International Journal of Cardiology 153 (2009) e47–e50

International Journal of Cardiology

www.elsevier.com/locate/ijcard

Letter to the Editor

Pericardial effusion associated with subclinical hypothyroidism

Giuseppe Dattilo [a], Sergio Crosca [b], Stefania Tavella [b], Filippo Marte [c], Salvatore Patanè [c,*]

[a] *Cardiologia Presidio di Lipari, (Me) AUSL5 Messina, Italy*
[b] *Unità Complessa di Medicina Interna Presidio di Lipari, (Me)AUSL5 Messina, Italy*
[c] *Cardiologia Nuovo Presidio Ospedaliero Cutroni Zodda-Barcellona P.d.G, (Me) AUSL5 Messina, Via Cattafi 98051 Barcellona Pozzo di Gotto, Messina, Italy*

Received 19 March 2009; accepted 22 March 2009
Available online 18 April 2009

Abstract

Previous studies have suggested that subclinical thyroid dysfunction, as manifested by abnormalities in thyroid-stimulating hormone (TSH) levels, are associated with detrimental effects on the cardiovascular system. Subclinical hyperthyroidism is an increasingly recognized entity that is defined as a normal serum free thyroxine and free triiodothyronine levels with a thyroid-stimulating hormone level suppressed below the normal range and usually undetectable. It has been reported that subclinical hyperthyroidism is not associated with coronary heart disease or mortality from cardiovascular causes but it is sufficient to induce arrhythmias including atrial fibrillation and atrial flutter. It has also been reported that increased factor X activity in patients with subclinical hyperthyroidism represents a potential hypercoagulable state. Subclinical hypothyroidism is defined by elevated serum levels of TSH with normal levels of free thyroid hormones. Subclinical hypothyroidism is characterized by abnormal lipid metabolism, cardiac dysfunction, diastolic hypertension conferring an elevated risk of atherosclerosis, and ischemic heart disease. It has been reported that sub-clinical hypothyroidism is associated with both, a significant risk of coronary heart disease at baseline and at follow-up and that mortality from cardiovascular causes is significantly higher at follow-up. However subclinical thyroid dysfunction is currently the subject of numerous studies and remains controversial, particularly as it relates to cardiovascular morbidity and mortality and clinical applications. Pericardial effusion can be present in systemic disorders including hypothyroidism. We present a case of subclinical hypothyroidism in a 41-year-old Italian woman with an ubiquitary pericardial effusion. Also this case focuses attention on subclinical hypothyroidism.

Keywords: Pericardial effusion; Subclinical hypothyroidism; Subclinical thyroid dysfunction

1. Case report

Previous studies have suggested that subclinical thyroid dysfunction, as manifested by abnormalities in thyroid-stimulating hormone (TSH) levels, are associated with detrimental effects on the cardiovascular system[1]. Subclinical hyperthyroidism is an increasingly recognized entity that is defined as a normal serum free thyroxine and free triiodothyronine levels with a thyroid-stimulating hormone level suppressed below the normal range and usually undetectable[2]. It has been reported that subclinical hyperthyroidism is not associated with coronary heart disease or mortality from cardiovascular causes[3] but it is sufficient to induce arrhythmias [2] including atrial fibrillation [4–10] and atrial flutter [11,12]. It has also been reported that increased factor X activity in patients with subclinical hyperthyroidism represents a potential hypercoagulable state[5,13]. It has been also reported an acute myocardial infarction with normal

* Corresponding author. Tel.: +393402783962.
E-mail address: patane-@libero.it (S. Patanè).

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doi:10.1016/j.ijcard.2009.03.090

