

## CASE REPORT

# Gastric Schwannoma: Case report from Tanzania and brief review of literature

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## Introduction

Upper gastrointestinal bleeding is a major cause of morbidity and mortality worldwide. In Tanzania, upper gastrointestinal bleeding is very common with the commonest etiologies being variceal hemorrhage (51.3%) and bleeding peptic ulcer disease (25%), respectively [1]. We report a rare case of gastric schwannoma presenting with upper gastrointestinal bleeding.

## Case History and Examination

ALC, a 45-year-old female presented to the gastroenterology unit of a tertiary teaching hospital in Dar es salaam after having had recurrent episodes of vomiting blood. Her first episode had occurred a year and half ago when she was 8 months pregnant and resulted into an intra-uterine fetal death due to the ensuing severe anemia. She had another episode 8 months after the first and subsequent episodes came in quick succession a month later.

These episodes began suddenly and she would vomit profusely losing between 1 and 1.5 L of fresh blood. She also reported passage of black tarry stools. She denied any history of epigastric pain, loss of appetite, dysphagia, orodynophagia, abdominal pain, mouth sores, heart burn,

### Key Clinical Message

Upper gastrointestinal bleeding causes significant morbidity and mortality worldwide. We report a rare case of hematemesis secondary to a gastric schwannoma in a Tanzanian female. Gastric schwannomas should be considered in the differential diagnosis of gastric masses and distinguished from other etiologies, given their excellent postresection prognosis.

### Keywords

Emergency medicine, gastroenterology and hepatology, general surgery, oncology, schwannoma.

fever, jaundice, or hemochezia. Each episode was associated with easy fatigability and other symptoms of anemia (Table 1).

She did not vomit, regurgitate or choke after meals. Neither were there any reported neck, axillary or inguinal swellings. She did not have any joint pains or deformities or any skin hyperpigmentation. There was no history of easy bruising, menorrhagia or epistaxis. She reported a history of weight loss (90 kg in 2012 and 70 kg in 2013).

In each of these episodes, she was resuscitated with blood transfusions and IV crystalloids. Parenteral proton pump inhibitors and octreotide were also given as empiric rescue therapy.

She was diagnosed to be diabetic 6 years prior to the onset of this illness as part of a routine checkup. Since then, she has been on regular follow-up at her diabetic clinic and well adherent to her medications (metformin and glibenclamide) and diet. She reported no other illnesses. She had O negative blood group.

Her physical examination (soon after an episode of vomiting) was indicative of signs of ongoing blood loss. Her vitals included BP: 100/60 mmHg, PR: 120/min, regular, feeble, RR: 20/min, temp: 36.8°C, SPO2: 95% on room air, RBG 9.1 mmol/L. Her abdominal examination did not reveal any distention, abdominal masses, or

**Table 1.** Timeline.

|                |  |
|----------------|--|
| 2005           | Diagnosed with Diabetes and started on oral hypoglycemic agents with regular follow-up at diabetic clinic          |
| December 2012  | First episode of hematemesis while 8 months pregnant resulting in intrauterine fetal death                         |
| August 2013    | Second episode of hematemesis  |
| September 2013 | Third episode of hematemesis   |
| October 2013   | Fourth episode occurred 2 weeks after the third episode and subsequent episodes occurred with increasing frequency |
| November 2013  | Upper GI Endoscopy revealed a Fundal Mass  |
| January 2014   | Endoscopic resection failed  |
| February 2014  | Patient taken for Laparotomy and excision of gastric mass  |
| March 2014     | Histopathology reports Gastric Schwannoma  |
| August 2014    | Follow up visit at 6 months  |

hepatosplenomegaly with a liver span of 12 cm. Signs for ascites and succussion splash were negative. Gloved finger was stained with black tarry stool on rectal exam. Vaginal examination was normal. Respiratory examination was normal. Cardiovascular examination revealed a systolic flow murmur (explained by her hyperdynamic state). Neurological examination was normal. With resuscitation, her vitals normalized. She had normal skin and no telangiectasia were noted.

