

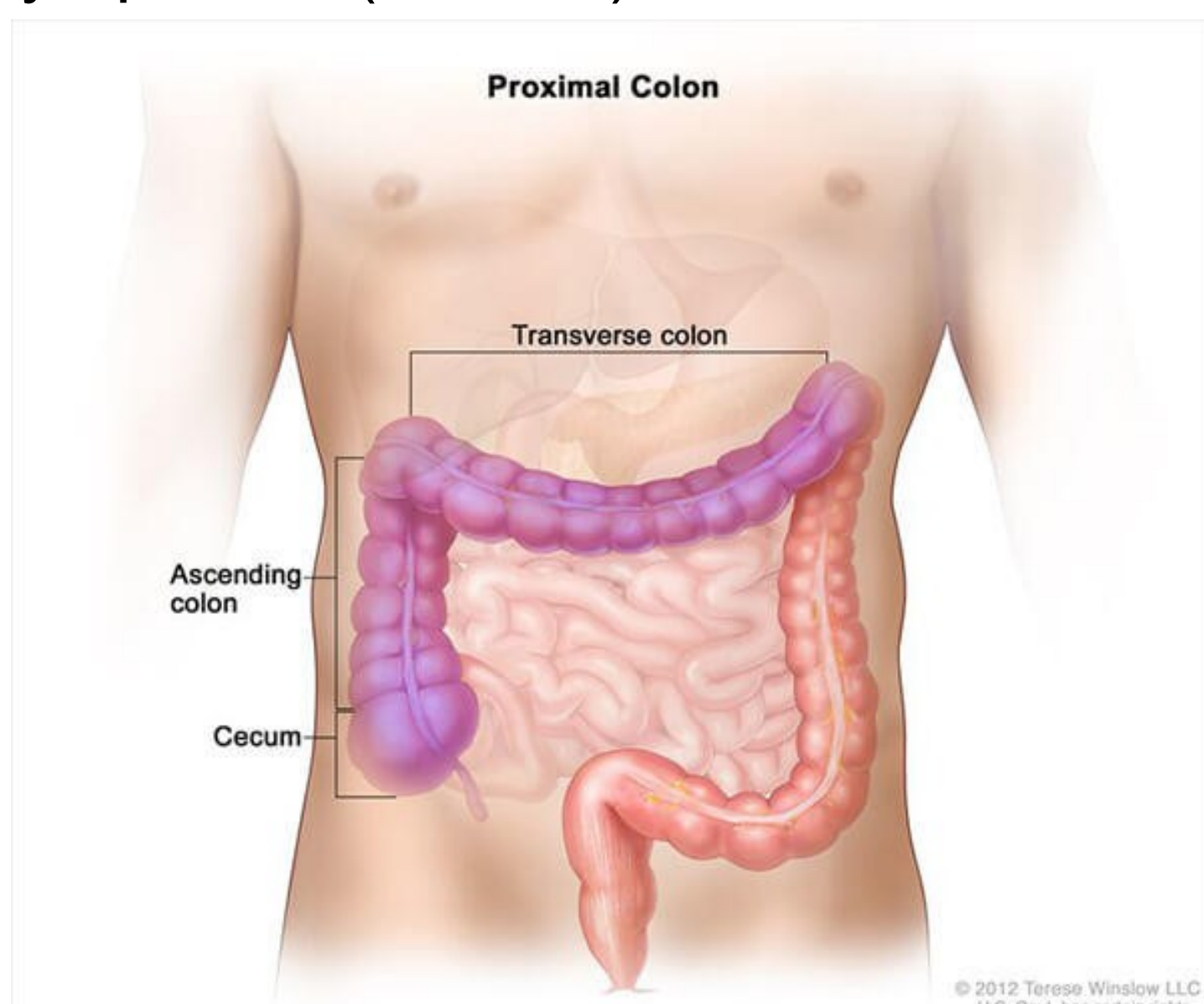
# Primary Diffuse Large B-cell Lymphoma of the Cecum in a Patient with Underlying Ischemic Heart Disease



Lauren Gawey, Elizabeth Ellent MD, Agustin A Garcia MD.  
LSUHSC Department of Hematology/Oncology.

## Introduction

The GI tract is the predominant site of secondary extra-nodal non-Hodgkin lymphoma (NHL), however, primary lymphomas of the GI tract are rare, accounting for only 1-4% of malignancies arising in the stomach, small intestine, or colon [1,2]. Primary colorectal lymphoma is even more uncommon, accounting for only 0.3% of large intestinal malignancies and 3% of GI lymphomas [3]. The cecum is the most frequently affected area for primary colorectal lymphoma, and the most common subtype is diffuse large B-cell lymphoma (DLBCL).



