CASE REPORT

Navigating the Diagnostic Dilemma of Hodgkin Lymphoma in Adolescents: A Primary Care Perspective

Aneesa Abdul Rashid[1], Noor Faridzatul Ain Mohd Noor[1,2]

ABSTRACT

Hodgkin lymphoma (HL) is a type of lymphoma that accounts for around 7% of childhood cancers, most common in adolescents aged 15 to 19.(1) This case report describes the clinical presentation, diagnosis, and management of a 17-year-old male diagnosed with HL, highlighting the impact on his education, peer relationships, and the psychosocial challenges faced by his family. The case emphasizes the importance of early detection, effective management strategies, and the role of primary care in ensuring comprehensive care and support for patients with HL. Challenges related to teleconsultation and the importance of psychosocial support are also discussed.

Keywords: adolescents, mediastinal mass, psychosocial support, primary care, diagnostic challenges

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INTRODUCTION

Hodgkin lymphoma (HL) is a malignancy of the lymphatic system that primarily affects adolescents and young adults, accounting for about 10% of all lymphomas.(1) HL is characterized by the presence of Reed-Sternberg cells and can be classified into classic Hodgkin lymphoma (CHL) and nodular lymphocyte-predominant Hodgkin lymphoma (NLPHL).(2) Among these, the nodular sclerosis subtype of CHL is most prevalent in adolescents.(1)

Despite its high cure rate, early diagnosis and timely management of HL are crucial for preventing complications and improving long-term outcomes. The non-specific symptoms of HL, such as fever, night sweats, weight loss, and persistent cough, can easily mimic more common conditions like infections or tuberculosis, particularly in resource-limited settings, leading to delayed diagnosis.(1) Adolescents with HL often present with a mediastinal mass, and symptoms can vary depending on the size and location of the mass, complicating clinical recognition.(3)

Primary care providers play a vital role in early detection and appropriate referral of suspected HL cases. Delays in diagnosis can occur due to the overlap of HL symptoms with more common conditions, emphasizing the importance of maintaining a broad differential diagnosis and ensuring timely referral to specialized care. This case report explores the diagnostic challenges and the critical role of primary care in managing a 17-year-old male with HL, including the psychological and social impacts of the disease on the patient and his family.(4)

1. Department of Family Medicine, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor.
2. Department of Family Medicine, Hospital Sultan Abdul Aziz Shah (HSAAS), Persiaran Mardi-UPM, 43400 Serdang, Selangor.

Correspondence to: Aneesa Abdul Rashid, Department of Family Medicine, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor. E-mail: aneesa@upm.edu.my

CASE REPORT

A 17-year-old Malay male presented to the primary care clinic with a one-month history of persistent cough, unintentional weight loss of 5 kg, night sweats, and intermittent low-grade fever. The cough was non-productive and more pronounced at night, with associated fatigue and generalised weakness affecting his daily activities and school attendance. There were no haemoptysis, dyspnoea, or chest pain but had reduced appetite. The patient had no significant past medical history and was previously healthy with no known medical illnesses.

On physical examination, the patient had mild pallor but was not in respiratory distress. His vital signs were stable with a temperature of 37.8°C, pulse rate of 88 beats per minute, his respiratory rate of 18 breaths per minute, and his blood pressure of 110/70 mmHg. The oxygen saturation was 98% on room air. No peripheral lymphadenopathy was observed, and cardiovascular and abdominal examinations were unremarkable. The respiratory examination revealed dullness to percussion and decreased breath sounds and over the left mid to lower lung zones.

Basic investigations were performed, including a full blood count, which showed mild anaemia (haemoglobin 10.2 g/dL) and a raised erythrocyte sedimentation rate (ESR) of 80 mm/hr. A chest X-ray revealed a left-sided pleural effusion and a widened mediastinum, raising concern for a mediastinal mass. The patient was referred to a tertiary centre urgently after the discovery of pleural effusion on his chest X-ray.