## Differential Diagnosis, Investigation and Treatment

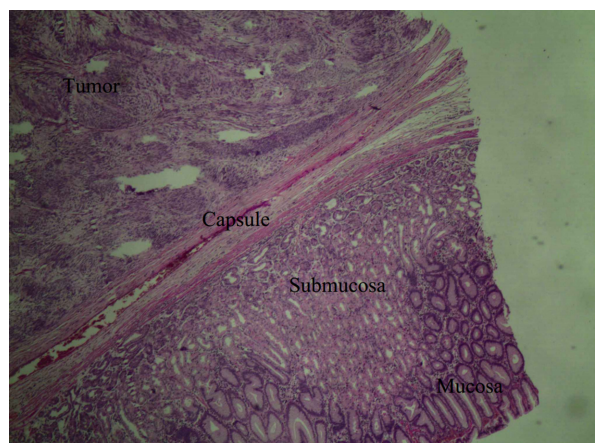
Her Investigations revealed a microcytic anemia (hemoglobin 4.17 g/dL, MCV 76.1fL, MCH 23.0 pg). Her ESR was 15 mm in the first hour. No abnormalities were detected in her WBC or platelet counts. She had a normal coagulation profile, renal profile and electrolytes, liver enzymes and amylase levels. She tested Negative for HBsAg, HCV, VDRL, and HIV. Her HBA1c was 6.1% with a normal urinalysis. ECG and ECHO were normal.

While the differentials in her condition included common causes of upper GI bleeding like variceal hemorrhage and peptic ulcer disease, she did not have the risk factors for either condition. We argued more in favor of a gastric tumor in view of her weight loss and the progressive increase in frequency of the hematemesis suggestive of a growing lesion.

Upper GI endoscopy revealed a fundal mass 5\*6 cm in diameter with a broad base extending to the proximal part of the body, with normal looking overlying mucosa and easily bleeding to touch (Fig. 1). Multiple endoscopic punch biopsies were taken but yielded inconclusive find-



**Figure 1.** Endoscopic view. Approximately 5\*6 cm mass with a broad base seen in the fundus extending to the proximal part of the body of the stomach with normal looking overlying mucosa.

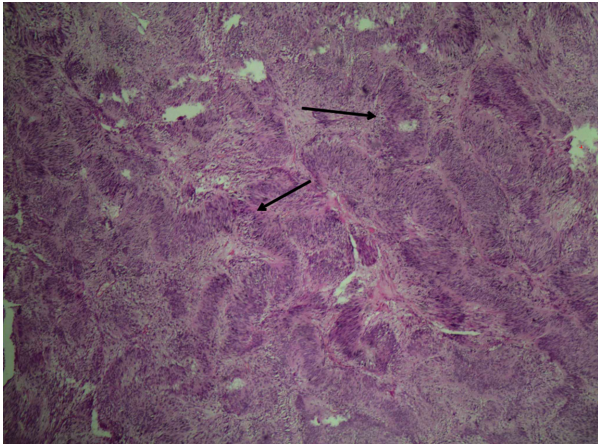


**Figure 2.** Normal gastric mucosa and submucosa separated from the tumor by a capsule (H&E stain, low power).

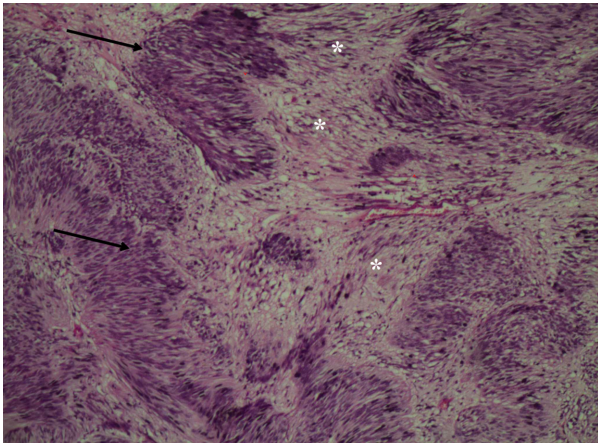
ings. A CT scan of the abdomen showed a soft tissue mass within the stomach which enhanced on contrast administration with significant narrowing of gastric lumen. However, no metastases were detected. A chest X-ray was also normal. Endoscopic ultrasound was unavailable.

After endoscopic resection of the tumor failed, she was taken in for laparotomy where she underwent gastrotomy with resection of the mass with 2 cm tumor-free margins. Intraoperative findings showed a multinodulated mass in the stomach anchored on the posterior wall of the fundus, infiltrating through the stomach wall, easily bleeding with a central crater.

