



# Left Atrial Myxoma Masquerading as A Cause of Syncope with Gastrointestinal Bleeding: A Case Report

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## INTRODUCTION

Primary cardiac tumors originating in the myocardial cavity are very rare with an incidence 1.38 per 100,000 people per year in the US. Majority of primary cardiac tumors are myxomas which can cause morbidity and mortality by obstructing blood flow or embolization, although cardiac myxomas are benign tumors.

The symptoms due to myxoma depend on their anatomic location. About 80 % of myxomas originate from left atrium and most of the remaining 20 % are found in right atrium.

More than half of patients with myxoma have cardiovascular symptoms including heart failure and secondary pulmonary hypertension due to mitral valve disease and may cause syncope along with other symptoms through various mechanisms. The most common symptoms are involved in, but not limited, obstruction of the circulation through the heart or heart valves, embolization that is usually systemic but can be pulmonary as well, interference with the heart valves or direct invasion of the myocardium.

## HYPOTHESIS

The further diagnostic test including Transthoracic Echocardiogram is necessary and critical for a clinical case with syncope and severe anemia but stable vital signs.

## METHODS

1. Lab tests were conducted in the Emergency Room including Complete Blood Count with Differential, Coagulation Studies and Comprehensive Metabolic Panel.
2. The 12-lead electrocardiogram was obtained in the Emergency Room when the patient was admitted with the syncope.
3. An Esophagogastroduodenoscopy was conducted to detect the source of bleeding from upper gastrointestinal tract.
4. Several Transthoracic Echocardiograms were acquired pre- and one month post-surgical operation.
5. A CT-scan of chest, abdomen, and pelvis with contrast was conducted in order to rule out metastasis.
6. The surgical specimens collected from the mass removed from the left atrium and from the stomach were analyzed by histopathology. The formalin-fixed paraffin embedded tissue sections underwent H&E staining followed by image acquisition under microscopy at 40x and 200x magnification, respectively.

## RESULTS

### Laboratory Tests on Admission with Syncope

Complete Blood Count with Differential			Comprehensive Metabolic Panel		
Tests	Results	Reference Interval	Tests	Results	Reference Interval
White Blood Count	10.7	3.5-10.5 K/CUMM	Sodium	138	136-145 mmol/L
Red Blood Count	1.57	4.15-5.75 M/CUMM	Potassium	4.7	3.5-5.5 mmol/L
Hemoglobin	4.3	12.8-16.6 g/dl	Chloride	111	98-110 mmol/L
Hematocrit	14.3	38.8-50.2 %	Carbon dioxide	19	20-28 mmol/L
Mean Corpuscular Volume (MCV)	91.1	80.0-105.0 fl	Glucose	109	65-99 mg/dL
Mean Corpuscular Hemoglobin (MCH)	27.4	27.0-34.0 pg	Blood Urea Nitrogen	58	8-26 mg/dL
Mean Corpuscular Hemoglobin Concentration (MCHC)	30.1	30.5-34.5 g/dl	Creatinine	1.05	0.80-1.50 mg/dL
Platelet Count	328	150-450 K/CUMM	Glomerular filtration rate	83	>60 mL/min/1.73 M <sup>2</sup>
			Alanine Aminotransferase	9	11-58 U/L
			Aspartate Aminotransferase	12	17-59 U/L
			Alkaline Phosphatase	56	35-126 U/L
			Bilirubin Total	0.3	0.1-1.2 mg/dL
			Protein Total	5	6.0-8.3 g/dL
			Albumin	2.8	3.5-5.0 g/dL
			Calcium	8.2	8.4-10.5 mg/dL