Credit: National Cancer Institute/ Terese Winslow

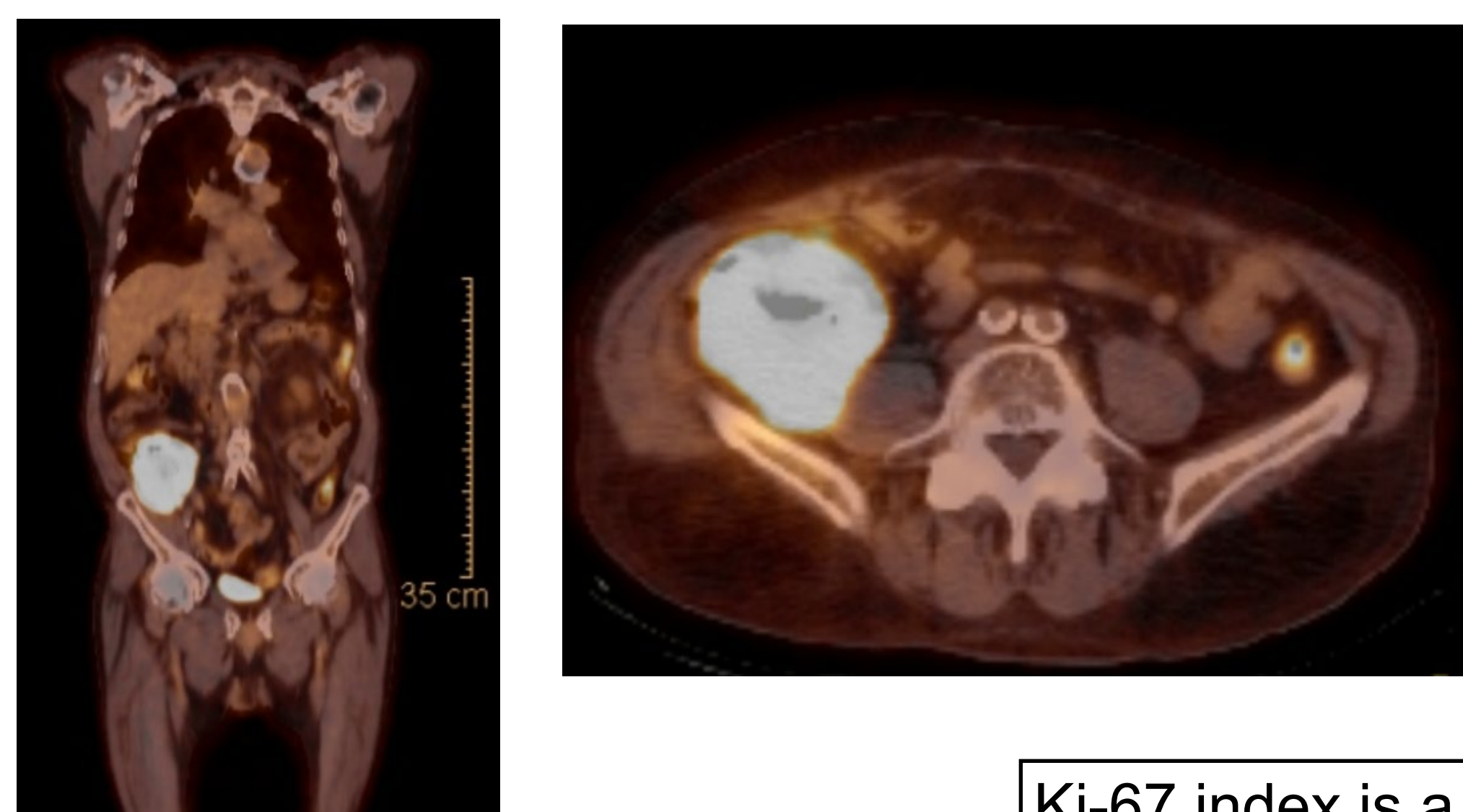
The current recommended treatment regimen for advanced stage DLBCL is 6 cycles of R-CHOP (Rituximab, cyclophosphamide, doxorubicin, vincristine, and prednisone) chemotherapy spaced 21 days apart [4].

The cardiotoxic effects of doxorubicin must be accounted for in patients with cardiac disease, but there is limited data available that can be used to guide both prevention and management of cardiotoxicity. Additionally, there are no randomized trials for chemotherapy treatment of DLBCL that includes patients of underlying cardiac disease.

## Method

We present a case of a 73-year-old Caucasian male with underlying ischemic heart disease and history of renal cell carcinoma who initially presented with pulmonary symptoms and findings of bilateral lung nodules. He was subsequently found to have primary diffuse large B-cell lymphoma of the proximal colon with metastasis to the lungs. He is currently being treated with R-CHOP-21 chemotherapy.

