

Gastric Schwannoma: A Case Report and Review

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ABSTRACT

Gastrointestinal schwannomas are rare and have a distinct morphologic feature as compared to schwannomas of soft tissue or central nervous system. The present case highlights a case diagnosed on clinical and radiological correlation to be Gastric GIST, who underwent laparoscopic gastric wedge resection, and histopathology revealed gastric schwannoma.

Keywords: Gastric schwannoma, gastric mesenchymal tumour, Stomach schwannoma

INTRODUCTION

Gastrointestinal (GI) tract spindle cell mesenchymal tumours include leiomyoma, leiomyosarcoma, GI stromal tumours (GIST), and Schwannoma. Of these, GIST is the most common, and Schwannoma rare^(1,2). Schwannoma a form of mesenchymal tumour is rare in the GI tract. Amongst the GI Schwannoma, Gastric schwannoma is most common accounting for 0.2% of all gastric tumours^(1,2). Gastric schwannoma can occur at any age but are most frequently noted in fifth to eight decades with female predominance. Despite availability of various diagnostic modalities, including EUS guided FNA, preoperative confirmation of diagnosis is uncommon. Diagnosis is usually made post-operatively on Histopathology evaluation⁽³⁾. The gold standard treatment for gastric schwannoma is Complete surgical excision⁽⁴⁾.

CASE REPORT

A 56-years-old woman presented with upper abdomen discomfort since last 6 months. She had no prior history of gastrointestinal symptoms. She had type II DM, hypertension and hypothyroidism and was

on regular medications for the same. Physical examination and laboratory tests findings were normal. Upper GI endoscopy (Fig1,2) revealed a large 4 cm submucosal mass with central umbilication in anterior wall of greater curvature of stomach near gastric fundus. Endoscopic biopsy of the mass showed no evidence of malignancy.



Figure1,2: Upper GI Scopy showing well defined submucosal lesion in proximal body near the fundus of stomach with central umbilication with normal mucosa overlying the lesion.

Contrast enhanced CT scan (Fig3,4,5) of the abdomen was done which revealed a 3.5x3.9x 2.7 cm heterogeneously enhancing, predominantly endophytic soft tissue mass with epicenter in the greater curvature of fundus of stomach and reported most likely to be a Gastrointestinal stromal tumour.

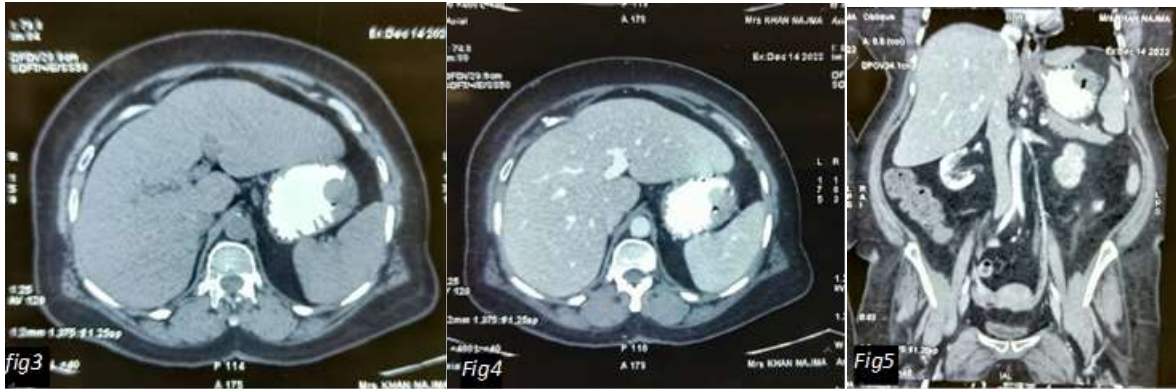


Figure 3,4,5 – Cross sectional and coronal CT images showing well defined intraluminal polypoidal soft tissue seen along the greater curvature of the proximal gastric body.

After counselling the patient and his relatives, and satisfying preoperative requisites, patient was subjected to laparoscopic sleeve resection of greater curvature of stomach near fundus with 2 cm margin (Fig6,7,8).



Figure 6,7: Intraoperative images showing laparoscopic wedge resection using endoluminal stapler
Figure 8: Resected tumor specimen

Postoperative recovery was uneventful and patient was discharged on POD3. Histopathology report of the resected specimen revealed it to be Gastric schwannoma. Immunohistochemistry (IHC) staining analysis showed diffuse positivity for S-100 (Figure9,10). It was negative for c-Kit (CD117), DOG1, SMA, CD34, CK19.