Fig. 1

### Myxoma Presented in the Four-Chamber View of Transthoracic Echocardiogram

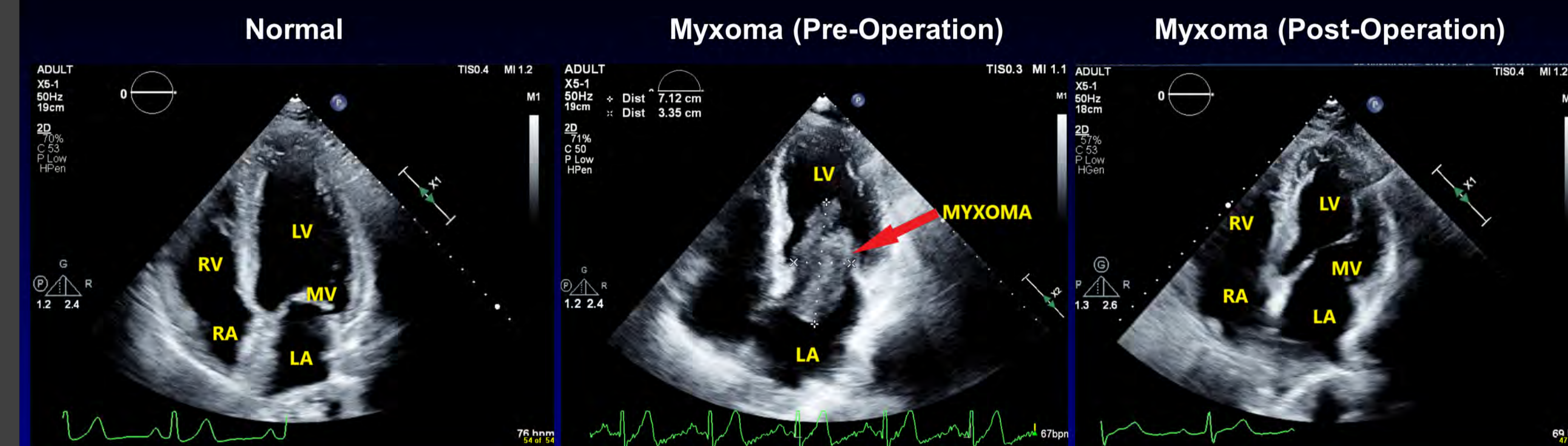


Fig. 3

### Electrocardiogram on Admission with Syncope

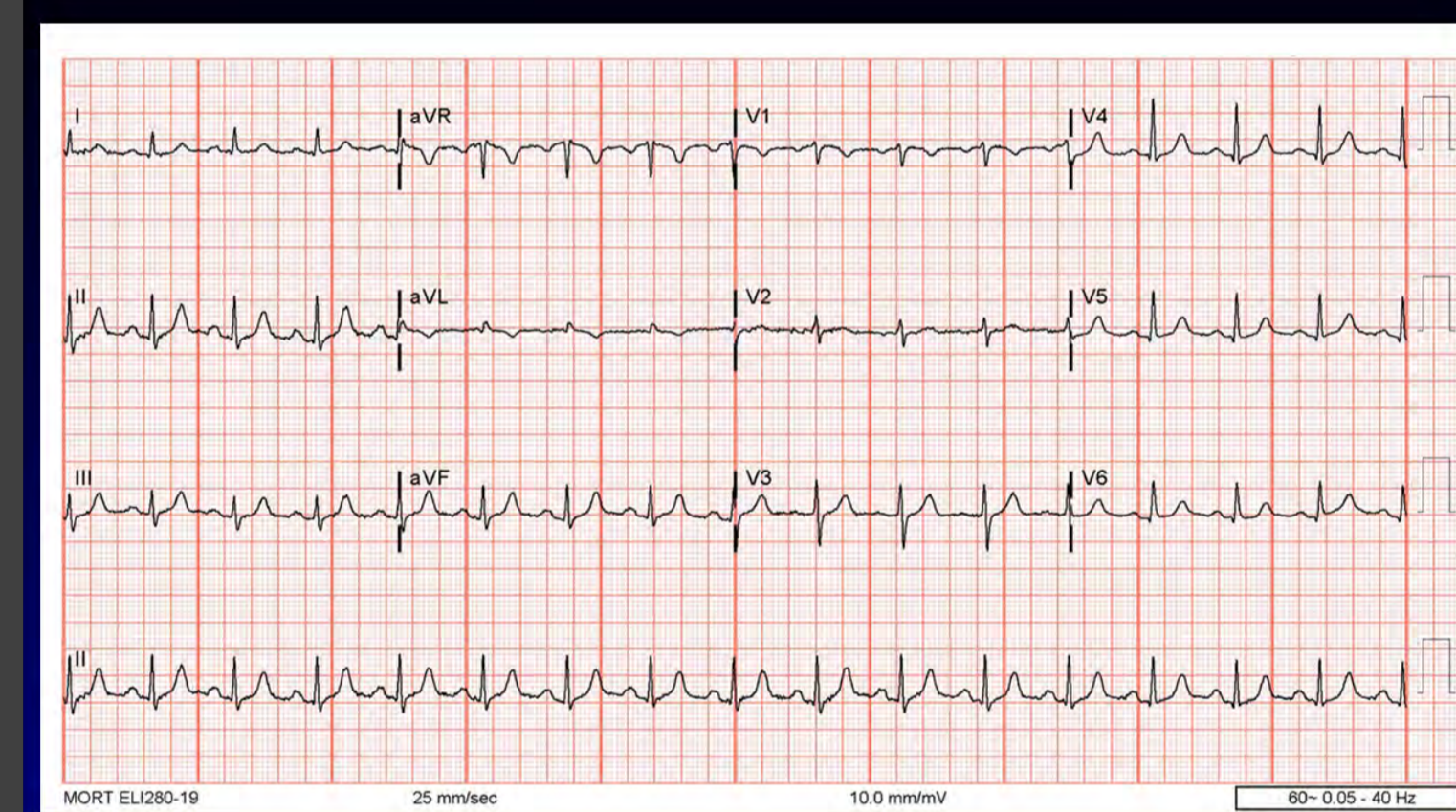


Fig. 2

### Myxoma Presented in the Comprehensive Transesophageal Echocardiographic Examination

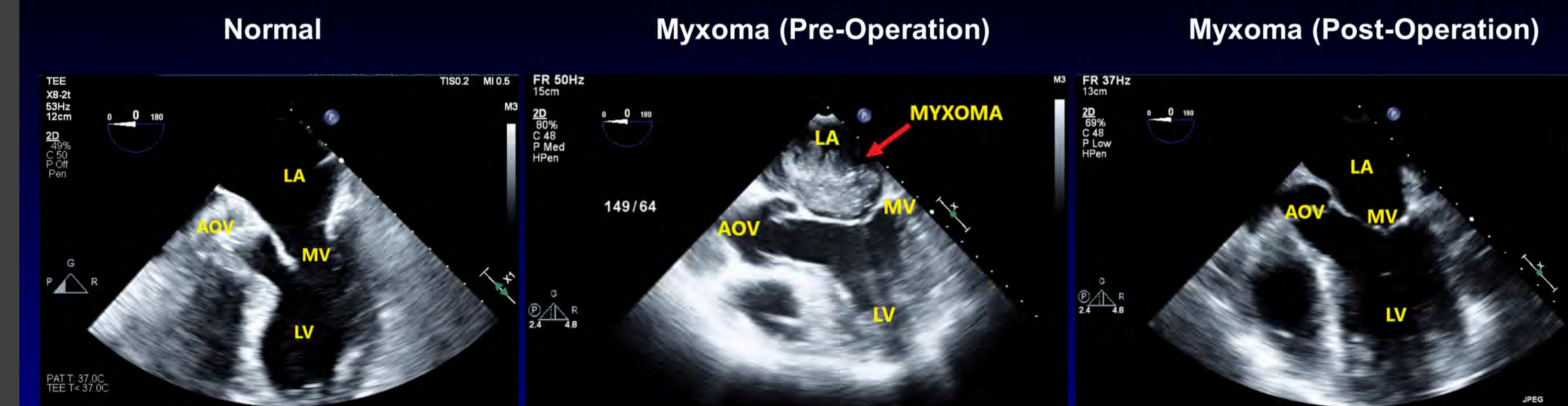


Fig. 4

### Pathology Analysis of Myxoma Removed from Left Atrium

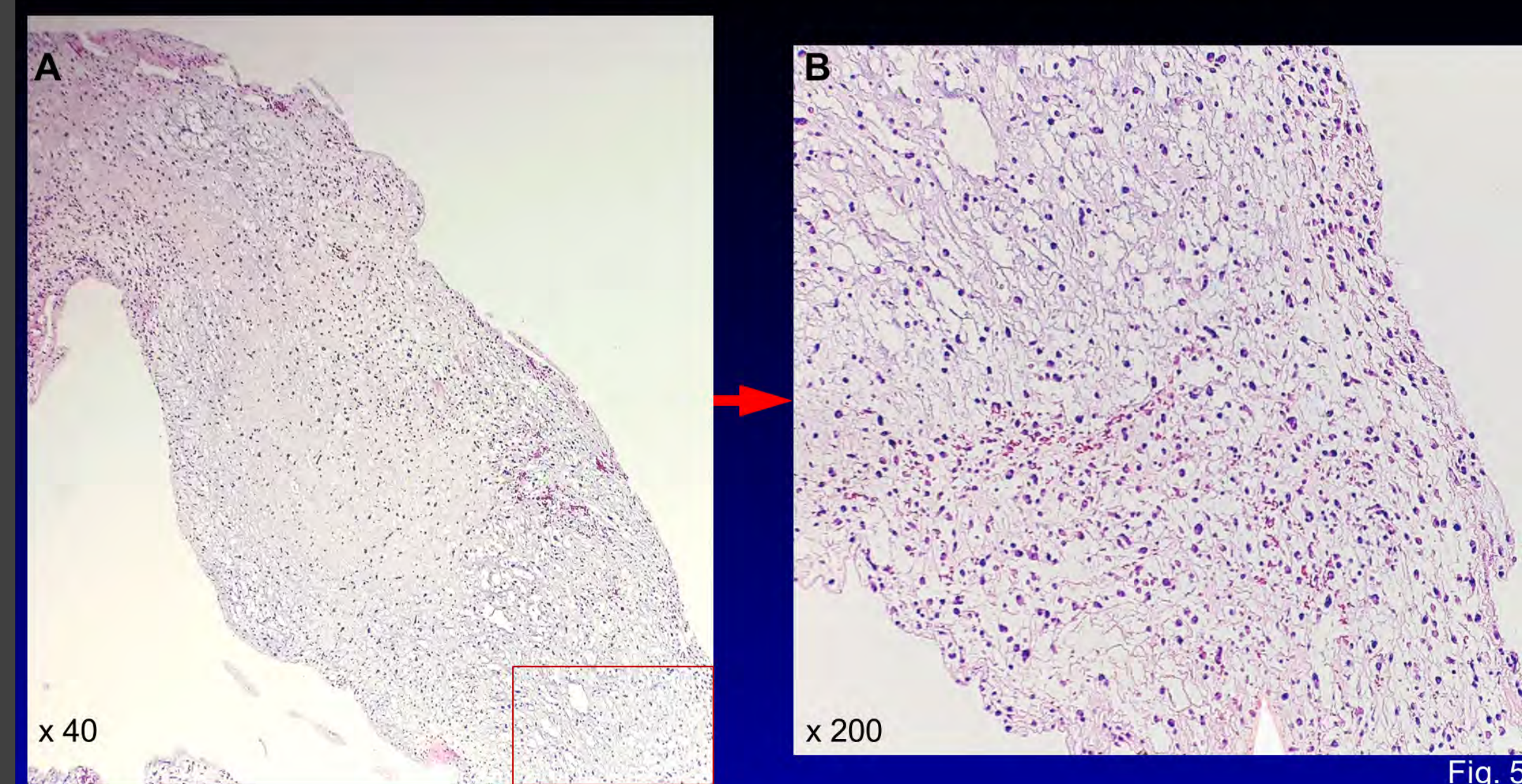


Fig. 5

### Gastrointestinal Stromal Tumor Removed from Stomach

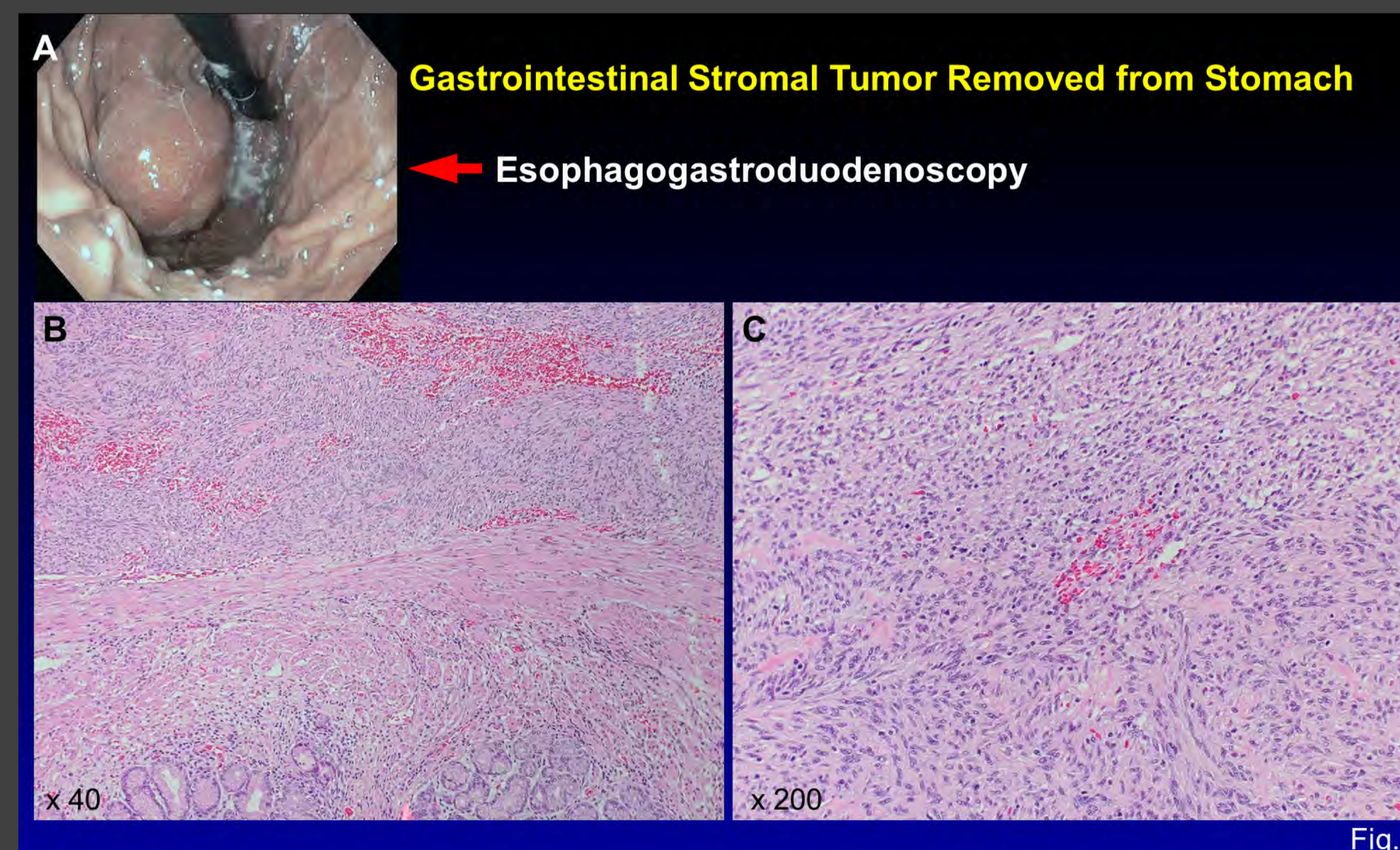


Fig. 6

## SUMMARY

1. A 70 year-old patient with syncope was admitted to Emergency Room. Patient's hemoglobin was 4.3 g/dl, the ratio of blood urea nitrogen to creatinine