Management of Malignant Pericardial Effusion

Overview

Pericardial effusion is common in patients with malignancy, and the regular use of CT scanning has increased awareness of the condition. The presence of pericardial effusion in these patient however is only secondary to infiltration by malignant cells in 30% of cases , so other causes must be considered such as : radiotherapy, idiopathic, infectious (including tuberculous and fungal), and lymphatic obstruction.

History

The time course over which the pericardial effusion develops has a great impact on the patient's symptoms.

- The pericardial effusion may be asymptomatic
- Shortness of breath is the most common symptom (85%).
- Patients may have pleuritic chest pain
- Other symptoms include shoulder pain, a hacking cough that varies with posture, syncope and palpitations.
- Cardiac tamponade may rarely be the initial manifestation of systemic malignancy.

Cardiac Tamponade

- Cardiac compression caused by a pericardial effusion
- Restriction of cardiac inflow (especially the right heart)
- Tamponade refers to a “continuum” of haemodynamic changes as intrapericardial pressure rises, which are early, followed by echo signs and finally clinical signs.
    - Haemodynamic changes
    - Echo signs
    - Clinical signs →

Dyspnoea Tachycardia Pulsus paraxodus Venous distention Hepatomegaly Hypotension Shock

Investigations

Table 1

Type of investigation	Details of investigation
Bloods	FBC (with differential WCC), UE, ESR, CRP, blood cultures, clotting
CXR	Enlarged cardiac silhouette
ECG	Non specific changes • Low voltage complexes • ST changes • Atrial arrhythmias and AV block • Electrical alternans (17%)
Transthoracic echocardiography (TTE)	Size and location of effusion (>2cm in diastole is significant) Biventricular function Echo features of tamponade (with these features the echo will be reported as 'features of tamponade or heamodynamic compromise') • RA systolic collapse • RV diastolic collapse • Reciprocal respiratory variation of ventricular filling • Doppler evidence of impaired LV filling • IVC dilatation with reduced respiratory variation