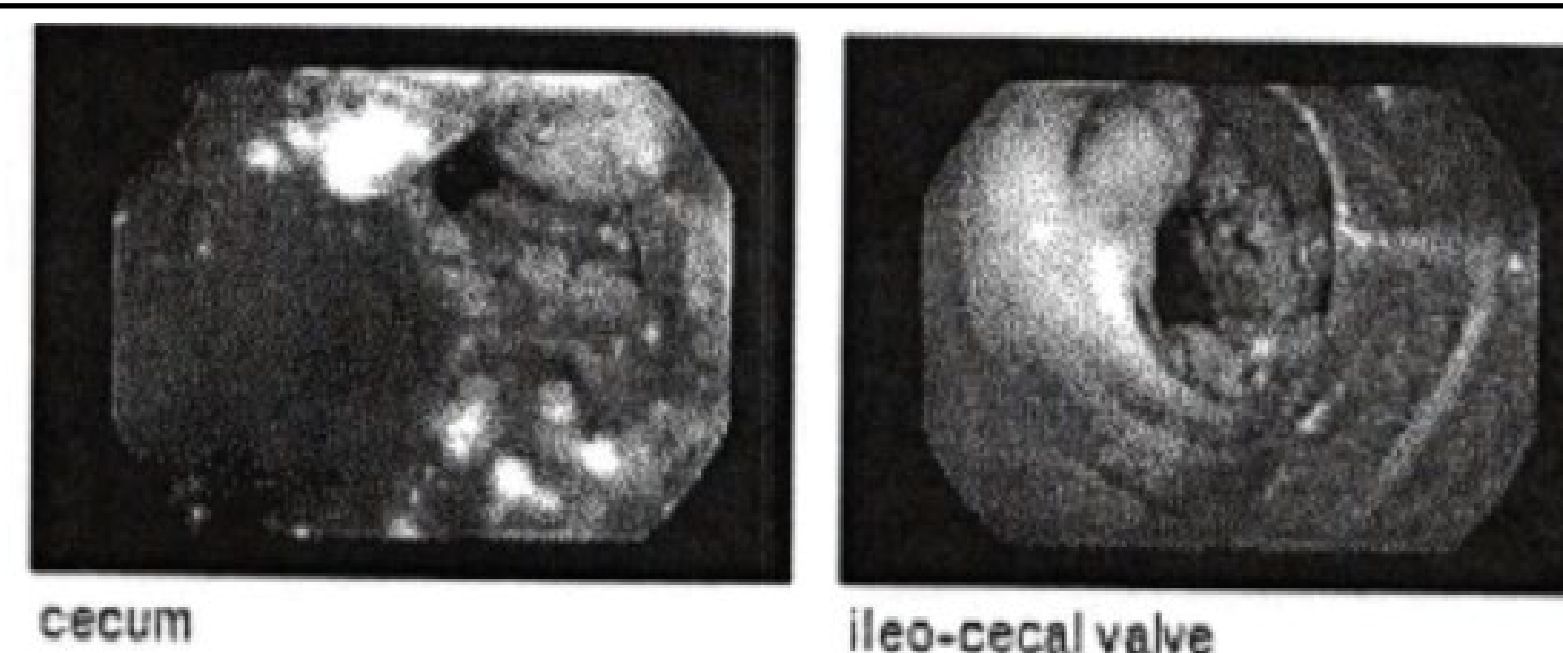
## Figure 1: PET CT pre-treatment



## Table 1: Immunohistochemical Stain w/ Ki-67 index

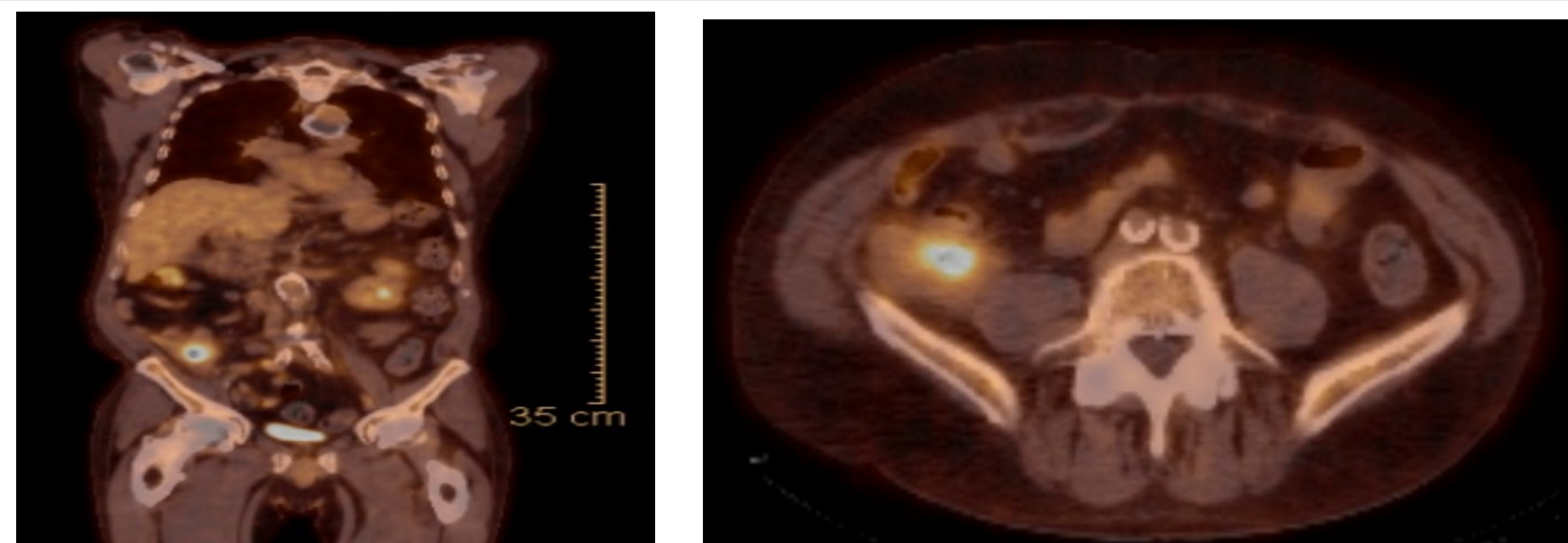
Ki-67 index is a way to describe how many cells are dividing or how fast a tumor is growing. It can be an independent prognostic factor for survival rate and provide information based on how aggressive a tumor is. In DLBCL, a cut-off value of 70% can distinguish patients with a good and bad prognosis when combined with other poor prognostic factors [5].

