GASTRIC SCHWANNOMA - A CASE REPORT

Sumaira Bukhsh, Iqbal Muhammad, Saeed Ahmed, Shoaib Naiyer Hashmi, Muhammad Kamran*

Armed Forces Institute of Pathology (AFIP)/National University of Medical Sciences (NUMS) Rawalpindi Pakistan, *Armed Forces Institute of Mental Health (AFIMH)/University of Medical Sciences (NUMS) Rawalpindi Pakistan

ABSTRACT

Schwannomas are generally benign, slow growing tumors, which can originate from any nerve that has a schwann cell sheath. Digestive tract schwannomas are very rare. We will disuss the case of a 55 year-old man who was operated for gastrointestinal stromal tumour (GIST) but histopathology revealed gastric schwannoma. This case emphasized on the fact that for every exophytic submucosal gastric mass, gastric schwannomas must be considered as one of the differential diagnosis. Study at our institute of Armed Forces Institute of Rawalpindi diagnosed 46 gastric GIST for each gastric schwannoma.

Keywords: Schwannoma, Gastrointestinal stromal tumor.

INTRODUCTION

The mesenchymal tumors of upper and lower gastrointestinal (GI) tract mostly are composed of spindle cells which includes in order of priority the gastrointestinal stromal tumors (GISTs), then leiomyomas and leiomyosarcomas, and lastly schwannomas. Among them, GISTs are the most common tumours. Schwannomas, also named as neurinomas are rare in the digestive tract, however whenever found, the most common location is the stomach. They mostly present as asymptomatic tumours. It is necessary to differentiate them from other tumors located at submucosa. This is done by endoscopy. However, immunohistochemical studies are necessary for the definitive tissue diagnosis. We present the rare case of a 55 year old man with epigastric burning and significant weight loss, who had laproscopic wide surgical excision for GIST but histopathology revealed gastric schwannoma.

CASE REPORT

A 55 year old male resident of Rawalpindi presented to medical outpatient department (OPD) with complaints of gradually increasing epigastric burning for the last 7 month which was associated with meal intake but was not associated with any chest pain, palpitations or breathlessness and did not relieve despite the regular use of proton pump inhibitors. He also gave history of involuntary, weight loss of 10kg

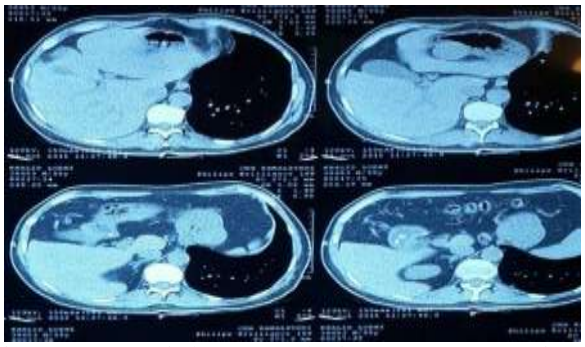

Figure-1: High resolution computerized tomographic scanning of the chest demonstrating a hypodense area in the posterior wall of stomach.

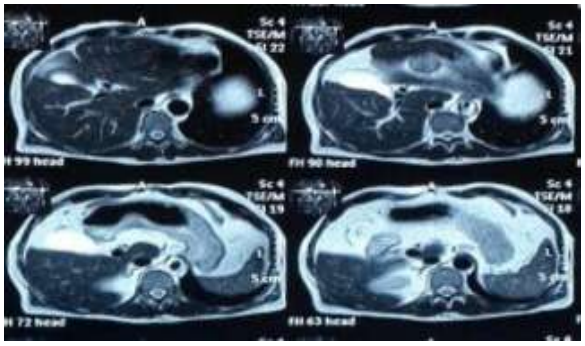

Figure-2: Contrast enhanced magnetic resonance image of abdomen revealing neoplastic growth along lesser curvature.

