CASE REPORT

Combined Open-Heart Coronary Artery Bypass Surgery and Subtotal Thyroidectomy in a 54-year-old patient: A Case Report

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ABSTRACT

BACKGROUND: Combined open-heart surgery and thyroidectomy is a rare procedure. However, some difficulties will occur for cardiac surgery when thyromegaly extends into the retrosternal space.
CASE DETAILS: A 54-year-old woman suffering from dyspnea, chest pain and decreased left ventricular function (EF=40%) was diagnosed with coronary artery disease (3 vessel disease) and became candidate for coronary artery bypass grafting (CABG). Also, she had multinodular goiter with normal thyroid function test. After midsternotomy, a huge goiter was seen in the upper mediastinum. Because the mass had covered the ascending aorta and involved the posterior aspect of the innominate vein making access to aorta impossible, thyroidectomy was performed at first followed by CABG. Post-operation course was satisfactory. Fourteen months later, the patient was euthyroid and in NYHA class 1.
CONCLUSION: The evidence of the case showed that combined CABG and thyroidectomy can be performed safely.
KEYWORDS: Coronary Artery Bypass Grafting, Subtotal Thyroidectomy, Surgery

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INTRODUCTION

Combined thyromegaly and coronary artery disease both necessitating surgery in the same operation is rare. However, thyroid diseases are relatively common problems in patients with cardiac disease (1, 2). Some case reports are published in literature about successful combined surgery (1-3). Sometimes, the extension of thyromegaly into the retrosternal space creates some difficulties for cardiac surgery (3). We report a successful combined surgery, including thyroidectomy and coronary bypass grafting.

CASE REPORT

A 54-year-old woman presented with a known case of multinodular goiter along with chief complaints of dyspnea and chest pain on exertion (New York Heart Classification Class IV). Her dyspnea was a chronic symptom which was seen even at rest (mainly compatible with untreated goiter), and her chest pain commenced recently. In evaluation, coronary artery disease (3 vessel disease) was diagnosed as significant lesion at proximal parts of LAD, RCA, and LCX (Figure 1). Echocardiography revealed mild to moderate left ventricular dysfunction (estimated ejection fraction=40%) and normal heart valves.

Thyroid function test was normal (euthyroid), and we decided to perform CABG because general surgeons postponed the thyroid surgery until the cardiac problem was resolved. After routine preparations, the patient became candidate for CABG. After mid sternotomy, we were surprised by a large substernal extension of the goiter (unfortunately preoperative imaging evaluations were not comprehensive) (Figure 2).

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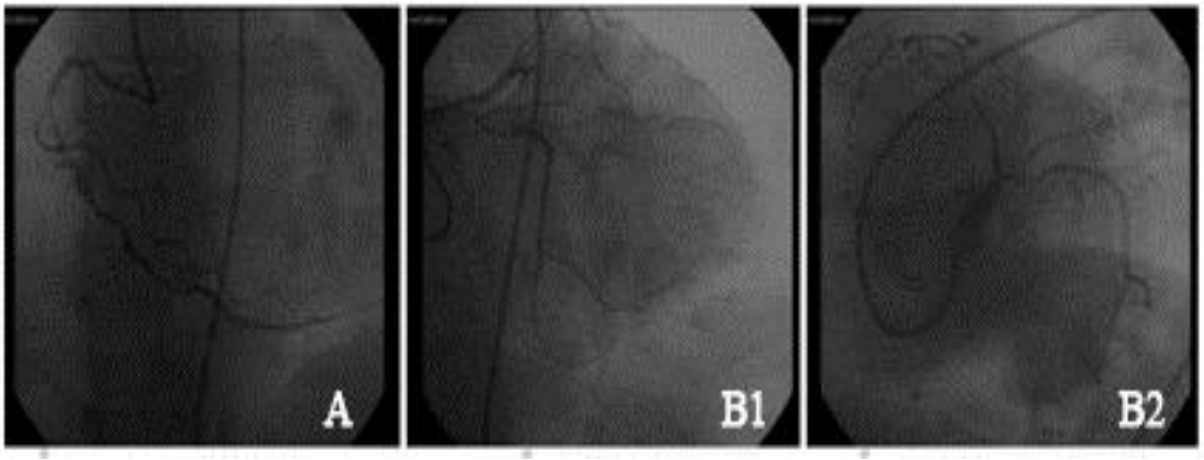

