

## Case Report

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# A Case Report of Synchronous Primary Gastric Hodgkin Lymphoma and Lung Adenocarcinoma and Literature Review

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### Abstract:

We report a rare case of a 58-year-old woman who was initially diagnosed as primary gastric (PG) T-cell non-Hodgkin lymphoma, which later was revised as PG Hodgkin lymphoma (HL) with dissemination to the lung (stage IV). The lung lesion was later found to be lung adenocarcinoma (LA) and the diagnosis was revised again as synchronous primary gastric Hodgkin lymphoma (PGHL) and LA which, to our knowledge, was not reported before. This case illustrated the need of vigilance in the diagnosis of lymphoma at uncommon sites and the clinical challenges in managing synchronous malignancies. The rationale of clinical suspicion, the association between PGHL and Epstein-Barr virus, *Helicobacter pylori*, and other infections, and synchronous PGHL and LA were discussed.

### Keywords:

Extranodal, gastric, Hodgkin lymphoma, lung adenocarcinoma, synchronous

## Introduction

Lymphoma constitutes about 1.2%<sup>[1]</sup> to 12%<sup>[2]</sup> of gastric malignancies. Lymphoma commonly presents as a nodal disease, while sometimes it may arise from an extranodal site – the primary extranodal lymphoma (PENL). The definition of PENL is controversial for two reasons. First, the sites to be considered extranodal, for example, some regard spleen and Waldeyer's ring as extranodal. However, gastric is less controversial to be regarded as extranodal. Second, in stages III and IV, it is difficult to differentiate primary nodal disease with the disseminated extranodal site or PENL with lymph nodes (LN) metastasis.<sup>[3]</sup>

PENL is rare in Hodgkin lymphoma (HL) but more common in non-HL (NHL), about 25% to 35%,<sup>[4]</sup> in which gastric is the most common,<sup>[1]</sup> about 3% to 10%.<sup>[4]</sup> Primary gastric (PG) HL (PGHL) is much rarer than

PGNHL which is about 90% to 97%<sup>[1,5-8]</sup> of PG lymphoma. During a PubMed search, we identified 93 studies of PGHL, in which the earliest case report identified was 1946.<sup>[9,10]</sup> Of note, Reed–Sternberg cells were described, and HL was emphasized to be unrelated to tuberculosis by Dorothy Mabel Reed Mendenhall in 1902.<sup>[11]</sup>

Lung cancer is the third most common cancer in women in Malaysia with an age-standardized rate of 5.9<sup>[12]</sup> and only 3% were diagnosed at stage I.<sup>[13]</sup>

In this case report, we present a rare case of synchronous PGHL and lung adenocarcinoma (LA) which was diagnosed after a series of events and, to our knowledge, was not reported before.

## Case Report

In May 2019, a 58-year-old woman from a neighboring country, nonsmoker and with no known illness, presented with progressive weight loss of 22 kg over a

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