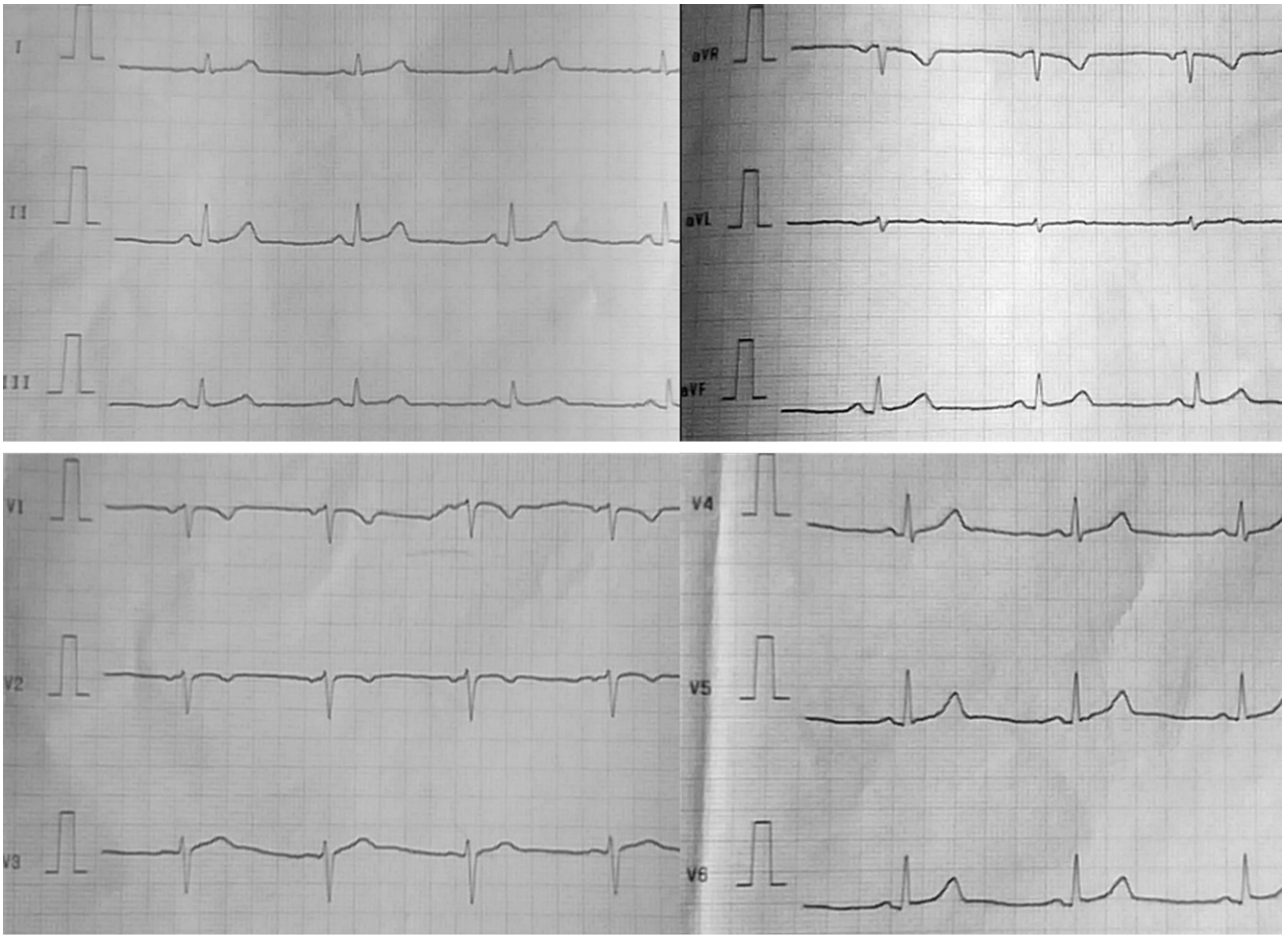

Fig. 1. ECG showed a bradicardic rhythm.

coronary arteries associated with iatrogenic hyperthyroidism [13] and with a myocardial bridge too[14]. It has been also reported an acute myocardial infarction without significant coronary stenoses associated with subclinical hyperthyroidism [15,16] and a recurrent acute pulmonary embolism associated with subclinical hyperthyroidism has been reported too[17]. Subclinical hypothyroidism is defined by elevated serum levels of TSH with normal levels of free thyroid hormones[18,19]. Subclinical hypothyroidism is characterized by abnormal lipid metabolism, cardiac dysfunction, diastolic hypertension conferring an elevated risk of atherosclerosis, and ischemic heart disease[1]. It has been reported that subclinical hypothyroidism is associated with both, a significant risk of coronary heart disease [20] at baseline and at follow-up and that mortality from cardiovascular causes is significantly higher at follow-up[21–24]. However subclinical thyroid dysfunction is currently the subject of numerous studies and remains controversial, particularly as it relates to cardiovascular morbidity and mortality and clinical applications[1,25,26,27]. Pericardial effusion can be present in systemic disorders[28] including hypothyroidism[29,30]. We present a case of subclinical hypothyroidism in a 41-year-old Italian woman with an ubiquitary pericardial effusion. A 41-year-old Italian woman was admitted to hospital for an abdominal pain. The ECG was performed (Fig. 1) and it showed a bradicardic rhythm. Echocardiographic evaluation revealed an ubiquitary pericardial effusion especially situated on lateral side (Panels A and B) (Fig. 2). Moreover a mild mitral regurgitation was shown. Thyroglobulin autoantibodies were 50 U/ml (normal value 0–34), antithyroid peroxidase antibodies were 178 U/ml(normal value 0–12), Thyroid-stimulating-hormone was 0.004 μU/ml (normal value 0.4–4), free triiodothyronine was 2.60 ng/dl (normal value 1.45–3.48), free thyroxine was 1.10 ng/dl (normal value 0.71–1.85).a thyroid's ecography was performed. The left thyroid lobe presented a hyperechoic nodule and a hypoechoic nodule. Also this case focuses attention on subclinical hypothyroidism.

Acknowledgement

The authors of this manuscript have certified that they comply with the Principles of Ethical Publishing in the International Journal of Cardiology [31].