

Life-Threatening Upper Airway Obstruction Caused by Delayed Hematoma Occurring 8 Days Post-Thyroidectomy

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Due to modern methods, thyroid surgery is generally considered quite safe. However, post-thyroidectomy hematomas, although rare, can be life-threatening and unpredictable complications of thyroid surgery. Most post-thyroidectomy hematomas occur within 24 hours of surgery, with delayed hematomas occurring after one post-operative week being exceedingly rare. Herein, we report a case of delayed post-thyroidectomy hematoma with respiratory distress occurring on the eighth post-operative day in a patient who was not taking anticoagulants and had no hematologic diseases. Although most bleeding occurs within 24 hours, caution should be used even in such patients who are considered low-risk.

Key Words: Thyroidectomy, Hematoma, Postoperative complication

Introduction

Better preoperative preparation and proper surgical techniques have decreased the rate of complications to less than 2–3% in thyroid surgery. The most disturbing complications of thyroid surgery include recurrent laryngeal nerve injury and permanent hypoparathyroidism. Post-thyroidectomy hematomas, although rare, are potentially life-threatening and unpredictable complications of thyroid surgery reported at an incidence of 0.1–1.1%.¹⁾

Relatively few studies have focused on prevention of and risk factors for postoperative hemorrhage and hematoma after thyroidectomy. Most authors are unable to definitively identify perioperative risk factors for the development of hematoma.^{2–4)} Most post-thyroidectomy hematomas occur within 24 hours and de-

layed hematomas forming in the first post-operative week are exceedingly rare. We report a rare case of delayed post-thyroidectomy hematoma with respiratory distress occurring on the eighth postoperative day in a patient who was not on anticoagulants and had no hematologic disease.

Case Report

A 52-year-old female presented to our department for surgical treatment of thyroid cancer. She had no notable medical history and her coagulation tests were normal. On surgery, the vessels were ligated by Harmonic scalpel. The specimen size was 4×2×1.5 cm to right lobe, 4.5×1.5×1.5 cm to left lobe, 2.5×1 cm to isthmus. Surgical drain was not inserted because the blood loss was not significant and hemostasis was well achieved by absorbable hemostat. The

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duration of the surgery was about 60 min. Postoperative vocal cord movements were normal and there was no laryngeal edema. The incision appeared to be healing well with no swelling 3 days post-operatively, so the patient was discharged.

On the eighth postoperative day, the patient was rushed to the emergency room with a rapidly progressive anterior neck swelling and acute respiratory distress. Her respiratory rate was 30 breaths/min and the SpO₂ was 59%. The patient was intubated then a neck angio CT scan was conducted, which revealed a hematoma in the thyroidectomy bed and edematous changes in the retrovisceral space and upper mediastinum (Fig. 1). Her coagulation tests were normal.

Bedside decompression was performed in emergency room and revealed a deep hematoma. After hematoma removal in the thyroidectomy bed, the bleeding focus was identified just above the cricoid cartilage as the cricothyroid artery, a branch of the superior thyroid artery. The artery was electrocauterized and hemostasis was achieved. The patient stated that the anterior neck hematoma occurred acutely over several minutes without vigorous coughing or sneezing or other obvious reason for hemor-



Fig. 1. Neck angio-computed tomography (CT) scan of our patient. It showed a low-attenuating lesion with partial rim enhancement, suggesting a hematoma in the thyroidectomy bed.

rhage.

After 5 days, the patient was discharged with no wound swelling.

Discussion

Hematoma following thyroid surgery is a rare but potentially life-threatening complication, with a reported rate of 0.1% to 4.7%.⁵⁾ It is generally difficult to predict which patients are at risk for developing hematoma after thyroid surgery.^{6,7)} Post-thyroidectomy hematoma may have a multifactorial etiopathogenesis, including slipping of ligatures on major vessels, re-opening of cauterized veins, increased blood pressure during recover. Coughing, the Valsalva maneuver, retching or vomiting can also increase venous pressure.¹⁻⁴⁾

While drains have long been used empirically in thyroid surgery, there are now many studies, including those of a randomized prospective nature, which fail to demonstrate benefits in preventing the formation of postoperative hematoma.⁸⁻¹¹⁾ Based on this, it would appear that drains do not have to be used as a preventative measure.

Most post-thyroidectomy hematomas occur within 24 hours and in most cases, bleeding is likely due to post-surgical hypertension. Thus, very close monitoring of blood pressure during the first 24 hours after surgery and prompt appropriate treatment of any signs of hypertension is recommended. A study by Promberger et al.¹²⁾ found that 80.6% of postoperative bleeds became symptomatic within 6 hours and 88.0% within 12 hours after the operation; only 10 (0.03%) patients demonstrated signs of bleeding after 24 hours. The occurrence of post-surgical complications has also been associated with anticoagulant agents or hematologic diseases such as von Willebrand disease, hemophilia and chronic renal failure.²⁾ Two cases of very delayed bleeding occurring on the 13th postoperative day in patients who were taking anticoagulants have been reported.³⁾ Our case is highly unusual because our patient was not taking anticoagulants and the hematoma was markedly delayed until 8 days post-thyroidectomy. However, we

suppose that the blood clot sealing the partially damaged cricothyroid artery during surgery melted and some acute cause of increased blood pressure might have been present. Delicate surgical procedure, and although rare, mentioning the possibility of a delayed hematoma, and careful consideration in restarting anticoagulation therapy may prevent such delayed hematoma.

Cervical hematomas can lead rapidly to progressive airway obstruction due to pressure in the tight compartment below the strap muscles that impairs venous and lymphatic drainage, causing laryngopharyngeal edema.¹⁾ Patients may present with respiratory distress, pain, a pressure sensation in the neck, and dysphagia. As early recognition with immediate intervention is key to managing this complication, medical staff should be aware of these signs and symptoms.⁷⁾

We experienced a highly unusual case of acute post-thyroidectomy hematoma that caused life-threatening upper airway obstruction on the eighth postoperative day without hematologic diseases, anticoagulant medications, or other predisposing factors for acute hemorrhage. Although most bleeding occurs within 24 hours after thyroidectomy, caution should be used, even in patients considered to be low risk.

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