The sample was sent for histopathology and revealed a well circumscribed and capsulated tumor involving the



**Figure 3.** Verocay bodies (arrows). These are bands of fusiform nuclei alternating with clear zones (H&E stain, intermediate power).



**Figure 4.** Antoni A (Arrow) and Antoni B (\*) areas (H&E, High power). Antoni A and Antoni B areas are hyper and hypocellular areas respectively.

muscularis of the stomach but sparing the mucosa and submucosa (Fig. 2), made up of waving and palisading spindle cells forming Verocay bodies (Fig. 3) with hyper (Antoni A areas) and hypo (Antoni B areas) cellular areas (Fig. 4). Only mild pleomorphism was noted. The histological diagnosis showed a gastric schwannoma. Immunohistochemistry studies were unavailable for further analysis.

### Outcome and Follow-up

Post-surgery the patient fared well and her laparotomy site healed uneventfully. At 6 months follow-up, she had

not reported any black stools or vomiting. She had gained 5 kg and her hemoglobin had risen to 12 g/dL.

### Discussion

Schwannomas (or Neurinomas or Neurilemmomas) are commonest in the head and neck and rare in the gastrointestinal tract [2]. However, among GI schwannomas, the stomach is the commonest site of occurrence followed by colon and rarely the esophagus and small intestine [3]. They are slow growing mesenchymal tumors and constitute 6.3% of all gastric mesenchymal tumors and 0.2% of all gastric tumors [4]. There is a marked female preponderance (F:M ratio 4:1) and commonly occurs in the fourth to sixth decade of life (mean age 58 years) [3].

They are most frequently asymptomatic. However, when symptomatic most common presentation includes upper gastrointestinal bleeding, abdominal discomfort, or a palpable mass [5, 6]. Gastrointestinal hemorrhage occurs as the growing submucosal mass compromises the blood supply to the overlying mucosa which may ulcerate secondary to ischemia or from a reduced tolerance to the gastric acidity [2, 5, 7]. In this patient, the progressive shortening interval between episodes was suggestive of a slow-growing mass lesion. Weight loss which has been rarely associated with this tumor was very remarkable in this patient.

Gastric schwannomas enhance with contrast administration on CT and only rarely show degenerative changes like calcification or cystic changes [8]. On MRI, they are also strongly enhancing and appear to have low to medium signal intensity on T1W and high signal intensity on T2W images [9]. Endoscopy is important to localize the tumor in the GI. Endoscopic ultrasound which is most useful in identifying small tumors [10] is unavailable in our setup. Incidental discovery is common when patients undergo abdominal imaging for other reasons.

Histologically, these are spindle cell mesenchymal tumors. There is usually a peritumoral lymphoid cuff, with palisading morphology of the spindle cells forming Verocay bodies. Other findings include hypercellular and hypocellular areas designated as Antoni A and Antoni B areas [11]. They are S100 positive and CKIT negative on immunohistochemistry. Their involvement of the muscularis without involvement of the mucosa and submucosa explains the inconclusive findings which we got from endoscopic biopsy. Similar occurrences have also been reported elsewhere [12].

Recommendations for treatment are surgical en bloc resection of the mass. Acceptable options include local resection, wedge resection, partial, and even total gastrectomy. Which option is chosen will depend on the size

and location of the tumor and its relationship to surrounding structures. Recurrence rates are extremely low [13]. Malignant variants of this tumor have not been reported. There is a strong argument to suggest that previously identified malignant variants of this tumor may actually have been other malignant gastric mesenchymal tumors rather than gastric schwannomas, since immunohistochemical differentiation was unavailable at the time [14–17].

This case illustrates a very rare cause of a very common presentation. Limited access to specialized gastroenterology and surgical care, insufficient supplies of O Rh negative blood, limited histopathology and immunohistochemistry expertise, and geographic barriers are among the many factors that preclude timely diagnosis and management of such patients in Tanzania. This article illustrates the first case of gastric schwannoma in Tanzania and reminds us not to exclude rare entities as a cause of common clinical presentations.

In conclusion, gastric schwannomas should be considered in the differential diagnosis of masses found in the stomach. It is important to distinguish them from other stomach tumors, given their excellent prognosis following resection.

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## Conflict of Interest

None declared.

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