

# Classic Hodgkin Lymphoma Confounded by an Initial Misdiagnosis on Whole Lymph Node Biopsy

Matthew Koury<sup>1</sup>, Obed Agyei<sup>2</sup>, Yanmin Zhang<sup>3</sup>, Vlasta Zemba-Palkoc<sup>3</sup>, Zonera Ali<sup>2</sup>

1. Department of Internal Medicine, Lankenau Medical Center, Wynnewood, PA

2. Department of Hematology and Oncology, Lankenau Medical Center, Wynnewood, PA

3. Department of Pathology, Lankenau Medical Center, Wynnewood, PA



## Introduction

Hodgkin Lymphoma is a rare type of cancer with an excellent prognosis. The gold standard for diagnosing this disease is a complete surgical lymph node biopsy, with the presence of Reed Sternberg cells on histology confirming the diagnosis [1]. On the other hand, tattoo lymphadenopathy is a benign reactive process where tattoo pigments migrate to the regional lymph nodes. While it is relatively rare, it can potentially confound the diagnosis of conditions like Hodgkin Lymphoma, as the pigment can be mistaken for pathological changes on lymph node biopsies [2].

## Case Presentation

A male in his late 30s with no significant medical or family history was referred to the oncology clinic after a Complete Blood Count (CBC) showed leukocytosis, thrombocytosis, and anemia (Table 1). The patient also had an elevated Erythrocyte Sedimentation Rate (ESR) of 47 mm/hr. Symptoms included fatigue, night sweats, a 40-pound weight loss over six months, intermittent fevers, and shortness of breath. Physical examination revealed firm and fixed axillary and inguinal lymphadenopathy with an enlarged spleen. Initially, chronic myelogenous leukemia (CML) and Hodgkin lymphoma were concerning differentials.

A bone marrow biopsy performed showed hypercellularity but no other abnormalities. A CT scan of the chest abdomen and pelvis revealed prominent generalized lymphadenopathy. The first complete right axillary excisional lymph node biopsy indicated a benign reactive lymph node with paracortical hyperplasia and pigment compatible with tattoo lymphadenopathy (Fig 1), leading to rheumatology and infectious disease evaluation given persistent worsening symptoms and a rising ESR. A repeat right cervical lymph node biopsy was performed five months later, which diagnosed classic Hodgkin lymphoma favoring a nodular-sclerosis subtype (Fig 2). An initial PET scan was performed (Fig 3) showing Hypermetabolic lesions were also noted in the osseous structures and the liver (Fig 3). The patient began chemotherapy with doxorubicin hydrochloride (Adriamycin), bleomycin sulfate, vinblastine sulfate, and dacarbazine (ABVD). A repeat PET scan two months after initiating treatment revealed marked improvement with no increased fludeoxyglucose (FDG) in the chest, abdomen, pelvis, or liver. The patient's ESR decreased and normalized to 4 mm/hr after proper treatment was initiated as well. The patient has now completed his treatment course with no evidence of recurrence.