Correspondence: Dr Sumaira Bakhsh, House No. 58/59, 3 Marla Scheme PAF Road Mianwali Pakistan
Email: sumaira.bukhsh1@gmail.com
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over a period of 6 months which was not associated with any fever, cough or night sweats. He was advised baseline lab investigation and ultrasound abdomen which came out normal but due to persistence of symptoms despite treatment and significant weight loss further workup was planned. His upper gastrointestinal endoscopy revealed an oval shaped mass over anterior wall of stomach at cardia, along lesser curvature suggestive of GIST. High resolution computed tomography (HRCT) scan chest done revealed a hypodense area measuring 3×4.1cm along the posterior wall of stomach, bulging into the stomach lumen (fig-1). Contrast enhanced magnetic resonance imaging (MRI) of abdomen revealed a well defined round to oval shaped mass arising from the posterior wall along the lesser curvature of stomach abutting the left lobe of liver with intact liver capsule with no evidence of intraabdominal metastasis (fig-2). Submucosal tumor with the possibility of GIST was suspected and surgical intervention was recommended. Laparoscopic wide surgical resection was done, followed by smooth postoperative recovery. Specimen measuring 4x2.5x1.5 cm was sent to histopathology dept of Armed forces institute of pathology Rawalpindi, where it was formalin fixed and serially sliced (fig-3). Histopathology revealed a tumor composed of interlacing fascicles of spindle shaped cells having elongated to wavy nuclei with focal palisading. Lymphoid cuff was seen at the periphery of the lesion with no evidence of nuclear atypia, increased mitosis or necrosis (fig-4A). The tumor was strongly positive for S-100 protein (fig-4B) and non-reactive for CD117, DOG1, smooth muscle actin and desmin.

DISCUSSION

Schwannomas are defined as benign tumors with neurogenic origin that is they arise from schwann cells, which are present at the outer side of the axons of peripheral nerves. They can develop in any region along the peripheral course of any nerve[1]. These tumours are solitary and mostly arises at the site of the lesser curvature at stomach[2]. In digestive tract schwannomas are very rare while gastrointestinal mesenchymal tumors are more common. However in digestive system gastric schwannomas are most common. It is predominantly found in females in the 6th decade of life. It accounts for 0.2% of all gastric tumors while 4% of all benign gastric neoplasms[3].

Figure-3: The photomicrograph of the cut surface of the tumour.

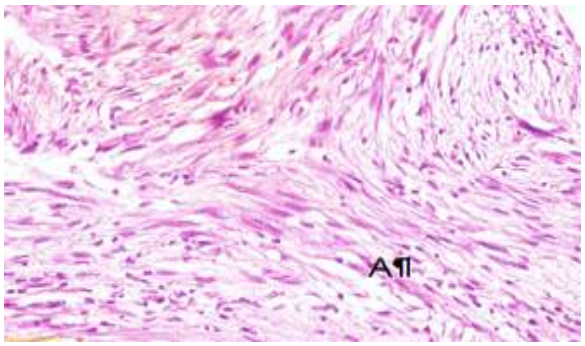

Figure-4A: Elongated to wavy nuclei with focal palisading (H&E, X100).

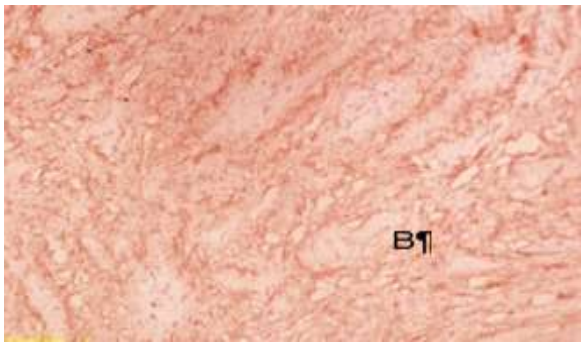

Figure-4B: The tumor cells positive for S-100 protein (Immunostaining of S-100 protein, X100).

In a study that included 33 cases of digestive tract schwannomas, four tumours were found in the esophagus, 24 were in stomach, three in the rectum and two in the colon, while no case being reported from the small gut. Mostly they are

uninodular, but can show a multifocal character[4]. They are usually located at the lesser curvature of stomach[5]. Majority of them principally involve the submucosa and muscularis propria and grow exophytically very slowly. If symptomatic epigastric pain can develop as well[1]. It originates from the nerve sheath of myenteric plexus or less commonly from meissner plexus, with gradual increase in the size of the tumor compression symptoms appear[6].

Microtrabecular architecture, prominent lymphocyte infiltrate and frequent nuclear atypia are features of gastric schwannomas[7]. Malignant type is very rare and only 8 cases have been reported[2]. Psammomatous melanotic schwannoma, plexiform schwannoma, microcystic/reticular schwannoma are further variants of schwannoma[8,9].