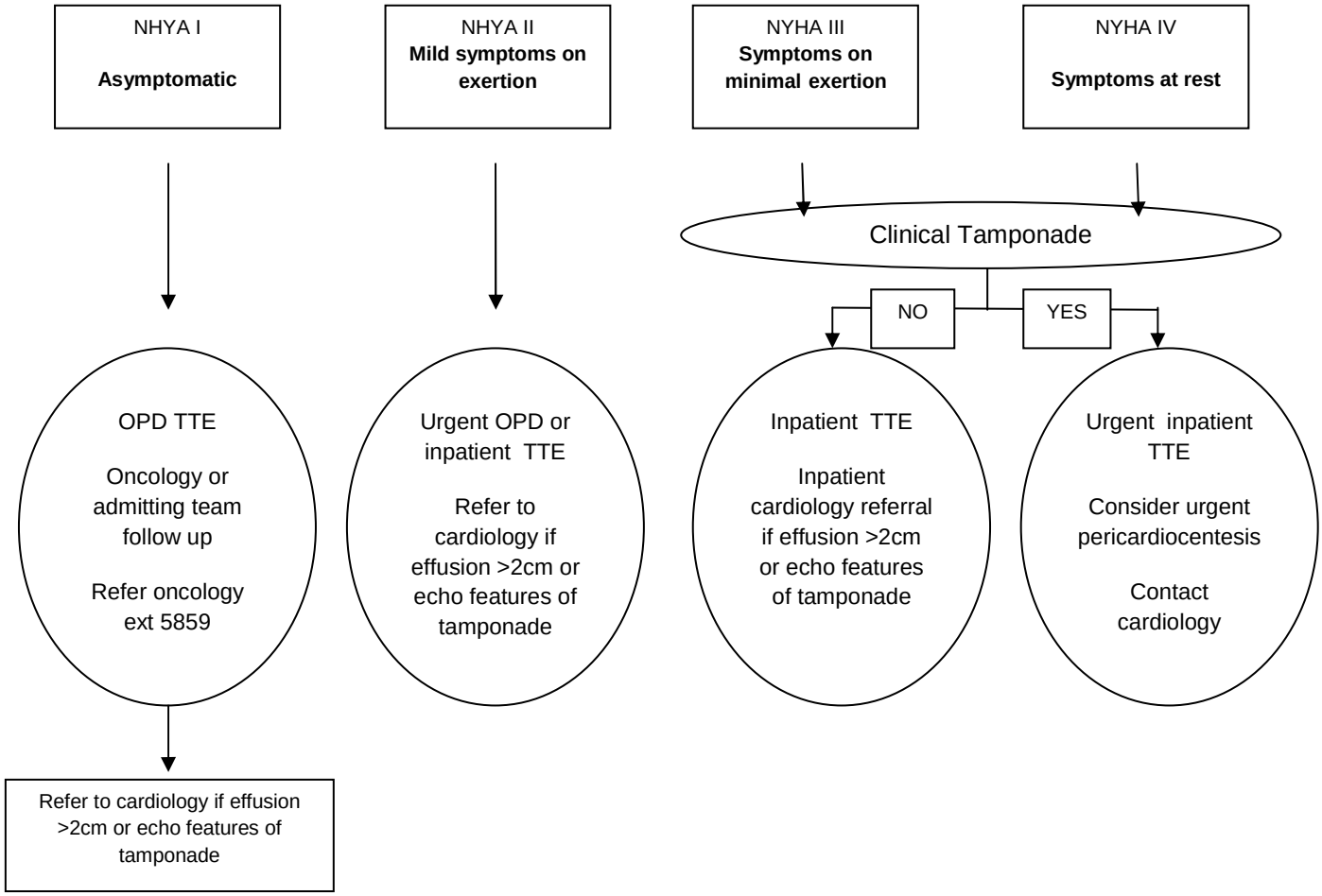
- Further tests may be considered where the effusion is not thought to be directly malignant e.g.: TFTs in hypothyroidism; rheumatoid factor, immunoglobulin complexes, antinuclear antibody test (ANA) and complement levels (which would be diminished) in suspected rheumatologic causes; rickettsial antibodies - if high index of suspicion of tick-borne disease; PPD skin test in suspicion of TB , culture of effusion (if obtained) or sputum/bronchial washings for mycobacteria.

- Tumour markers may be used along with CT scan to confirm progression eg CEA, CA125, AFP

Management

- In symptomatic patients, oxygen and IV access
- Management is determined by the symptoms and clinical signs and is summarised below (figure 1)

Figure 1



Indications for pericardiocentesis

- Cardiac tamponade
- Effusions greater than 2 cm on TTE in diastole
- Suspected purulent or tuberculous pericarditis

Pericardiocentesis can also be considered for effusions 1-2 cm on TTE in diastole for diagnostic purposes. Samples of pericardial fluid should be sent to microbiology and cytology.

In recurrent malignant pericardial effusions a surgical pericardial window should be considered in haemodynamically stable patients.

Incidental finding of pericardial effusion on CT scan

Many effusions are now found incidentally during routine scanning. The management is dependent on the symptoms; therefore the protocol in figure 1 can be followed. If the CT indicates a large effusion or signs of RV compromise then urgent TTE is required.

Organising outpatient echo

The echo request can be requested using the echo request form and forwarded to the cardiology admin team (fax 4461 (internal) or 01793 644461 (external)) within the Wiltshire Cardiac Centre.

Organising urgent cardiology outpatient appointment

A referral, including the echo report, should be sent to the cardiology secretaries fax 6282 (internal) or 01793 646282 (external) and flagged for urgent follow up.

Contacting on call cardiologist

During Monday-Friday 08:00-17:00, a cardiology SpR should be available to bleep via switchboard. At weekends and after hours there is a cardiologist on call contactable via switchboard.

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