was high, with melena while coagulation panel and platelets were in normal range, suggesting the bleeding from gastrointestinal tract (Fig.1). Esophagogastroduodenoscopy was conducted to detect the source of bleeding from upper gastrointestinal tract which showed a mass (6.5 cm) in the stomach (Fig. 6A).
2. An electrocardiogram obtained on admission did not show any bradycardia or atrio-ventricular block (Fig. 2). A CT-scan of chest, abdomen and pelvis with contrast did not show any pulmonary or hepatic metastasis.
3. The transthoracic echocardiogram detected for syncope showed left ventricle ejection fraction more than 55% without any aortic stenosis. However, a large globular echodensity measuring 4.6 cm x 3.75 cm presented in left atrium suggestive of myxoma (Fig. 3).
4. Several Transthoracic Echocardiograms were acquired pre- and one month post-operation (Figs. 3 and 4), suggesting successful myxoma excision and no myxoma recurrence one month after surgical operation.
5. Pathology analysis confirmed that the left atrial mass was an atrial myxoma, characterized by a sparsely cellular proliferation of myxoid stroma that was well vascularized, with interspersed, slightly spindle cells with small pyknotic nuclei. However, mitotic figures, cytologic atypia, or coagulative tumor cell necrosis was not detected (Fig. 5).
6. As illustrated in Figs. 6B-6C, the tumor was characterized by broad anastomosing fascicles of spindle cells with moderately enlarged nuclei, minimal cytologic atypia, and moderate amounts of eosinophilic cytoplasm with indistinct cell borders. Necrosis was minimal. The staining pattern, in correlation with the morphology, was consistent with a gastrointestinal stromal tumor.

## CONCLUSIONS

Severe anemia and subsequent hypovolemia due to bleeding from gastric tumor can cause syncope. This case demonstrates that, in practice of medicine, a single symptom can be due to simultaneous presence of more than one completely unrelated disease processes. A better understanding of the synchronous gastrointestinal stromal tumors and cardiac myxomas would definitely facilitate the diagnosis, proper management, and improve prognosis for patients.

## ACKNOWLEDGEMENT

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