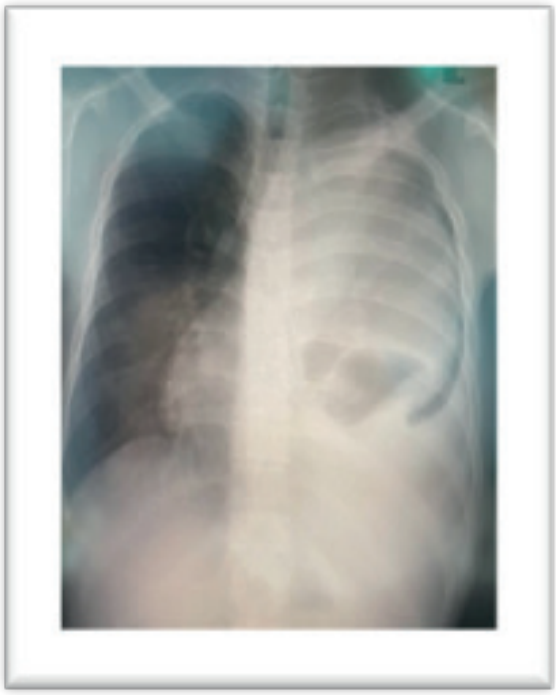

Figure 1: Chest x-ray

However, due to transportation issues and his father being unable to take time off work, the patient could not go to the hospital. The family also believed that his condition would improve with a course of antibiotics, as they were initially informed that the symptoms might be due to an infection.

Unfortunately, a week later, the patient's condition worsened, with a persistent cough, worsening shortness of breath, and increasing fatigue affecting his daily activities and school attendance. He was brought to the tertiary centre, thoracentesis was performed, and analysis of the pleural fluid showed an exudative pattern with a lymphocytic predominance. A CT scan of the thorax revealed a large anterior mediastinal mass measuring 8 cm x 5 cm, along with multiple enlarged mediastinal and hilar lymph nodes. An ultrasound-guided core needle biopsy of the mediastinal mass confirmed a diagnosis of classic Hodgkin lymphoma, nodular sclerosis type.

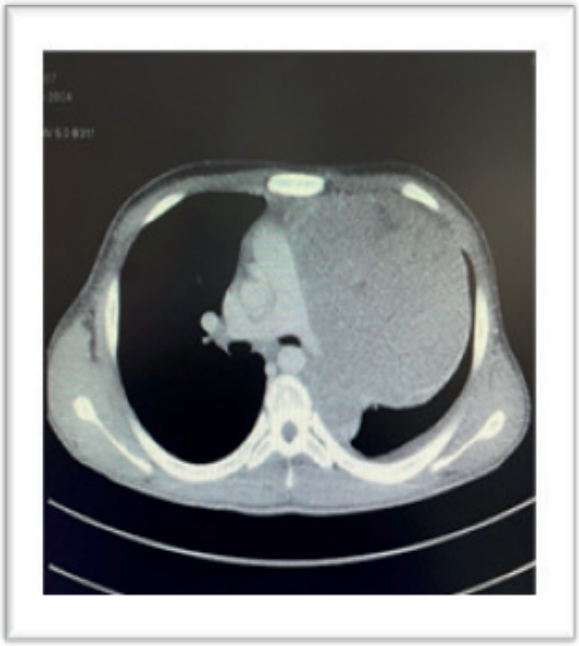

Figure 2: CT thorax

The patient was staged as IIB (Ann Arbor classification) due to the presence of B symptoms

(fever, night sweats, and weight loss) and mediastinal involvement. He was referred to an oncologist and commenced chemotherapy. The patient underwent four cycles of chemotherapy over six months. During the treatment, he experienced common side effects, including nausea, hair loss, and mild neutropenia, which were managed supportively. He was also provided with psychosocial support to address his concerns regarding missed schooling, and peer relationships.

By the end of chemotherapy, a PET-CT scan showed no evidence of active disease, and the patient was deemed to be in complete remission. He continues to attend regular follow-up appointments for surveillance and management of potential long-term effects of treatment.