## Figure 2: Colonoscopy Findings



**FIGURE 1:** An infiltrative, ulcerated and fungating 5 cm mass with stigmata of recent bleeding of malignant appearance was found in the cecum. The mass caused a partial obstruction.

## Figure 3: PET CT post-treatment



## Results

At initial presentation, chest CT found new noncalcified nodules in both lungs, and further PET scan imaging revealed circumferential cecal colonic wall thickening with hypermetabolic activity [Figure 1], in addition to the bilateral metabolic pulmonary nodules. His last colonoscopy had been 3 years prior with only finding of benign polyps.

CT-guided biopsy of a pulmonary nodule was performed which revealed neoplastic cells positive for markers consistent with DLBCL [Table 1A]. The patient then underwent a colonoscopy which revealed a cecal mass [Figure 2] and subsequent cold forceps biopsies of that mass which confirmed the diagnosis of DLBCL [Table 1B].

1A: Pulmonary nodule cell positivity	1B: Cecal mass cell positivity
CD45	CD20
CD20	CD10
PAX5	BCL6
CD10	MYC (50%)
BCL6	
Ki-67 index = 75-80%	Ki-67 index = > 90%

The patient was definitively diagnosed with high-grade diffuse large B-cell lymphoma (DLBCL) with germinal center phenotype of colonic origin with metastasis to the lungs. The patient began treatment with R-CHOP-21 chemotherapy, and after the first two rounds of treatment, PET CT revealed significantly decreased size and metabolic activity of cecal mass with max SUV in the cecum measuring 8.7, which was previously 26.2 pre-treatment. He has tolerated the R-CHOP relatively well with only one episode of angina-type symptoms.

## Conclusions

This case highlights the treatment considerations for primary colorectal DLBCL in an older patient with underlying ischemic heart disease. Due to the rarity and severity of primary colorectal lymphoma, there is scarce literature regarding the outcome of chemotherapy treatment options, especially in patients with underlying risk factors like cardiac disease.

This case reports on the need for further research to improve prognosis and outcome of all patients with primary colorectal lymphoma.

