

## Real Life Cases In Clinical Practice

### Hypothyroidism with Pericardial Effusion

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BSM, 40 years old married female was referred to Cardiology for evaluation of Cardiomegaly. 2D Echo done showed moderate pericardial effusion without tamponade. She was then referred to Thyroid Clinic to rule out thyroid disorder.

On inquiry, her complaints were :

Loss of appetite, constipation, periorbital puffiness & lethargy	since last 4-5 years
Weight gain & Menorrhagia	since 2-3 years

No complaints of dyspnoea and chest pain

No family history of thyroid disorder

G2 P2 L2 & last delivery was 15 years back.

On examination:	Pulse 72/min regular, Shallow looks Mild periorbital puffiness Coarse and dry skin No Goiter Delayed relaxation of ankle jerks Auscultation: Heart sounds faintly audible Breath sounds bilaterally equal	BP 140/100 mm Hg,
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Clinical Impression: Hypothyroidism with pericardial effusion.

Thyroid function tests confirmed the diagnosis of PRIMARY HYPOTHYROIDISM. (T3 : 30 ng/dl, T4: NDT g/dl, TSH: 150 mIU/ml) .

ECG: Bradycardia with low voltage complexes.

She was started on 100 gms of thyroxine per day. No intervention was done for pericardial effusion. She became biochemically euthyroid within 6 months.

#### Discussion:

Incidence of pericardial effusion is reported to be 30% to 80% in patients with overt hypothyroidism. Effusions are more common and their volume greater in patients with long standing and severe disease. The prevalence of pericardial effusion has declined

because of prompt diagnosis of hypothyroidism during its early mild stage or even in absence of minimal symptomatology.

Pericardial effusion has been attributed to increased capillary permeability, impaired lymphatic drainage and enhanced avidity for salt and water. The fluid is rich in proteins and glycosaminoglycans. The fluid also has a high cholesterol concentration and is often viscous.

Myxedematous pericardial effusions usually do not cause symptoms. Often attention is called to the heart by finding of marked cardiomegaly on Chest X- ray like our patient. Most of the patients do not show hemodynamic alterations inspite of very large volumes of pericardial effusion. This could be partly accounted for by slow fluid accumulation and pericardial distensibility. Cardiac tamponade has been reported as a rare complication. The Electrocardiogram often shows non-specific abnormalities such as low QRS voltage and flattened or inverted T waves either due to myxedematous heart disease or pericardial effusions.

Other causes for pericardial effusions such as tuberculosis, ureamia, neoplasms, pyogenic or mycotic infections, connective tissue disorders like SLE etc. are also to be borne in mind and evaluated if necessary.

The treatment is thyroxine supplementation. In elderly, replacement should be started with 25 gms/day and then a gradually increased to avoid anginal attacks. The dose should be adjusted to maintain serum TSH levels within normal limits. In event of tamponade, pericardial tapping is the only option available. Pericardial effusions tend to regress slowly and ultimately disappear over a period of many months after achieving the euthyroid state.

Patients with hypothyroidism can present to various medical specialities depending on their symptomatology for example with oedema feet and puffiness of face to Nephrologist, menorrhagia to Gynaecologist, carpal tunnel syndrome to Neurologist, depression to Psychiatrist etc. Our patient was referred to Cardiologist for evaluation of cardiomegaly and was referred to us by them.

#### **References:**

- Kabadi UM, Kumar SP. Pericardial effusion in primary hypothyroidism. Am
- Klein I, Levey GS. Unusual manifestations of Hypothyroidism. Arch. Intern Med 1984; 144:123.
- Manolis A, Varriale P, Ostrowski R. Hypothyroid cardiac tamponade. Arch Intern Med 1987; 147:1167

#### **Suggested Reading.**

Klein I, Ojamaa K. The cardiovascular system in Hypothyroidism.. In: Werner & Ingbar's : The Thyroid.8th edition, Braverman & Utiger eds, Lippincott Williams & Wilkins, 2000. pg.777.