Figure 1*: RCA lesion (A), CX and LAD lesion (B1, B2)*

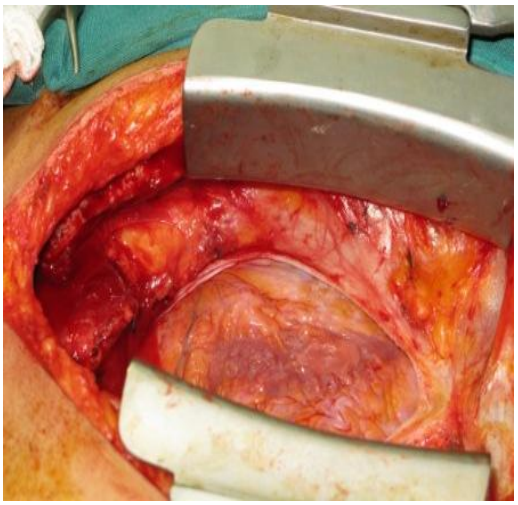

Figure 2*: Substernal extension of goiter over the ascending aorta*

Because the mass had covered the ascending aorta, we decided to perform thyroidectomy at first. Therefore, the incision extended to her neck, and subtotal thyroidectomy was performed with the usual technique with preservation of parathyroid glands (Figures 3, 4). It was interesting that the huge goiter had involved posterior aspect of the innominate vein too, which was resected during the procedure (Figures 5, 6). Following this, CABG was performed with standard technique and thorough hemostasis. The post-operative course was satisfactory.

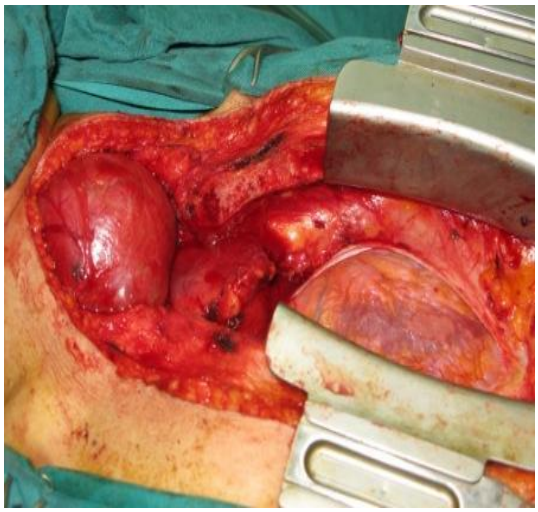

Figure 3*: Extended incision for thyroidectomy*

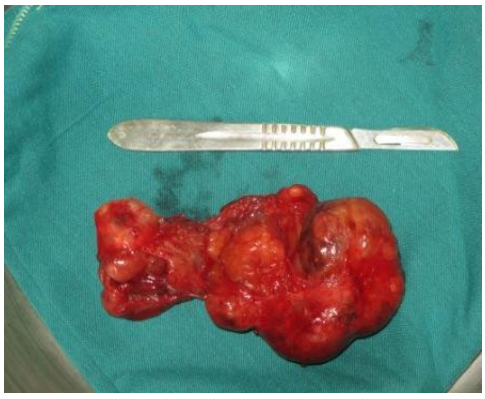

Figure 4*: Classic subtotal thyroidectomy*

Figure 5*: A part of thyroid gland, behind the innominate vein*

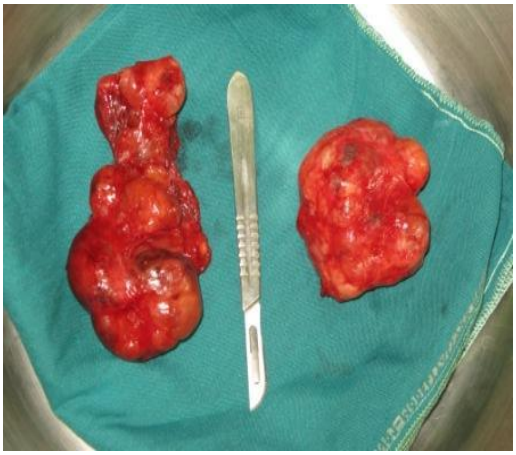

Figure 6*: Resected thyroid gland*

DISCUSSION

Fourteen months later, the patient was euthyroid and in NYHA class 1. She did not have any problem with the scar created by extended incision of midsternotomy to the neck. Few reports exist in literature about combined thyroidectomy and cardiac surgery(1-5). Here, we presented a patient with two major problems: 1. significant coronary artery disease (Figure 1), and 2. symptomatic upper airway obstruction due to a large goiter.

Separate treatment of each disease had certain hazards with higher risks. In a few cases (2), combined thyroidectomy and CABG (as off-pump manner) have been performed successfully (3). Thyroid function test was normal in our case before the start of surgery. Also, other researchers reported that CABG combined with thyroidectomy is safe and low risk if levels of the thyroid hormone would be in a euthyroid or hypothyroid state before surgery (6, 7). The reason for choosing the off-pump technique may be due to lower doses of heparin needed for the procedure (for prevention of post-operative bleeding). However, in this case, we preferred on-pump technique with attention to meticulous hemostasis. In addition, extended incision connecting mediastinum to the neck might have reduced the possibility of hematoma formation and compression effect on the upper airway tract by free drainage into the mediastinal space. In conclusion, combined CABG and thyroidectomy can be performed safely.

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