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Case Report

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Simultaneous Surgery of Cardiac Myxoma and Thyroidectomy: Case Report and Short View

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Abstract

The practice of simultaneous cardiac and non-cardiac surgery is still debated today. The presence of cardiac and non-cardiac surgical diseases at the same time is a rare finding and generally, surgeries used to be performed in separated stages. In this presentation we will report a case of urgent myxoma resection and simultaneous surgery for multinodular thyroid gland hypertrophy. In our knowledge, there is no description in the literature of the simultaneous intervention of myxoma and thyroidectomy. We will also provide a brief overview of the current literature about the management strategies for patients who need both cardiac and non-cardiac surgeries.

Our patient is a 73 -year-old lady who came to the emergency department with a two-week history of shortness of breath. She has a long-standing history of arterial hypertension, type II diabetes mellitus and hyperthyroidism. The echocardiography revealed a hyperechogenic intracardiac mass in the left atrium, probably myxoma, attached by a small pedicle to the interatrial septum, measuring approximately 3 X 4 cm with regular contours. Additionaly, a large mass was found on the anterior neck during physical examination.

The CT scan revealed a hypertrophic multinodular thyroid gland with numerous hypodense nodules, some of which are calcified, with retrosternal extension.

The indication for cardiac surgery was urgent. Due to the retrosternal extension of the thyroid gland we consulted with a general surgeon in order to make a plan on the surgical aproach simultaneous or two-stage surgery. We decide to perform simultaneous surgeries starting with total thyroidectomy and continuing with in the same stage with myxoma resection under extra corporeal circulation. The patient had a very good postoperative course. The patient left the hospital in very good conditions.

In most published meta-analyses and studies, it is recommended to perform cardiac and non-cardiac interventions simultaneously, with very satisfactory intra- and post-operative results.

Conclusion: Simultaneous thyroidectomy and cardiac myxoma surgery can be a safely performed with very good results. The literature refer very good results of simultaneous cardiac and non-cardiac surgeries.

Keywords: Myxoma; Thyroidectomy; Simultaneous surgery; Cardiac-non cardiac

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Introduction

The practice of simultaneous cardiac and non-cardiac surgery is still debated today. The presence of cardiac and non-cardiac surgical diseases at the same time is a rare finding and generally, surgeries used to be performed in separated stages. In this presentation we will report a case of urgent myxoma resection and simultaneous surgery for multinodular thyroid gland hypertrophy. In our knowledge ,there is no description in the literature of the simultaneous intervention of myxoma and thyroidectomy. We will also provide a brief overview of the current literature about the management strategies for patients who need both cardiac and non-cardiac surgeries.

Case presentation

Patient H.C (73 years old) presented in the hospital emergency department with a two-week history of severe dyspnea. Transthoracic echocardiography revealed: regular contour hyperechogenic formation with an area of 4.8 cm^2 attached to the interatrial septum, probably left atrial myxoma while mitral valve, left ventricle (LV) size and ejection fraction were normal (Figure 1).

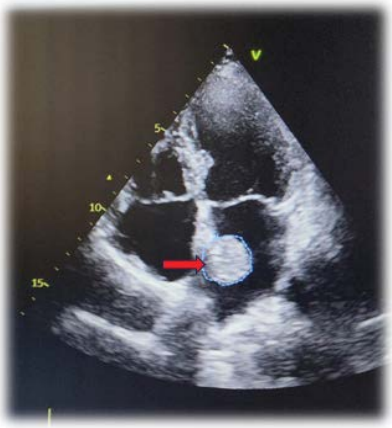

Figure 1:.Transthoracic echocardiogram clearly showing atrial myxoma (red arow).

The patient has clear indication for intervention. The patient was transferred to the Cardiology department and underwent angiography, which revealed no significant stenosis of the coronary arteries. During her stay in the Cardiology department, the patient was diagnosed with hyperthyroidism. On objective examination, a large mass is clearly visible in the front of the neck.

Computed tomography (CT) scan resulted: Thyroid gland with multiple hypodense nodules, some of which are calcified, some with cystic degeneration, the largest measuring 58x40 mm, with retrosternal extension and displacement of the trachea to the right (Fgure 2). CT scan showed as well the intracardiac mass (Figure 3). Biochemical analysis results: TSH: <0.0083 mU/l;FT3 1.31 pg/ml.

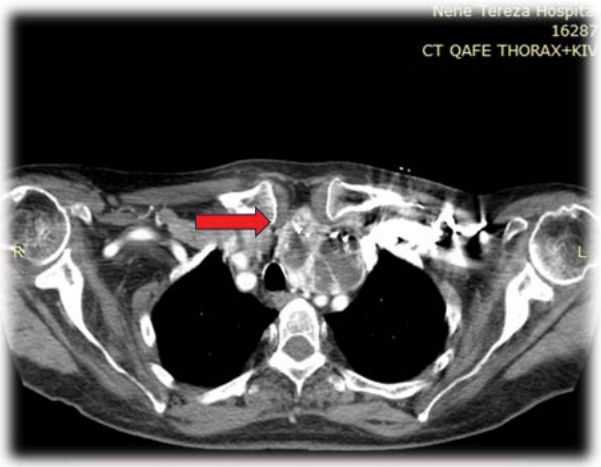

Figure 2: CT scan showing the retrosternal extension of the thyroid tumor (with red arrow)