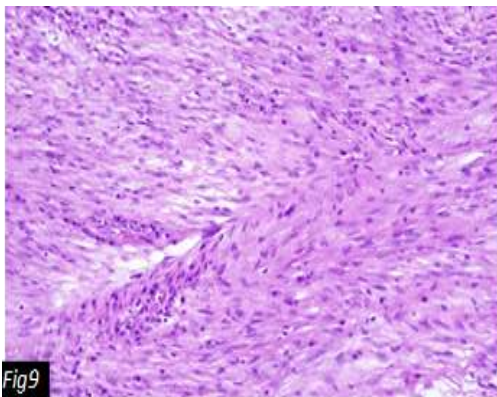


Figure 9: Tumor with spindle cells having elongated nuclei and pointed ends with some cells showing buckled nuclei with lymphocyte infiltrate.

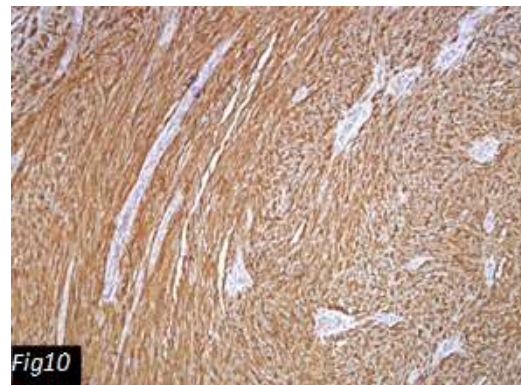


Figure 10: Immunohistochemistry showing strong S- 100 positivity (10x).

DISCUSSION

Schwannoma a form of mesenchymal tumour is rare in the GI tract. Amongst the GI Schwannoma, Gastric schwannoma is most common accounting for 0.2% of all gastric tumours ^(1,2). Gastric schwannoma can occur at any age but are most frequently noted in fifth to eight decades with female predominance ⁽⁵⁾. This finding was consistent with our case, our patient being in her fifth decade. Most of the patients are

asymptomatic, and diagnosed incidentally on imaging or UGI endoscopy done for nonspecific complaints. If symptomatic, symptoms range from discomfort to mild dyspepsia, mild abdominal pain, hematemesis, weight loss and rarely palpable abdominal mass. Hematemesis is thought to occur due to ulceration of the mass from reduced tolerance to gastric acid^(6,7,8). Gastric Schwannoma typically grows as a solitary lesion and are usually found in the gastric body, followed by gastric antrum and fundus^(6,9). Gastric schwannoma typically involve submucosa and muscularis propria. Hence on endoscopy, they appear as elevated submucosal lesions⁽⁹⁾. In comparison to GIST which is seen as heterogeneous enhancing lesion with low attenuation secondary to necrosis or haemorrhage on CECT Scan, Gastric schwannoma are seen as well-demarcated homogenous density⁽⁸⁾. Endoscopic biopsy is usually inadequate and inconclusive for definitive diagnosis because mucosal abnormalities are rarely observed in these submucosal tumours. However, EUS guided FNA has shown a diagnostic accuracy of 62–93%⁽¹⁰⁾. Histologically it is seen as spherical or multilobed well circumscribed, encapsulated tumour, developing near the nerves without invading it^(7,11). They have a fascicular arrangement with spindle shaped nuclei. There is neither necrosis nor, nuclear polymorphism, or mitosis. Immunohistochemistry staining helps to differentiate it from GIST. It shows positive staining for S100, vimentin, Leu-7, glial fibrillary acidic protein (GFAP), myelin-associated glycoprotein, and nonspecific enolase. It has negative staining for desmin, CD117, striated muscle actin, smooth muscle actin, and myosin, it being positive for GIST^(6,8,11). If the tumour is located within the muscularis propria, and is greater than 3 cm in size, endoscopic resection can be attempted with success^(8,11,12). Complete surgical excision of the tumour is the gold standard treatment for Gastric Schwannoma. The various surgical option depends on the location, extent, and size of the tumour and

includes en bloc resection, wedge resection, subtotal, near-total, or total gastrectomy. The surgical access could be either open or minimal access. Adjuvant Chemotherapy and radiation can be indicated only for malignant tumours^(3,7,13). Complete surgical excision ensures good prognosis with a low rate of recurrence and no need of follow-up imaging studies⁽¹⁴⁾.

CONCLUSION

GI Schwannoma is rare, and commonly involves stomach. They are usually asymptomatic and detected incidentally. Endoscopic biopsy is usually inconclusive, but EUS guided FNA may clinch the diagnosis preoperatively. Immunohistochemistry staining differentiates it conclusively from GIST. Complete Surgical Excision is the Gold Standard treatment.

Declaration by Authors

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