## Clinical Presentation

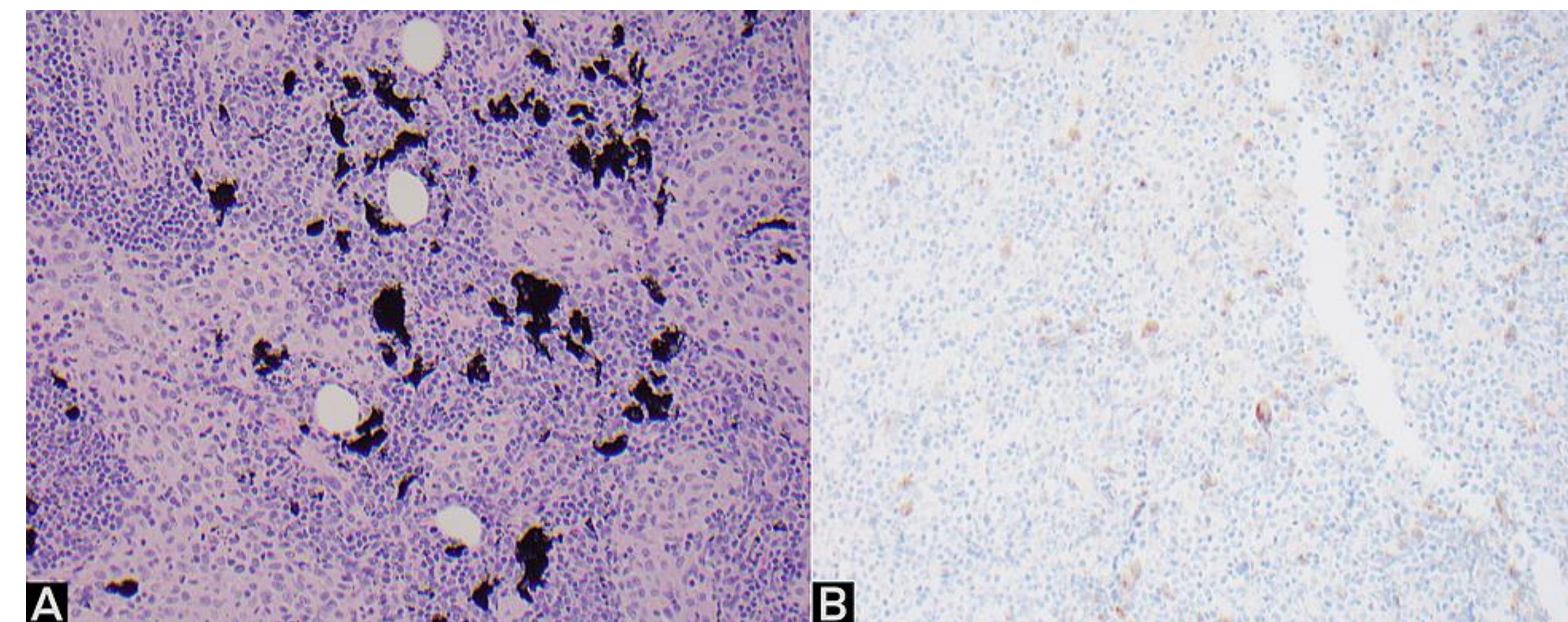


Figure 1: The initial right axillary lymph node biopsy. H&E 20x image of the sample with the black demonstrating tattoo ink (A), and CD30 staining (B)