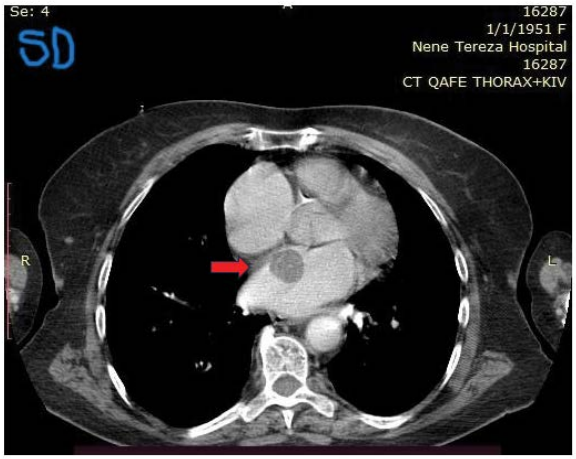

Figure 3: CT scan showing atrial myxoma (red arrow).

Due to retrosternal extension of the thyroid gland and the indications for thyroidectomy, a joint consultation with a general surgeon was necessary. Both options were considered: simultaneous surgery and surgery in two different stages. Due to the retrosternal extension of the thyroid gland and the fact that the patient may require sternotomy, we decided to perform simultaneous intervention. Additionally, other factors favoring simultaneous intervention included one stage of general anesthesia (reducing the risk associated with anesthesia) and the patient's emotional stress. The choice to perform a simultaneous surgery was opposed by hemorrhage associated to heparin. After discussion between the surgical team and the anesthesia team, it was decided to perform simultaneous procedures. The patient was transferred to the cardiac surgery department for intervention.

First, a thyroidectomy was performed, without complications. Through median sternotomy and extracorporeal circulation, the mass attached to the interatrial septum by a small pedicle is removed through left atriotomy.

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Visually, the mass had the shape of a myxoma (Figure 4). Both tumors were immediately fixed in formalin and send for biopsy. To avoid the risk of bleeding as much as possible, the thyroidectomy wound was closed after protamine administration. Histopathological examination showed a typical myxoma. The structures are composed of polygonal / stellate myxoma cells with abundant eosinophilic cytoplasm, indistinct cell borders, oval nucleus with open chromatin and indistinct nucleolus. There are inflammatory cells and hemorrhage with hemosiderin deposits; often smooth muscle cells within the myxoid stroma (Figure 5). The histopathology of thyroid tumor shows characteristics of thyroid papillary carcinoma. We see the presence of true papillae defined as finger-like projection with a fibrovascular core. The lining cells show nuclear features of papillary carcinoma as: 1) nuclear enlargement, 2) nuclear membrane irregularity and 3) chromatin clearing (Figure 6).

Figure 4: Photo from during intervention, Atrial myxoma.

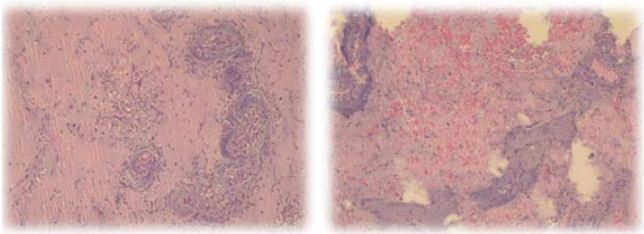

Figure 5: Myxoma Histopathology.

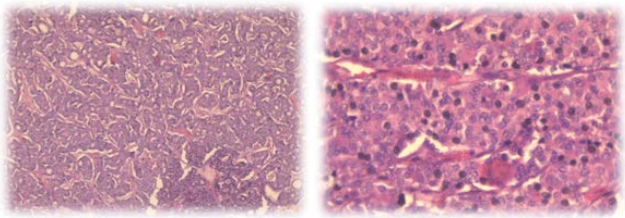

Figure 6: Thyroid papillary carcinoma.

The patient's postoperative course was very good with no complications. Transthoracic echocardiography revealed free left atrium and intact interatrial septum. The patient was discharged from the hospital in very good condition.

Discussion

It is fairly unusual to find cardiac and non-cardiac surgical diseases together, and when this happens, separate procedures are carried out at different stages. When it's not necessary, simultaneous surgery is avoided and has always been seen with skepticism. It is often preferred to perform thyroidectomy first, followed by cardiac intervention, particularly in cases involving both procedures. As far as we are aware, there have never been a case of cardiac myxoma and thyroidectomy at the same time. This fact made this intervention even more difficult.

Attitudes toward simultaneous interventions have been changing over the past decade. A review of the literature showed that simultaneous procedures can be performed with a low rate of procedural or anesthesia-related complications [1,2]. There are documented cases of simultaneous cardiac and non-cardiac procedures.: thyroidectomy and coronary artery by-pass grafting (CABG), liver transplantation and CABG, lung tumor and CABG, gastric tumor and aortic valve replacement and esophageal tumor and mitral valve replacement [3-5,8,9,11].

