

Combined mitral valve replacement and total thyroidectomy: a case report

Kombine mitral kapak replasmanı ve total tiroidektomi: Olgu sunumu

Alp Aslan,¹ Raif Cavolli,¹ Mehmet Oğuz,¹ Haydar Celasin²

Department of ¹Cardiovascular Surgery, ²General Surgery, Kavaklıdere Umut Hospital, Ankara

A 62-year-old man with mitral stenosis was referred to our clinic for mitral valve replacement (MVR). Laboratory studies revealed a euthyroid state. A computed tomographic scan of the neck revealed deviation of the trachea to the right due to compression from the thyroid gland. After consultation with an endocrinologist and general surgeon, a combined mitral valve replacement and total thyroidectomy were performed. The intra- and postoperative course was uneventful. To avoid a second operation, the combined MVR and total thyroidectomy can be performed safely in the same sequence.

Key words: Combined mitral valve replacement and thyroidectomy; mitral valve replacement; thyroidectomy.

Thyroid disease in patients with coronary or valvular cardiac disease is common, reaching 11%.^[1] The appropriate timing of thyroid surgery in candidates for major cardiovascular surgery, mainly coronary artery bypass grafting (CABG) surgery or valve surgery has not yet been addressed. Performing thyroidectomy weeks or months after initial CABG/valvular surgery exposes patients to the cumulative risk of two independent interventions. Thus, managing both thyroid and cardiac problems in the same staged operation seems rational and tempting.^[2] We report a case of combined open heart surgery and intervention of thyroid gland.

CASE REPORT

A 62-year-old man with mitral stenosis was referred to our clinic for mitral valve replacement (MVR). His relevant medical history included a goiter that had been diagnosed several years earlier. On physical examination we found a readily visible multinodular thyroid goiter that had enlarged caudally beneath the manubrium sterni. Laboratory studies revealed a euthyroid

Mitral darlığı olan 62 yaşında erkek hasta, mitral kapak replasmanı (MKR) ameliyatı için kliniğimize sevk edildi. Laboratuvar incelemelerinde, ötiroid durumu saptandı. Boyun bilgisayarlı tomografisinde, trakeanın tiroid bezin basısı nedeniyle sağa deviye olduğu saptandı. Bir endokrinolog ve genel cerrah ile yapılan konsültasyon sonrası kombine mitral kapak replasmanı ve total tiroidektomi ameliyatı yapılmasına karar verildi. Ameliyat sırası ve sonrası dönemde herhangi bir sorun olmadı. İkinci bir ameliyattan kaçınılması için MKR ve total tiroidektomi kombine olarak aynı seansta güvenle yapılabilir.

Anahtar sözcükler: Kombine mitral kapak replasmanı ve tiroidektomi; mitral kapak replasmanı; tiroidektomi.

state. Just before surgery free triiodothyronine-FT3, free thyroxine-FT4, and TSH were 3.04 pg/ml, 1.43 ng/dl and 2.5 U/ml respectively. A computed tomographic (CT) scan of the neck revealed a deviation of the trachea to the right due to compression by the thyroid gland (Fig. 1). After consultation with an endocrinologist and general surgeon, combined mitral valve replacement and total thyroidectomy were recommended.

Surgical procedure

The patient was positioned as for classical open heart surgery via median sternotomy with hyperextension of the neck. An iodine-free solution such as chlorhexidine was used in swabbing the anterior neck region in order to avoid iodine absorption and subsequent perturbation of thyroid tests and function. Thyroidectomy was performed after the sternotomy via transverse cervicotomy before heparinization and institution of extracorporeal circulation (Fig. 2). During this first stage, the patient was closely monitored for any hemodynamic disturbance and the cardiovascular team was ready for any abrupt

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Correspondence: Raif Cavolli, M.D. Kavaklıdere Umut Hastanesi, Kalp ve Damar Cerrahisi Bölümü, 06680 Kavaklıdere, Ankara, Turkey.
Tel: +90 312 - 466 38 38 e-mail: raifcavolli@hotmail.com

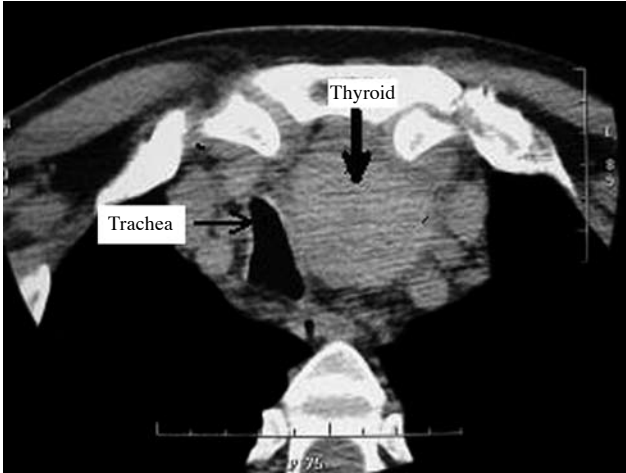


Fig. 1. Preoperative computed tomography of the neck demonstrated a deviation of the trachea to the right due to the compression of the thyroid gland.

incident. By the end of the intervention, the cardiovascular team began cardiac surgery using cardiopulmonary bypass. The neck wound was left open during the entire procedure, allowing monitoring for any bleeding from the operative site under the full heparinization (3 mg/kg) that accompanied cardiopulmonary bypass. At the end of the MVR surgery and following administration of the adequate protamine dose in order to reverse heparinization, the neck wound was closed with one drain.