# Primary Diffuse Large B-cell Lymphoma of the Cecum in a Patient with Underlying Ischemic Heart Disease

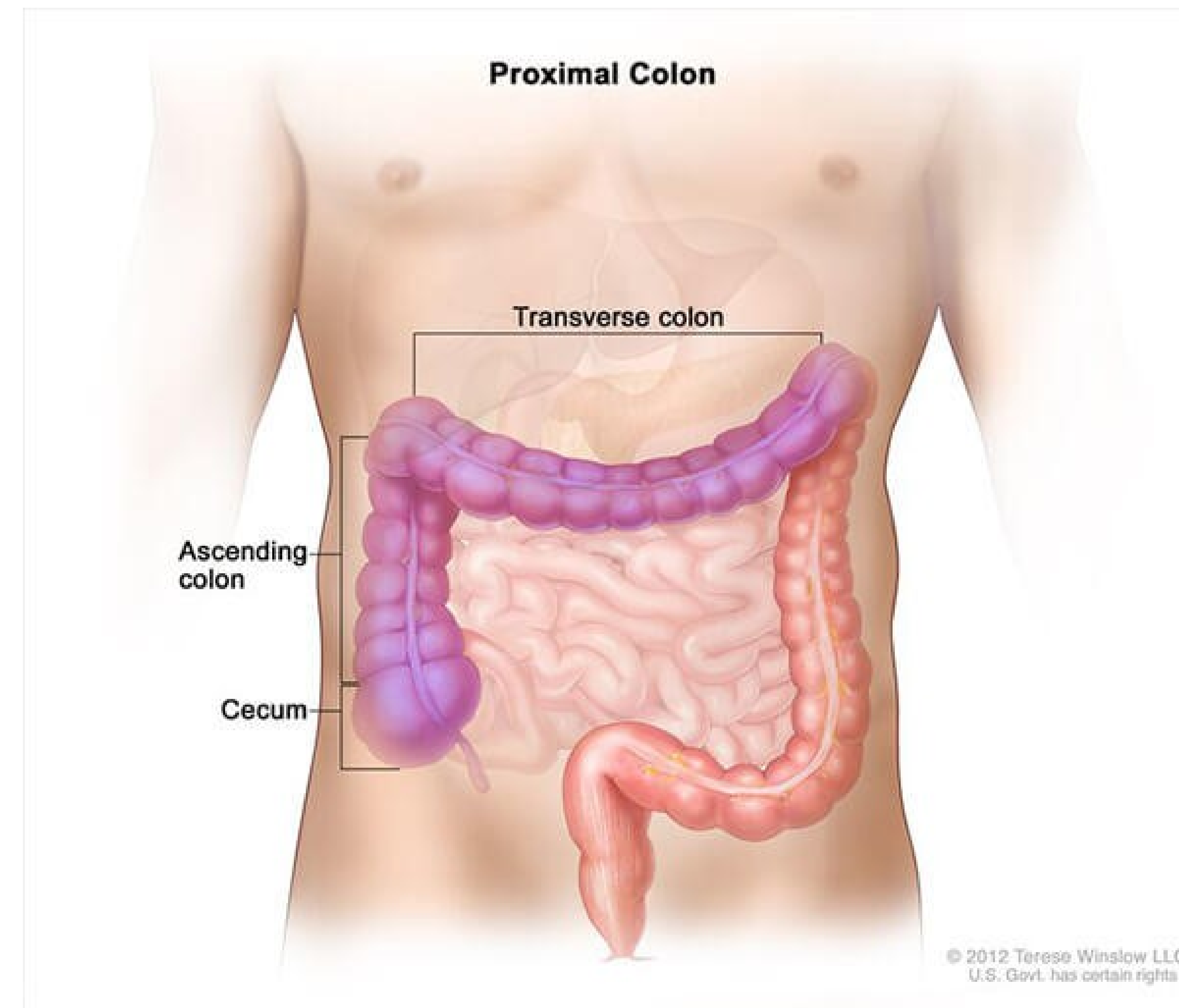
Lauren Gawey, Elizabeth Ellent MD, Agustin A Garcia MD.  
LSUHSC Department of Hematology/Oncology.



## Introduction

The GI tract is the predominant site of secondary extra-nodal non-Hodgkin lymphoma (NHL), however, primary lymphomas of the GI tract are rare, accounting for only 1-4% of malignancies arising in the stomach, small intestine, or colon [1,2]. Primary colorectal lymphoma is even more uncommon, accounting for only 0.3% of large intestinal malignancies and 3% of GI lymphomas [3]. The cecum is the most frequently affected area for primary colorectal lymphoma, and the most common subtype is diffuse large B-cell lymphoma (DLBCL).

The current recommended treatment regimen for advanced stage DLBCL is 6 cycles of R-CHOP (Rituximab, cyclophosphamide, doxorubicin, vincristine, and prednisone) chemotherapy spaced 21 days apart [4].



Credit: National Cancer Institute/ Terese Winslow

# Primary Diffuse Large B-cell Lymphoma of the Cecum in a Patient with Underlying Ischemic Heart Disease

Lauren Gawey, Elizabeth Ellent MD, Agustin A Garcia MD.  
LSUHSC Department of Hematology/Oncology.



## Method

We present a case of a 73-year-old Caucasian male with underlying ischemic heart disease and history of renal cell carcinoma who initially presented with pulmonary symptoms and findings of bilateral lung nodules. He was subsequently found to have primary diffuse large B-cell lymphoma of the proximal colon with metastasis to the lungs. He is currently being treated with R-CHOP-21 chemotherapy.

The cardiotoxic effects of doxorubicin must be accounted for in patients with cardiac disease, but there is limited data available that can be used to guide both prevention and management of cardiotoxicity. Additionally, there are no randomized trials for chemotherapy treatment of DLBCL that includes patients of underlying cardiac disease.

# Primary Diffuse Large B-cell Lymphoma of the Cecum in a Patient with Underlying Ischemic Heart Disease



Lauren Gawey, Elizabeth Ellent MD, Agustin A Garcia MD.  
LSUHSC Department of Hematology/Oncology.

## Results

At initial presentation, chest CT found new noncalcified nodules in both lungs, and further PET scan imaging revealed circumferential cecal colonic wall thickening with hypermetabolic activity [Figure 1], in addition to the bilateral metabolic pulmonary nodules. His last colonoscopy had been 3 years prior with only finding of benign polyps.