The diagnosis of gastric schwannoma must be made using a combination of the clinical, endoscopic, radiological and pathological findings. Clinically it usually presents as a slow growing painless mass. However if symptomatic heamatemesis is the most common symptom. Endoscopy reveals a submucosal mass and biopsy is easily taken. Radiology will reveal Homogenous attenuation on CT scan and degenerative changes are uncommon[2]. Histopathologically gastrointestinal schwannoma are spindle shaped cells with a prominent lymphocytic cuff and are characterized by the absence of typical Verocay bodies, Antoni A and Antoni B areas[10]. Differentials include gastrointestinal stromal tumours, leiomyoma and leiomyosarcoma as all of them are spindle cell lesions[11]. GIST shares clinincal, macroscopic, demographic and histologic features like nuclear palisading but perinuclear vacuolization is not seen in gastric schwannoma. Immunohisto-chemistry plays a vital role in diagnosis. Schwannomas are S100 positive, GIST are CD 117 and DOG1 positive, leiomyoma and leiomyasarcoma shows positivity for Smooth muscle actin and desmin. FISH studies revealed multiple signals with BCR probe (chromosome 22) and centromeric probes for chromosomes 2 and 18 suggesting polyploidy. After proper surgical excision with clear margins, prognosis is excellent. Recurrence is very rare[7]. Last 5 yrs Armed forces institute of Rawalpindi data reveals total 283 cases of schwannomas. Out of which 2 of them were located at colon while single cases of GI schwannomas was found at rectum, liver, esophagus and stomach. Armed forces institute of pathology Rawalpindi data reveals 46 gastric GISTs for each gastric schwannoma while study at Washington DC reveals that there are approximately 45 gastric GISTs for each gastric schwannoma[7]. Another study has shown apparently higher frequencies that is 15 gastric GISTs for each gastric schwannoma[12].

CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author.

REFERENCES

1. Romdhane H, Cheikh M, Mzoughi Z, Slama SB, Ennaifer R, Belhadj N. Gastric Schwannoma: A Case Report. Clinics and Practice 2016; 849: 96-7.
2. Singh A, Mittal A, Garg B, Sood N. Schwannoma of the stomach: a case report. J of Med Case Reports 2016; 10: 4-6.
3. Lin CS, Hsu HS, Tsai CH, Li WY, Huang MH. Gastric schwannoma. J Chin Med Assoc 2004; 67: 583-6.
4. Hou YY, Tan YS, Xu JF, Wang XN, Lu SH, Ji Y, et al. Schwannoma of the gastrointestinal tract: a clinicopathological, immunohistochemical and ultrastructural study of 33 cases. Histopathology 2006; 48: 536-45.
5. Kwon MS, Lee SS, Ahn GH. Schwannomas of the gastrointestinal tract: clinic pathological features of 12 cases including a case of esophageal tumor compared with those of gastrointestinal stromal tumors and leiomyomas of the gastrointestinal tract. Pathol Res Pract 2002; 198: 605-13.
6. McNeer G, Pack GT, eds. Neoplasms of the Stomach. Philadephia: J Lippincott 1974: 518-40.
7. Voltaggio L, Murray R, Lasota J, Miettinen M. Gastric schwannoma: A clinicopathologic study of 51 cases and critical review of the literature. Hum Pathol 2012; 43(5): 650-9.
8. Carney JA. Psammomatous melanotic schwannoma. A distinctive, heritable tumor with special associations, including cardiac myxoma and the Cushing syndrome. Am J Surg Pathol 1990; 14: 206-22.
9. Chen YY, Yen HH, Soon MS. Solitary gastric melanotic schwannoma: sonographic findings. J Clin Ultrasound 2007; 35: 52–4.
10. Prévot S, Bienvenu L, Vaillant JC, de Saint-Maur PP. Benign schwannoma of the digestive tract: a clinicopathologic and immunohistochemical study of five cases, including a case of esophageal tumor. Am J Surg Pathol 1999; 23; 431–36.
11. Enshaei A, Hajipour B, Abbasi F, Doost PR, Rezaei S. Schwannoma of stomach. J Pak Med Assoc 2015; 65: 672-4.
12. Sarlomo-Rikala M, Miettinen M. Gastric schwannoma- a clinicopathological analysis of six cases. Histopathology 1995; 27: 355–60.