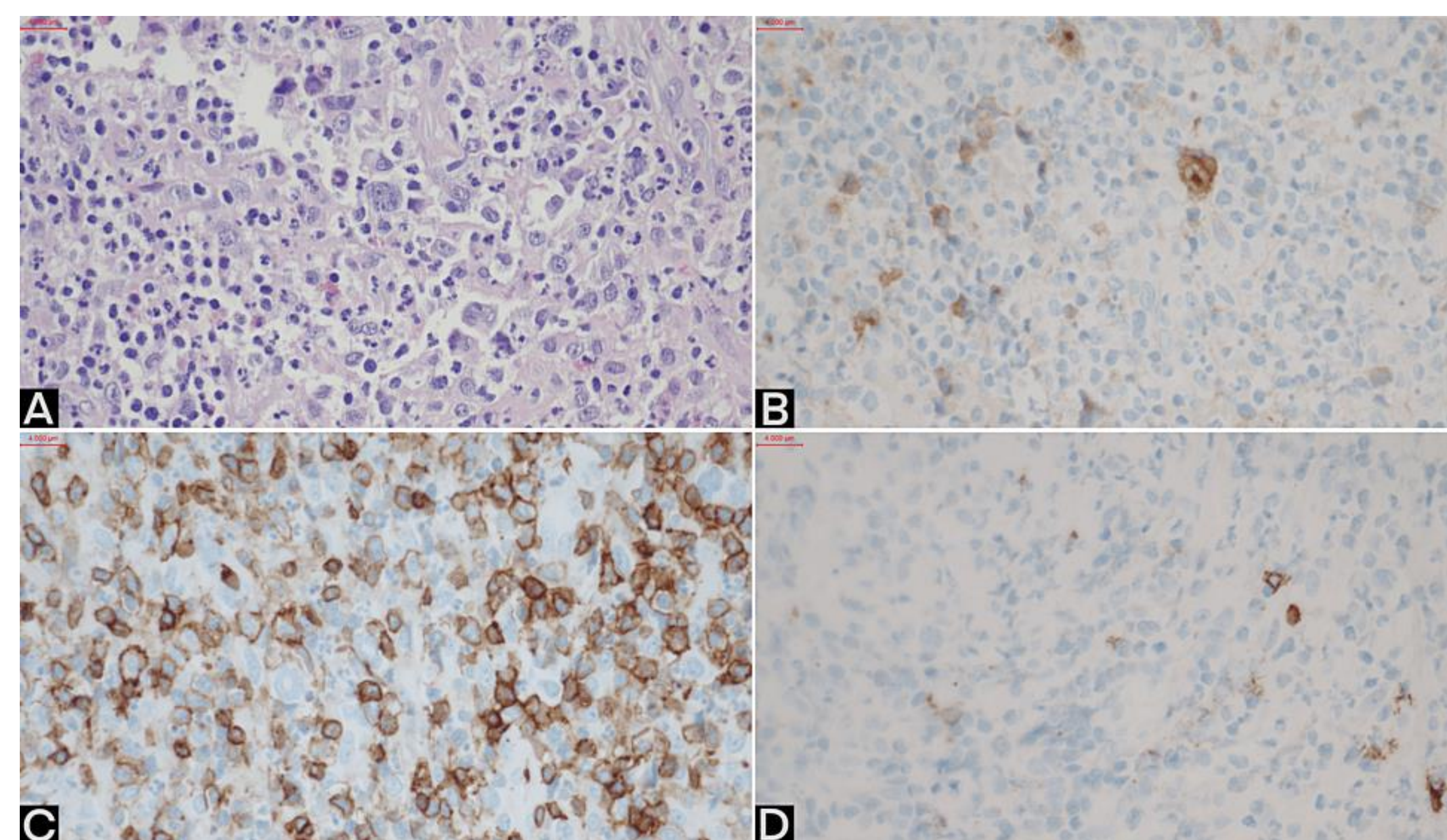


Figure 2: The repeat right cervical lymph node biopsy. H&E 40x image of the sample (A), CD30 staining (B), CD45 staining (C), and CD20 staining (D)

## Laboratory Values

Labs	Value	Ref Range
White Blood Cells	20.7	3.80-10.5 K/uL
Hemoglobin	10.5	13.7-17.5 g/dL
Hematocrit	35.8	40.1-51%
Platelets	797	150-250 K/uL