The general principle of surgery is that if a patient has coronary heart disease, coronary artery bypass surgery should be performed first to minimize the risk of perioperative infarction due to surgical stress and general anesthesia. In general, in the presence of coronary artery disease, cardiac function must first be optimized before noncardiac interventions can be performed safely. Noncardiac interventions are usually performed after cardiac function has stabilized, which may take several months [5]. However, in recent years , this principle has not been considered.

In most meta-analyses and published studies (particularly cardiac and non-cardiac oncology procedures),complex procedures did not have a negative impact on in-hospital morbidity and mortality [10-13]. Simultaneous intervention does not require second stage surgery and does not delay drug treatment. Based on these studies, in recent years it has been recommended to perform cardiac and non-cardiac interventions simultaneously to achieve highly satisfactory intraoperative and postoperative outcomes.

Simultaneous treatment of cardiac and non-cardiac diseases has several advantages. It reduces the risks associated with general anesthesia. Moreover, it reduces the risks associated with sternotomy and reduces emotional stress for patients [9]. Redo sternotomy is an important factor favoring simultaneous intervention. This causes problems due to adhesion and consequently increases operational risk.

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Heparinization and subsequent bleeding are important factors against simultaneous intervention. Although heparin is easily neutralized by protamine sulfate, the risk of bleeding still exists due to its residual effects.

Our decision to choose simultaneous intervention was primarily motivated by the need to lower the risk related to general anesthesia, sternotomy, and patient emotional stress. Another major reason for cardiac surgery is the risk of acute airway obstruction due to a rapidly expanding goiter after cardiac surgery using cardiopulmonary bypass [6,7]. Extracorporeal circulation disrupts the upper respiratory tract, causing an inflammatory response leading to systemic edema, including acute enlargement of the thyroid gland. Another reason why these two surgeries were performed simultaneously is because these two organs are closely related anatomically. In our case, median sternotomy was not required for thyroidectomy. The patient had a very successful and event -free postoperative course. The surgical team made the correct choice in this case by performing a one-stage intervention, which had significant positive effects on the patient's health.

Conclusions: Simultaneous thyroidectomy and cardiac myxoma surgery can be a safely performed with very good results. It avoids the unnecessary stress for the patient of undergoing anesthesia twice. The literature data support that simultaneous cardiac and noncardiac surgery leads to good results.

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Conflicts of interests: Nothing to declare

References

1. Yang Y, Xiao F, Wang J, et al. Simultaneous surgery in patients with both cardiac and noncardiac diseases. Patient prefer adherence 10 (2016): 1251-1258.
2. Y Yang, F Xiao, J Wang, et al. One-stage surgery in patients with both cardiac and non-cardiac diseases. Journal of Peking University. 3053 (2012): 327-331.
3. Lampridis S, Lau MC, Peter MP, et al. Concomitant off-pump coronary artery bypass grafting and total thyroidectomy for a large retrosternal goitre: A case report and review of the literature. J Thorac Dis 8 (2016): E362-E368.
4. Giakoustidis AP, Cherian T, Antoniadis N, et al. Combined Cardiac Surgery and Liver Transplantation: Three Decades of Worldwide Results. J Gastrointestin Liver Dis 20 (2011): 415-421.
5. Ducos C, Blaise H, Brichon PY, et al. Indications for combined thyroidectomy and cardiac surgery. J Visc Surg 148 (2011): 321-322.
6. Cagli K, Ulas MM, Hizarci M, et al. Substernal goiter: An unusual cause of respiratory failure after coronary artery bypass grafting. Tex Heart Inst J 32 (2018): 224-227.
7. Sajja LR, Mannam GC, Sompalli S, et al. Multinodular goiter compressing the trachea following open heart surgery. Asian Cardiovasc Thorac Ann 14 (2015): 416-417.
8. Litmathe J, Atmaca N, Menghesha D, et al. Combined procedures using the extracorporeal circulation and urologic tumor operation - experiences in six cases. Interact Cardiovasc Thorac Surg 3 (2004): 132-135.
9. Tsuji Y, Morimoto N, Tanaka H, et al. Surgery for gastric cancer combined with cardiac and aortic surgery. Arch Surg 140 (2013): 1109-1114.
10. Budrikis A, Jievaltas M, Al Assaad S, et al. Simultaneous nephrectomy and coronary artery bypass grafting through extended sternotomy. Journal of Cardiothoracic Surgery volume 7 (2017): 79
11. Cheng S, Jiang Y, Li X, et al. Perioperative outcomes of combined heart surgery and lung tumor resection: a systematic review and meta-analysis. J Cardiothorac Surg 16 (2021): 227.
12. Komarov R, Osminin S, Ismailbaev A, et al. The First Case of Simultaneous Surgical Procedure for Mitral Valve Disease and Esophageal Case Rep Oncol 14 (2021): 1665-1670.
13. Yang Y, Xiao F, Wang J, et al. Simultaneous surgery in patients suffering from tumor combined with coronary artery disease. Beijing Da Xue Xue Bao Yi Xue Ban 39 (2007): 416-419.