## PET CT



**FIGURE 1:**  
PET CT coronal and transverse sections showing hypermetabolic cecal colonic wall thickening.

# Primary Diffuse Large B-cell Lymphoma of the Cecum in a Patient with Underlying Ischemic Heart Disease



Lauren Gawey, Elizabeth Ellent MD, Agustin A Garcia MD.  
LSUHSC Department of Hematology/Oncology.

## Results

CT-guided biopsy of a pulmonary nodule was performed which revealed neoplastic cells positive for markers consistent with DLBCL [Table 1A]. The patient then underwent a colonoscopy which revealed a cecal mass [Figure 2] and subsequent cold forceps biopsies of that mass which confirmed the diagnosis of DLBCL [Table 1B].

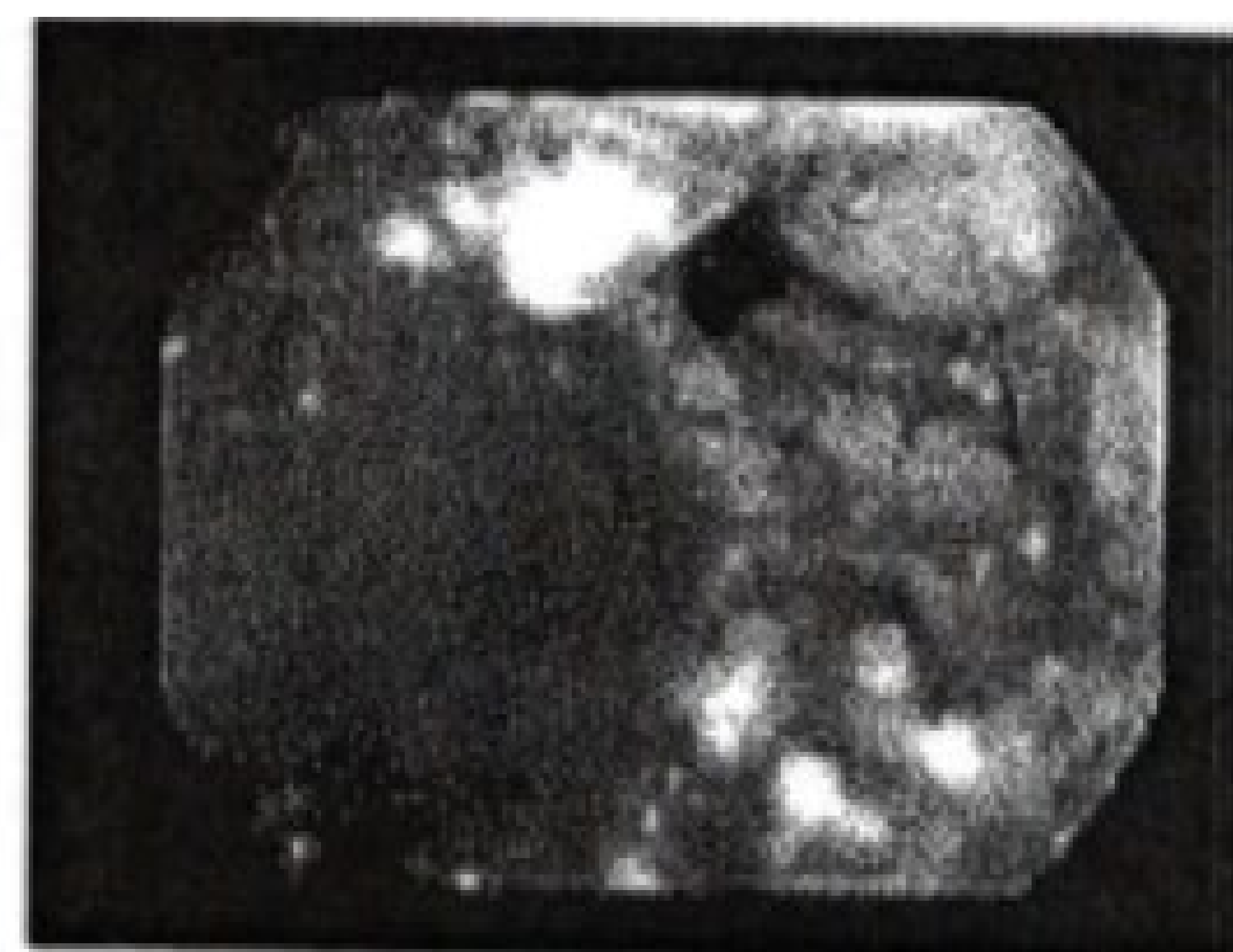
## Table 1: Immunohistochemical Stain

1A: Pulmonary nodule cell positivity	1B: Cecal mass cell positivity
CD45	CD20
CD20	CD10
PAX5	BCL6
CD10	MYC (50%)
BCL6	
Ki-67 index = 75-80%	Ki-67 index = > 90%

