

Case Report

CASE REPORT - PEMBERTON'S SIGN IN RETROSTERNAL GOITRE

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ABSTRACT

Objective: To report and add on to the already existing data on Pemberton's Sign. **Observation:** A 68-year-old man with a 15-year history of redness of face whenever he tried to comb his hair and tie his turban in the mornings. At that time patient also experienced breathless ness which worsened with time spent combing and tying the turban. Patient also gave history suggestive of choking and stridor during these times. Physical examination revealed a diffusely enlarged thyroid gland. There were no palpable thyroid nodules, but the lower poles of the thyroid were not palpable. The thyroid was felt extending into and behind the sternum. On swallowing the lower pole of the thyroid could not be felt.

Patient was asked to raise his hands above his head and within 25 seconds of raising both the arms (Pemberton's maneuver), he developed marked plethora of face, (Pemberton's sign). This sign is suggestive of compression of the jugular veins. The patient's Thyroid Function Test (FT3, FT4 and TSH) was normal. Computed tomography (Non Contrast Enhanced) of neck and upper thorax revealed a large goiter of the left thyroid lobe and isthmus. The left jugular vein and common carotid artery were compressed and pushed postero laterally due to mass effect of the enlarged thyroid.

The patient underwent thyroidectomy, and became totally asymptomatic. Histological Examination of the excision biopsy revealed a multinodular goiter. **Conclusion:** Pemberton's sign is usually found in patients with a large retrosternal goiter (O'Brien *et al.*, 2003). It may also be seen in other large mediastinal mass (Basaria and Salvatori, 2004). This sign was named after Hugh Spear Pemberton who first described the sign in 1946 (Pemberton, 1946). The Pemberton maneuver is a very useful part of bedside examination, especially when one is evaluating neck swellings like retrosternal goiter or mass or tumor. Pemberton sign indicates compression of vascular structures in the thoracic inlet urgent surgical treatment should be sought to relieve the pressure effects of massive retrosternal goiter or mass (O' Brien *et al.*, 2003; Jae and Wayne, 2010; Steven, 2012; William *et al.*, 2006 and Pearce and Braveman, 2004). Non Contrast Computed tomography should be performed to evaluate large goiters. Contrast-enhanced Computed tomography may be contraindicated in patients with large goiter because the use of iodinated radiographic contrast agents may provoke iodine-induced hyperthyroidism.

Key Words: Pemberton's Sign, Retrosternal Goitre, Thyroid, Mass

INTRODUCTION

Pemberton's Sign in Retrosternal Goitre

A 68-year-old man with a 15-year history of redness of face whenever he tried to comb his hair and tie his turban in the mornings. At that time patient also experienced breathless ness which worsened with time spent combing and tying the turban. Patient also gave history suggestive of choking and stridor during these times.

Physical examination revealed a diffusely enlarged thyroid gland. There were no palpable thyroid nodules, but the lower poles of the thyroid were not palpable. The thyroid was felt extending into and behind the sternum. On swallowing the lower pole of the thyroid could not be felt.

Patient was asked to raise his hands above his head and within 25 seconds of raising both the arms (Pemberton's maneuver), he developed marked plethora of face, (Pemberton's sign). This sign is

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suggestive of compression of the jugular veins. The patient's Thyroid Function Test (FT3, FT4 and TSH) was normal. Computed tomography (Non Contrast Enhanced) of neck and upper thorax revealed a large goiter of the left thyroid lobe and isthmus. The left jugular vein and common carotid artery were compressed and pushed postero laterally due to mass effect of the enlarged thyroid.

The patient underwent thyroidectomy, and became totally asymptomatic. Histological Examination of the excision biopsy revealed a multinodular goiter.



Plethora of Face on raising both the arms above the head – Pemberton Sign



At rest the plethora of face has become normal as the obstruction has been relieved

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Post Thyroidectomy- third post op day

Pemberton's Sign

Pemberton's sign is usually found in patients with a large retrosternal goiter (O'Brien *et al.*, 2003).

It may also be seen in other large mediastinal mass (Basaria and Salvatori, 2004).

This sign was named after Hugh Spear Pemberton who first described the sign in 1946 (Pemberton, 1946).

The Pemberton maneuver is a very useful part of bedside examination, especially when one is evaluating neck swellings like retrosternal goiter or mass or tumor.

Pemberton sign indicates compression of vascular structures in the thoracic inlet; urgent surgical treatment should be sought to relieve the pressure effects of massive retrosternal goiter or mass (Elizabeth and Lewis, 2004; O'Brien *et al.*, 2003; Jae and Wayne, 2010; Steven, 2012 and William *et al.*, 2006).

Non Contrast Computed tomography should be performed to evaluate large goiters. Contrast-enhanced Computed tomography may be contraindicated in patients with large goiter because the use of iodinated radiographic contrast agents may provoke iodine-induced hyperthyroidism (Pearce and Braverman, 2004).

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