The patient was admitted postoperatively in the cardiovascular intensive care unit. Thyroid function tests, calcium and phosphorus serum levels were added to the routine blood tests. Levothyroxine therapy was begun on the day following surgery, after which the levels of thyroid hormone gradually increased to within the normal range by postoperative day 7. Heparin, low dose aspirin and oral anticoagulation were initiated at day 1. The postoperative course was uneventful, without any problems related to hyperthyroidism or hypothyroidism.

The patient was discharged without any symptoms on postoperative day 7.

DISCUSSION

Performing total thyroidectomy in patients with cardiac disease cannot be undertaken without risks from general anesthesia. Hyperthyroid patients have a postoperative hypermetabolic state that places them at increased risk of myocardial ischemia, vasomotor instability, and poorly controlled ventricular rate in atrial fibrillation. On the other hand, hypothyroid patients require prolonged periods of ventilatory support postoperatively because of slower clearance of anesthetic agents.^[1]

Reports of combined cardiac surgery and thyroidectomy are rare.^[2-4] The first case of combined cardiac and thyroid surgery was reported by Wolfhard et al.^[3] Matsuyama et al.^[4] reported a case of a 65-year-old woman with aortic stenosis, ischemic heart disease, and Grave's disease unresponsive to drug therapy. Combined CABG, aortic valve replacement, and total thyroidectomy were performed. Abboud et al.^[2] reported six patients who underwent a combined heart and thyroid surgery. And all six patients were free from postoperative complications.

Simultaneous thyroidectomy and cardiac surgery has not been evaluated fully. Such patients have a higher incidence of postoperative complications than those without thyroid disease, but there are no proven indications for the combined procedure. Complications related to untreated thyroid disease in patients who undergo cardiac procedures can be catastrophic. Çağlı et al.^[5] reported a cardiopulmonary bypass-related tracheal obstruction by substernal goiter in a preoperatively asymptomatic patient after elective CABG.

This case report had good results, as no postoperative complications related to the thyroidectomy, such as

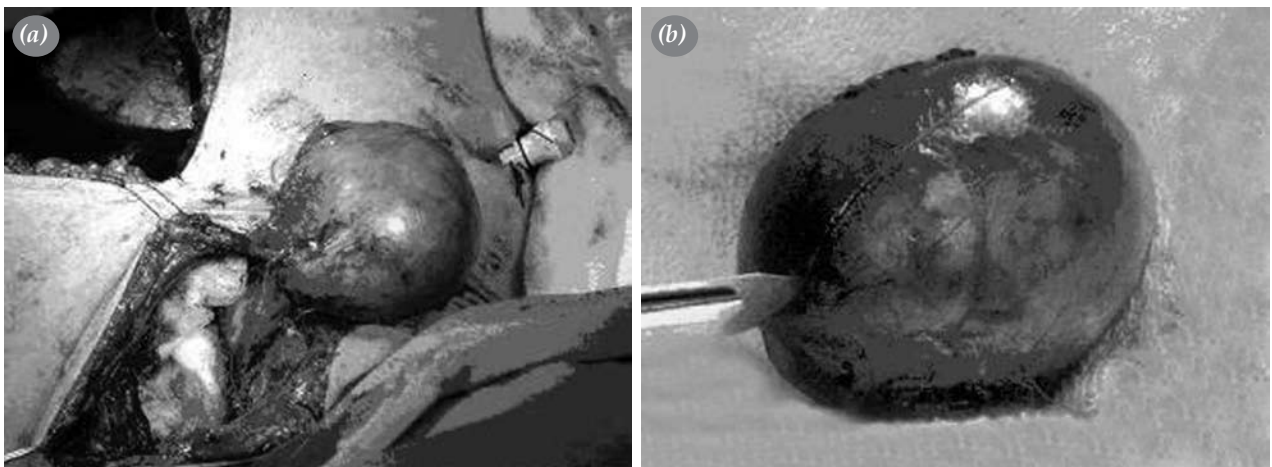


Fig. 2. (a) The view of the operative field. (b) Extirpated thyroid gland.

operative site bleeding, occurred. We believe that concomitant thyroid surgery and MVR offer acceptable results for these complex patients if the preoperative levels of thyroid hormone are maintained in the euthyroid state.

In summary, the simultaneous performance of thyroid and cardiac surgery is a safe and efficacious operative strategy in these high-risk patients. Due to the preliminary nature of our case, further follow-up and experience are necessary.

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