Table 1: Initial laboratory values obtained from complete blood count

## PET Scan

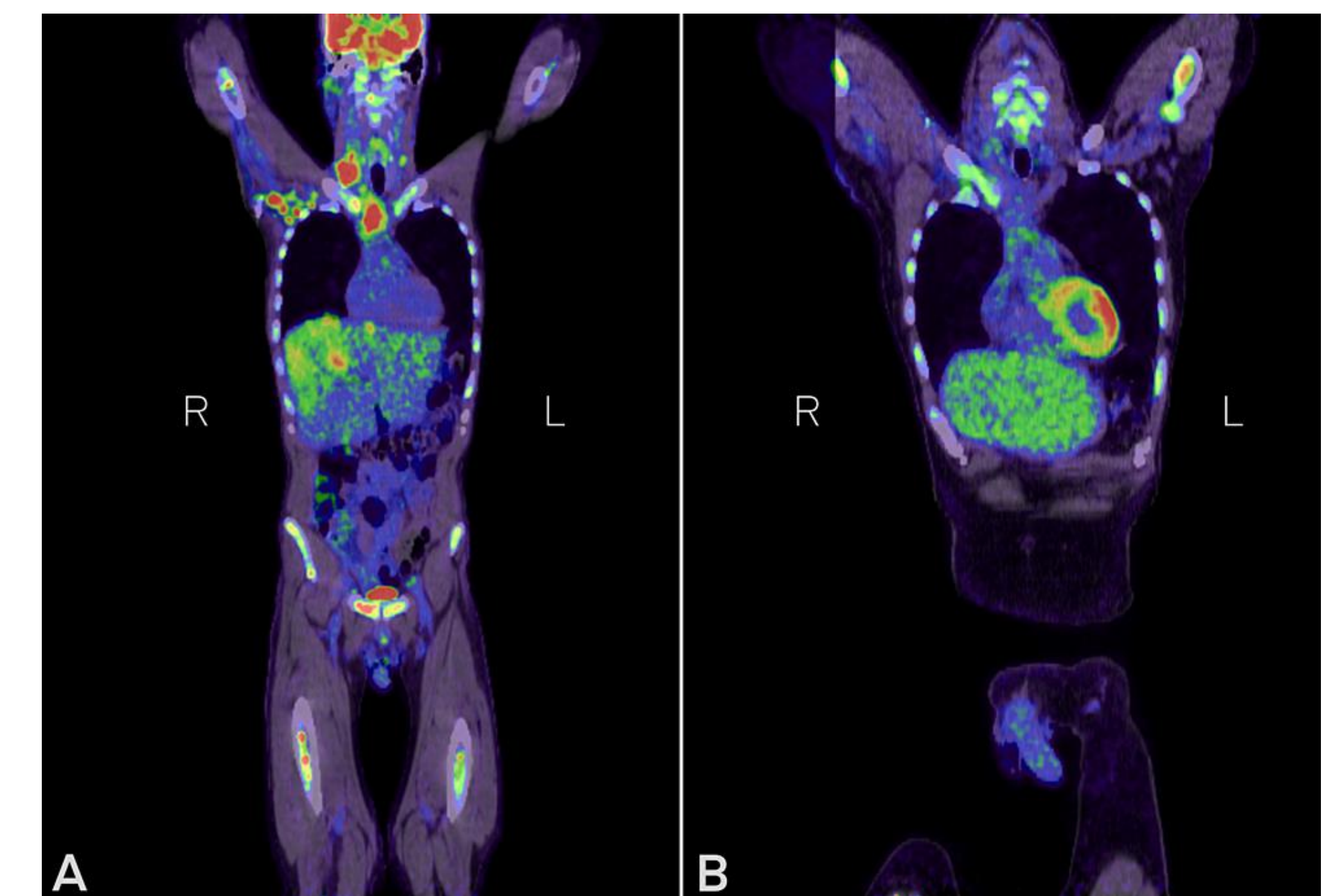


Figure 3: PET scans before (A) and after (B) initiation of chemotherapy

## Discussion and Conclusion

Misdiagnosis of lymphoma following a complete excisional biopsy is rare, with no primary literature on false negatives in lymphoma diagnoses by this method. The accuracy of newer techniques like core needle biopsy is approximately 95% [3]. Potential reasons for initial misdiagnosis include errors in sample preservation and histopathology analysis, although these were unlikely in this case given the experience and reliability of the professionals involved [4]. Unknown steroid use was also considered. The most likely cause of this delay in diagnosis was preexisting tattoo lymphadenopathy in addition to true Hodgkin Lymphoma. The implications of a delayed diagnosis include delayed management and potentially increased morbidity and mortality, although specific prognostic data is lacking on the latter [5].

This case emphasizes the importance of maintaining a high suspicion for Hodgkin Lymphoma despite ambiguous biopsy results if the symptoms strongly suggest that diagnosis. Even with complete surgical biopsy being the gold standard, instances of tattoo lymphadenopathy can lead to diagnostic challenges. Repeat biopsy should be considered in symptomatic cases to avoid delays in effective treatment, although the long-term prognostic implications of such delays are unclear.

## Acknowledgments

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## References

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