

# Gastric submucosal bleeding tumor. Do you think about glomus tumor of stomach?

## Abstract

Glomus tumor is a rare mesenchyme tumor of the gastrointestinal tract, especially of stomach. We describe unusual presentation of gastric Glomus tumor of 76-year-old patient who presented with upper gastrointestinal bleeding. Subsequent investigation showed tumor of 3cm at the posterior wall of the stomach. A wedge resection of the tumor was performed using laparoscopic staplers. The histological examination and immunohistochemical stains confirmed diagnosis of gastric Glomus tumor. We discuss the management before operation, the problems of diagnosis and surgical treatment of the patient with unusual location and presentation of the lesion.

**Keywords:** glomus tumor, stomach, sub mucosal lesion, upper gastrointestinal bleeding, laparoscopic wedge resection, gastrointestinal tract, staplers, glomus cells, gastroscopy, GIST, immunohistochemical

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## Introduction

Glomus tumor (GT) is a rare, benign smooth body-like cell made up of normal Glomus cells. Glomus body, neuromyoarterialglomus, is an arterio-venous shunt that is responsible for regulation of skin temperature. It is a rare neoplasm representing 2% of all soft tissue tumors. It is located usually in areas of rich skin flesh glomus (the subungual regions of digits or the deep dermis of the palm, wrist, forearm and foot). Particularly rare, but it can occur anywhere including gastrointestinal tract, nerves, respiratory tract.

## Case report

A 76-year old man was admitted due to upper gastrointestinal bleeding. He was hemodynamically stable. Physical examination was unremarkable except for melena on rectal examination. Nasogastric tube showed clear gastric content. There was no history of recent abdominal pain, weight lost or vomiting. On admission hemoglobin level was 8.9g/dl. All other blood tests including coagulation profile were normal. After initial resuscitation, he underwent urgent Gastroscopy in which a sub mucosal 3cm ulcerated mass was identified at the greater curvature without evidence of active bleeding. Bleeding ceased spontaneously. Further evaluation was performed. Endoscopic ultra sound showed a 3cm mixed echogenicity mass arising from the sub mucosa without lymphadenopathy. Biopsies were not taken. An abdominal computer tomography confirmed the diagnosis of a 3cm sub mucosal lesion with peripheral enhancement after injection of contrast material. PET CT showed a pathological uptake of FDG in the gastric tumor only (Figure 1) and a preoperative diagnosis of GIST were made.

Under general anesthesia a laparoscopic exploration was performed. A 3cm tumor was found at the posterior wall of the stomach (Figure 2). There were no other pathological findings during the exploration of the abdomen cavity. A wedge resection of the tumor was performed using laparoscopic staplers. The patient had uneventful recovering period and was discharged 5days after surgery. On slides taken from lesion showed the round cells with small uniform nuclei, without nuclear pleomorphic and no mitotic figures. The distribution of round glomus cells around the open vascular lumen is a key to the

pathology diagnosis. The lesion was positive for alpha-smooth muscle Actine (alpha SMA), Calponin and negative for CD-34, C-KIT and CK MNF116. The proliferating marker showed very low mitotic rate, less than one per 50 HPF. The histological examination and immunohistochemical stains confirmed diagnosis of gastric glomus tumor (Figure 3). The surgical resection margins were free of tumor.

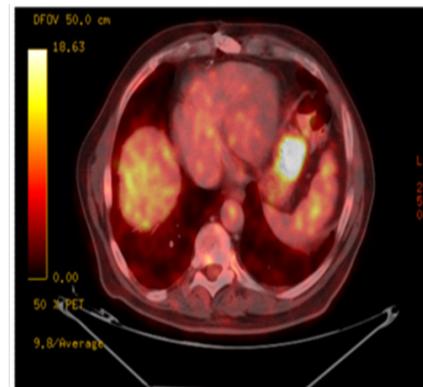


Figure 1 PET CT showed a pathological uptake of FDG in the gastric tumor.