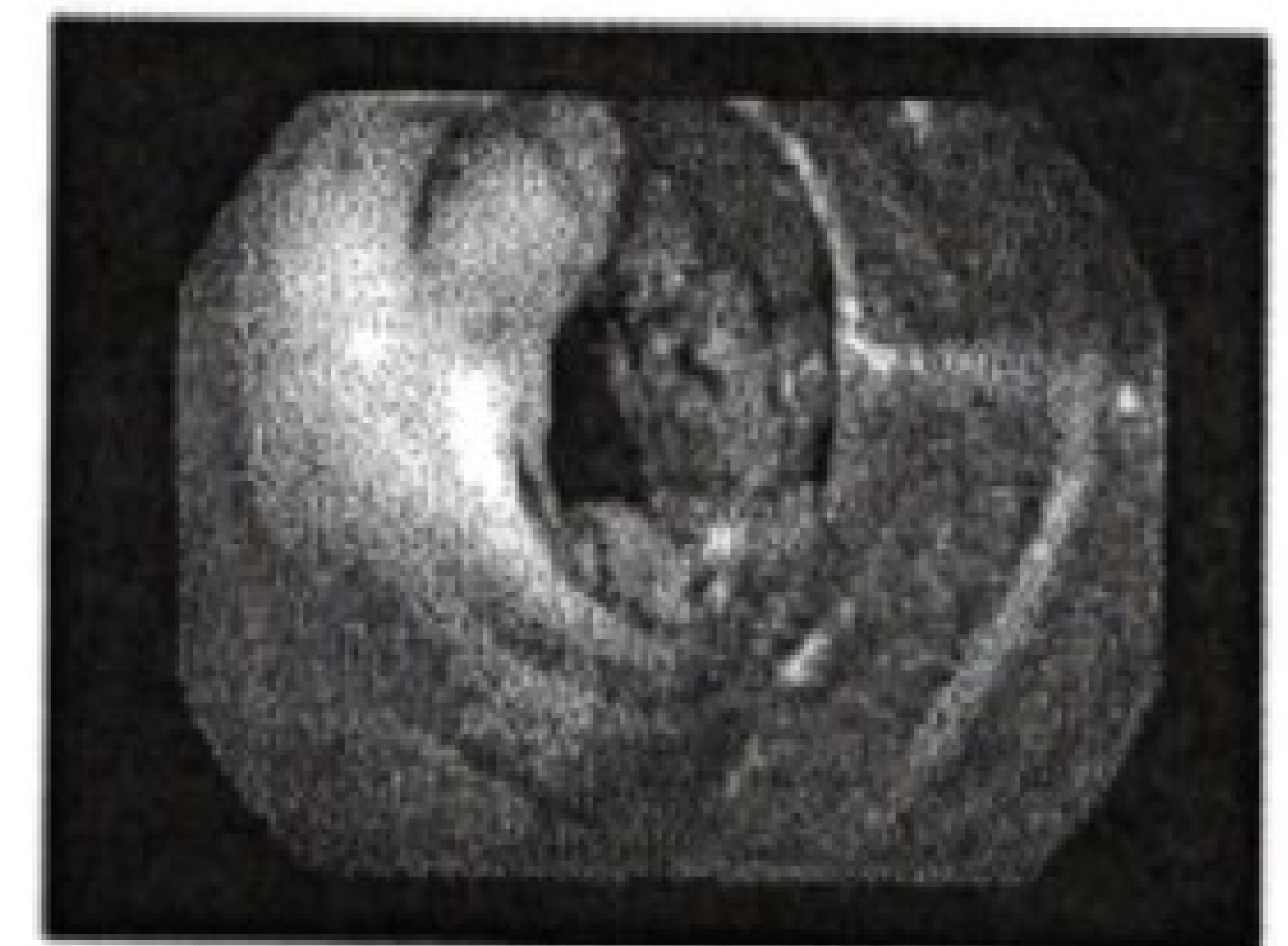
Ki-67 index is a way to describe how many cells are dividing or how fast a tumor is growing. It can be an independent prognostic factor for survival rate and provide information based on how aggressive a tumor is. In DLBCL, a cut-off value of 70% can distinguish patients with a good and bad prognosis when combined with other poor prognostic factors [5].

## Figure 2: Colonoscopy Findings

**FIGURE 2:** An infiltrative, ulcerated and fungating 5 cm mass with stigmata of recent bleeding of malignant appearance was found in the cecum. The mass caused a partial obstruction.



