Chapter 1
Historical Review

ABSTRACT

Hashimoto thyroiditis (HT) is part of the spectrum of autoimmune thyroid diseases characterized by the destruction of thyroid cells by various cell- and antibody-mediated immune processes. It was first described by the Japanese surgeon Hakaru Hashimoto (1981-1934). It was not until 1956 when a link between antibodies to thyroid cells present in the serum of patients and HT was made. Over time, our understanding of the immunologic pathways involved in HT has evolved. We now recognize the association of this disease with other autoimmune diseases and thyroid cancer. The increasing use of the needle biopsy and serologic tests for antibodies have led to much more frequent recognition, and there is reason to believe that it may be increasing in frequency. It is now one of the most common thyroid disorders. This chapter gives a historical overview of Hashimoto's disease.

INTRODUCTION

Hashimoto thyroiditis is part of the spectrum of autoimmune thyroid diseases (AITDs), which include also the following variants; atrophic thyroiditis, juvenile thyroiditis, post-partum thyroiditis (PPT), silent thyroiditis, and focal thyroiditis (Fava et al., 2009).

Hashimoto disease (or Hashimoto's thyroiditis) is characterized by the destruction of thyroid cells by various cell- and antibody-mediated immune processes. It is the most common cause of hypothyroidism in the United States

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after age 6 years. By strict criteria, Hashimoto thyroiditis is a histological diagnosis first described by the Japanese surgeon, *Hakaru Hashimoto.*

Hakaru Hashimoto (Figure 1) was born on May 5, 1881, in the village of Midai, Nishitsuge, in Mie Prefecture, Japan. He graduated from Kyushu University Medical School in 1907. He then entered the First Surgical Bureau and studied medicine under the direction of Professor Hayari Miyake (1867–1945), the first Japanese neurosurgeon. Several years after, he studied pathology under Professor Eduard Kaufmann at the Georg-August University of Göttingen.

Hakaru Hashimoto also studied in England, but with breaking out of World War I, he was forced to return home to Japan. In 1916, he came back to his hometown, Igamachi, and became the town doctor. Hashimoto was the surgeon who first described lymphocytic thyroiditis, which became known later as "Hashimoto's thyroiditis".

The year 2013 marked the centennial anniversary of his original description of "*struma lymphomatosa*;" his observation of unique histologic features, including lymphocytic infiltration, eosinophilic change to follicular cells, and interstitial fibrosis that were described in four women with goiters, were treated with thyroidectomy (Fava et al., 2009). His work was published in a German journal in 1912 and went unnoticed for over 40 years. At the time of his original description, Hashimoto realized that some stimulus was responsible for the reactive changes he noticed, but he admitted that he did not know the nature of that stimulus. Due to his sudden death in January 9, 1934 (at the age of 52) because of typhoid fever, he was never able to witness the impact of his discovery.

It was not until 1956 when a link between antibodies to thyroid cells present in the serum of patients and Hashimoto's disease was made. Hashimoto's disease was the *first organ* in which an immune etiology to a specific disease process was described. Over time, our understanding of the immunologic pathways involved in Hashimoto's thyroiditis has evolved. We now recognize the association of this disease with other autoimmune diseases and thyroid cancer (Nagar & Angelos, 2015).

The disease has been called Hashimoto's thyroiditis, chronic thyroiditis, lymphocytic thyroiditis, lymphadenoid goiter, and recently, autoimmune thyroiditis. Classically, it presents as a painless, diffuse enlargement of the thyroid gland in a young or middle-aged woman. It is often associated with hypothyroidism. The disease was thought to be uncommon for many years, and the diagnosis was usually made by the surgeon intra-operatively or by the pathologist after thyroidectomy. The increasing use of the needle biopsy