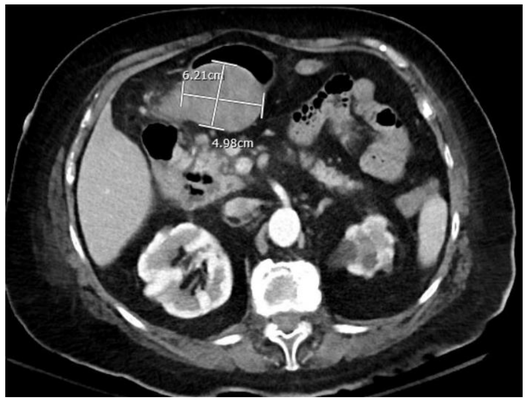

Figure 1. CT revealing a 6.21 cm x 4.98 cm gastric mass

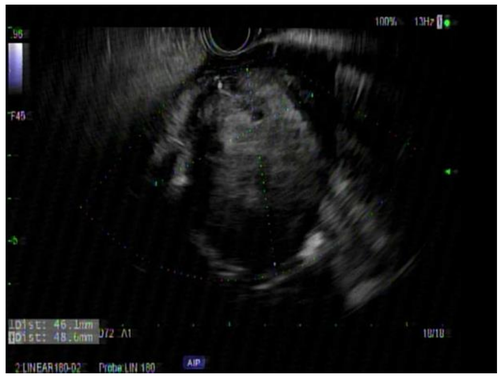

Figure 2. EUS image of gastric mass

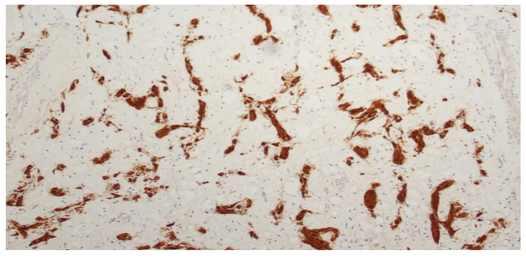

Figure 3. Immunohistochemical Stain positivity 10x

Discussion

Schwannomas are rare spindle cell mesenchymal tumors originating from the Schwann cell sheath.[1,2,3] They tend to be encapsulated and slow growing tumors.[4] Gastric schwannomas arise from the gastrointestinal neural plexus.[1,2] Gastric schwannomas are typically benign and incidentally found. Very rarely they have malignant transformation.[2,3] Gastric schwannomas account for 0.2% of all gastric tumors. [2,4,5,6,7] The tumors are predominantly found in female patients 40 to 60 years old.[2,8,9] Some reports note ages of >70 years old.[1,7,10] This is consistent with our case. When found, most gastrointestinal schwannomas are in the stomach,[2,11] with the highest incidence reported in the gastric body.[3,8] Other locations include the esophagus, rectum, and colon. [2,3,12,13]

Patients are typically asymptomatic, but they can cause abdominal pain and gastrointestinal bleeding. [2,3,4,14,15,16] Gastroduodenal intussusceptions have also been reported.[16]

Gastric schwannomas can be initially detected by various imaging modalities, such as endoscopy, transabdominal ultrasound, upper gastrointestinal barium study, CT, MRI, and EUS. CT, endoscopy and EUS are used often. On CT the tumors are reported as submucosal, well defined with homogenous enhancement. [4] On endoscopy, the tumors are noted as elevated submucosal lesions.[10] On EUS, tumors are reported as hypoechoic lesions.[17]

When these tumors are found, diagnosis is made by histopathological analysis.[2,9] It is important to distinguish these tumors from the two other types of mesenchymal tumors; gastrointestinal stromal tumors and smooth muscle tumors. A spindle cell pattern with vague nuclear palisading and peritumoral lymphoid cuff without encapsulation is typically found on histology.[4,8,18,19] Immunohistochemistry is also helpful as schwannomas are positive for S100 protein, a calcium-binding protein found within cell lines of neural create origin[3]and vimentin. [2,20]

They are negative for CD34 and CD117, which differentiates them from gastrointestinal stromal tumors[2,20] and autonomic nerve tumors. [2, 21] Schwannomas are negative for smooth muscle actin, which differentiates them from leiomyomas. [2,22]

Treatment is typically with surgical resection[2,3,4] with recurrence rarely described.[2,6] The type of surgical approach is dependent on tumor size and location. Due to the excellent outcomes, endoscopic surgery is safe.[2,3,23] Endoscopic techniques include submucosal dissection, full thickness resection, mucosal resection or submucosal excavation.[24] Because these rarely metastasize, lymph node dissection, radiotherapy, and chemotherapy are not required.[2,14] If a schwannoma does metastasize, they typically metastasize to the liver.[2,25] Chemotherapy and radiotherapy are not beneficial[25] and surgery is still considered the definitive treatment.[2]

Conclusions

In summary, gastric schwannomas are rare tumors that can present without symptoms or with a variety of nonspecific complaints. Our patient did well and was seen in follow up post discharge with resolution of all prior symptoms. This case report illustrates the importance of the consideration of schwannomas in the differential diagnosis of perigastric mass lesions.

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