DISCUSSION

Role of Primary Care in Early Recognition and Differential Diagnosis: This case demonstrates the challenges in distinguishing Hodgkin lymphoma (HL) from more common conditions such as tuberculosis, especially when presenting symptoms overlap. The initial suspicion of tuberculosis led to a delay in considering HL, emphasizing the importance of maintaining a broad differential diagnosis in adolescents with non-specific symptoms. (5) The decision to perform a chest X-ray in the primary care setting was to identify the mediastinal mass, prompting further investigation and referral. (3) Prompt referral to tertiary care is crucial in managing HL, particularly when initial treatments fail to yield improvement. In resource-limited settings, delays in referral due to logistical challenges, such as transportation issues, can significantly impact outcomes. Effective care coordination that addresses these barriers is vital in ensuring timely diagnosis and treatment, underscoring the need for systems that support urgent referrals.(6)

In the early stages, common diagnoses like pulmonary tuberculosis (PTB) are often considered due to non-specific symptoms such as cough, weight loss, and fever, especially in resource-limited settings. However, in this case, maintaining a high index of suspicion for HL was crucial when symptoms persisted despite treatment. The chest X-ray revealed pleural effusion and widened mediastinum, key findings that shifted the diagnostic focus from infections like PTB to the likelihood of malignancy, warranting further investigation.

Importance of Initial Investigations and Decision-Making: The initial decision to conduct a chest X-ray was critical in this case.(5) Primary care providers must be vigilant in deciding when to escalate investigations, particularly in young patients with persistent symptoms unresponsive to standard treatments. (2) Identifying the mediastinal mass and pleural effusion on imaging warranted a timely referral for advanced diagnostics, highlighting the importance of primary healthcare providers in interpreting initial test results and recognizing when more advanced imaging, such as CT scans, and pleural fluid analysis is required.(3)

Coordination of Care and Managing Logistical Challenges: Primary care plays a fundamental role in coordinating care across different levels of the healthcare system, particularly for conditions like HL that require multidisciplinary management. (7) In this case, logistical challenges delayed the patient's evaluation at a tertiary centre.(6) Primary healthcare providers are well-positioned to identify these barriers and facilitate smoother care transitions through direct communication with specialists, arranging transport, or leveraging teleconsultation platforms. (8) Effective coordination helps prevent delays that could compromise patient outcomes.(6) While HL management typically occurs in specialized centers, primary care providers are crucial in ongoing monitoring and supportive care.(7) This includes managing side effects of chemotherapy, such as neutropenia, nausea, and fatigue, and providing continuity of care through regular follow-up and adherence to treatment plans. Integrated care models that foster collaboration are essential for optimal patient outcomes.

Addressing Psychosocial Needs: Adolescents with cancer face unique psychosocial challenges that can significantly impact their mental health, education, and social lives. (9) Primary care providers, familiar with the patient's and family's context, are ideally placed to coordinate psychosocial support. (10) In this case, addressing the patient's educational disruptions, peer relationship challenges, and psychological well-being was essential for comprehensive care. Holistic management involves not only treating the disease but also supporting the patient and family emotionally and socially through structure,

particularly in adolescents, extending beyond the physical symptoms of the disease. The patient faced challenges with missed schooling, strained peer relationships, and concerns about his future. Primary care providers, familiar with the patient's family context, are ideally positioned to coordinate psychosocial support. Structured interventions, such as counselling, support groups, and school reintegration programs, are essential in supporting the adolescent's emotional and social well-being throughout treatment and recovery.

CONCLUSION

This case highlights the critical role of early recognition and prompt intervention in managing Hodgkin lymphoma, especially in adolescents. Primary healthcare providers must maintain a high index of suspicion for malignancies when faced with persistent, non-specific symptoms such as cough, weight loss, and fatigue, particularly when initial treatments fail. The case underscores the importance of timely referrals to tertiary care and the need for coordinated, multidisciplinary management. Moreover, it brings attention to the logistical challenges that can delay treatment, particularly in resource-limited settings, and emphasizes the need for primary care providers to address these barriers proactively. Psychosocial support for both the patient and family is also crucial, ensuring a holistic approach to cancer care that not only treats the disease but also supports the patient's emotional, educational, and social well-being. Through such integrated care, long-term outcomes can be improved, minimizing delays that could affect prognosis.

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Conflict of interest none

Ethical clearance A verbal consent was obtained from the patient's parents and patient for discussing the case for publication.

Authors' contribution NFA treated the patient. AAR and NFA wrote the initial draft of the article. All authors contributed to the write up and discussion of the case manuscript. AAR wrote the final draft. All authors have critically reviewed and approved the final draft and are responsible for the content and similarity index of the manuscript.

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