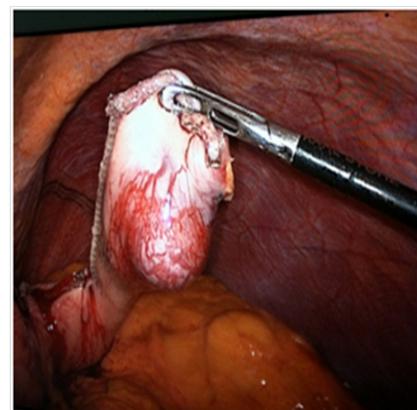
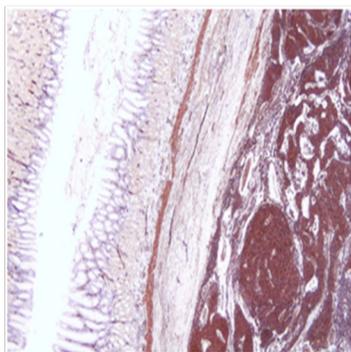


Figure 2 A 3cm tumor was found at the posterior wall of the stomach.



**Figure 3** The histological examination and immunohistochemical stains of gastric glomus tumor.

## Discussion

Glomus tumor was first described by Barre et al.<sup>1</sup> They described the classic location at the subungual region of a digit. Later it was found that it may occur anywhere in the body, including skin, soft tissue, nerves, nasal cavity, trachea, liver and stomach.<sup>2</sup> GT of stomach was first described by Talijeva and since then, about 200 cases have been published. The incidence of GT is less common than that of gastrointestinal tumors (GIST), with only 1 in 100 cases of GIST being gastric GT. Glomus tumor of the stomach is arising in the intramuscular layer. It usually presents as a single solitary submucosal nodule of stomach. The most common presentation of GT is upper gastrointestinal bleeding. Preoperative differential diagnosis is difficult and includes all kinds of gastric mesenchyme tumors. GT of the stomach is a rare finding, but it is the most frequent intraperitoneal glomus tumor.<sup>3</sup> It arises in the intramuscular layer and occurs as a unitary submucosal lesion sometimes with obvious ulceration in the greater curvature.<sup>2-5</sup> GT of stomach generally is a benign tumor although it can be malignant and have the potential to metastasize.<sup>6,7</sup> GTs usually occur in the fifth, sixth decade of life. The diameter of gastric GT is very variable; from 0.8 cm to 21 cm.<sup>6</sup> The preoperative diagnosis of GT is not easy. It is very important to note that imaging techniques fail to differentiate GT from other stromal or mesenchymal tumors, such as neuroendocrine tumors, GIST, Schwannoma and mainly vascular tumor such as hemangioma may show a similar pattern.<sup>8,9</sup> There is no need to do endoscopic biopsy of intramural lesions due to its ineffectiveness especially when it is removable. The endoscopic ultrasound shows heterogeneous tumors between the submucosal and muscular propria layer which may be confused with GIST or leiomyosarcoma.<sup>10,11</sup>

The most common symptom of GT is gastrointestinal bleeding as we observed in our patient. A full pre-operative evaluation led to a diagnosis of GIST. An accurate diagnosis was made only by a histological examination of the resected specimen. Even GT is usually benign, malignant behavior cannot be excluded. So, operative resection is one of the methods to reach right diagnosis. Wedge resection with negative margins should be treatment of choice for these patients. Histologically, GT of our patient had low risk of malignancy and macroscopically had about 2 cm in diameter. As published previously the classification criterion for malignant GT: deep location, size more than 2 cm, presence of atypical mitotic figure; combination of moderate to high nuclear grade and mitotic activity

(5 mitoses/50 high power fields).<sup>12</sup> There are no guidelines for follow up of patients who underwent resection of gastric GT. Recurrent GT is rare and occurs usually at the site previous resection. Therefore, it is recommended to perform endoscopy annually.<sup>6</sup>

## Conclusion

GT of the stomach is a rarely found benign mesenchyme tumor. Usually it is impossible to make a preoperative diagnosis. The only one diagnostic method is histological and immunohistochemical analysis. GT is usually benign, but malignant behavior cannot be excluded. So, there is indication for resection of tumor with negative margins.

## Acknowledgements

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## Conflict of interest

The author declares no conflict of interest.

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