cecum



ileo-cecal valve

# Primary Diffuse Large B-cell Lymphoma of the Cecum in a Patient with Underlying Ischemic Heart Disease

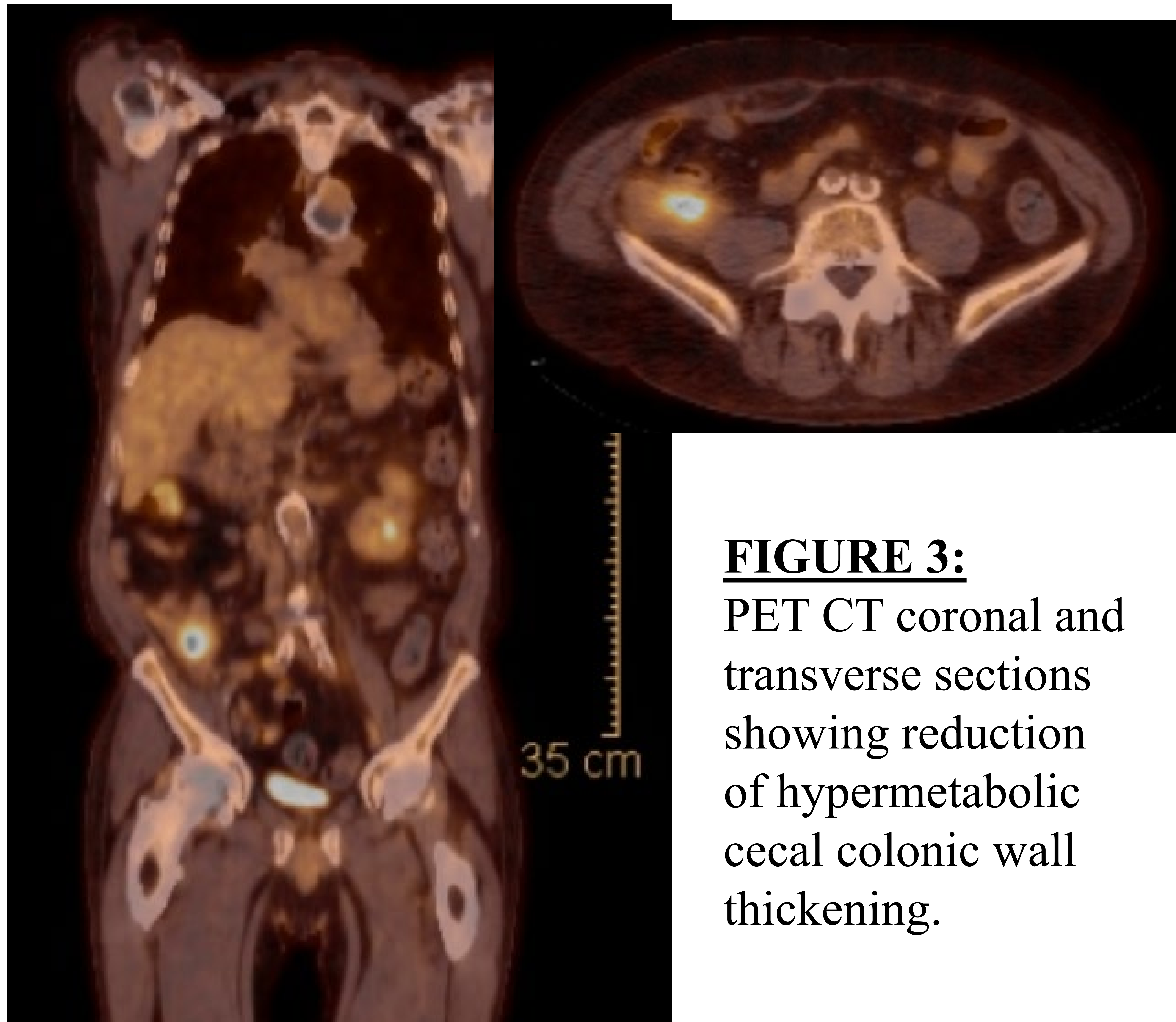


Lauren Gawey, Elizabeth Ellent MD, Agustin A Garcia MD.  
LSUHSC Department of Hematology/Oncology.

## Results

The patient was definitively diagnosed with high-grade diffuse large B-cell lymphoma (DLBCL) with germinal center phenotype of colonic origin with metastasis to the lungs. The patient began treatment with R-CHOP-21 chemotherapy, and after the first two rounds of treatment, PET CT revealed significantly decreased size and metabolic activity of cecal mass with max SUV in the cecum measuring 8.7, which was previously 26.2 pre-treatment [Figure 3]. He has tolerated the R-CHOP relatively well with only one episode of angina-type symptoms.

## PET CT s/p 2 cycles of R-CHOP



**FIGURE 3:**  
PET CT coronal and transverse sections showing reduction of hypermetabolic cecal colonic wall thickening.

# Primary Diffuse Large B-cell Lymphoma of the Cecum in a Patient with Underlying Ischemic Heart Disease

Lauren Gawey, Elizabeth Ellent MD, Agustin A Garcia MD.  
LSUHSC Department of Hematology/Oncology.



## Conclusions

This case highlights the treatment considerations for primary colorectal DLBCL in an older patient with underlying ischemic heart disease. Due to the rarity and severity of primary colorectal lymphoma, there is scarce literature regarding the outcome of chemotherapy treatment options, especially in patients with underlying risk factors like cardiac disease.

This case reports on the need for further research to improve prognosis and outcome of all patients with primary colorectal lymphoma.