Metastasis from unknown primary

Clinical history, physical examination, laboratory tests, CXR

Suspicious site identified?

Yes

Order appropriate investigations

No

Further investigations based on initial assessment and discussion with radiologists

Cervical LN metastases

Yes

Contrast CT of the head and neck +/- MRI of the head and neck

No

Isolated axillary LN metastases in females (adenocarcinoma)

Yes

Mammography +/- ultrasound of breast +/- breast MRI

No

Proper management +/- tissue diagnosis +/- follow-up

Consider

Contrast-enhanced CT thorax, abdomen and pelvis (+/- neck)

Primary identified

Proper management +/- tissue diagnosis +/- follow-up

No primary identified

After discussion with radiologists / nuclear medicine physicians

Suspected primary identified

Whole body PET-CT

Primary identified

Proper management +/- tissue diagnosis +/- follow-up

No primary identified
REMARKS

1 General

1.1 ‘Cancer of unknown primary’ refers to a condition in which a patient has metastatic malignancy without an identified primary source, which is a very heterogeneous disease. Different terms have been used to differentiate patients at different stages of investigative pathway

1.1.1 ‘Malignancy of undefined primary origin’—metastatic malignancy identified on the basis of a limited number of tests, without an obvious primary site, before comprehensive investigation

1.1.1.1 ‘Provisional carcinoma of unknown primary’—metastatic epithelial or neuroendocrine malignancy identified on the basis of histology/cytology, with no primary site detected despite a selected initial screen of investigations, before specialist review and possible further specialized investigations

1.1.1.3 ‘Confirmed carcinoma of unknown primary’—metastatic epithelial or neuroendocrine malignancy identified on the basis of final histology, with no primary site detected despite a selected initial screen of investigations, specialist review and further specialized investigations as appropriate

1.2 Incidence is about 3-5% of all cancers registered in the United Kingdom.

1.3 Chest X-ray (CXR) and CT scan of the chest, abdomen and pelvis are among the initial radiological investigations offered to patients with malignancy of undefined primary origin, depending on patient’s symptoms.

2 Radiography

2.1 Lung Cancer is the most common cause of metastasis from unknown primary. CXR is a cheap and very rapidly performed test to detect lung cancer.

3 CT

3.1 CT of the thorax, abdomen and pelvis with the use of intravenous contrast material is a useful initial investigation.

3.2 The recommendation of CT thorax is also based on its better detection of lung cancer than CXR.

3.3 Contrast-enhanced CT of the head and neck is also useful for identification of primary tumour in patients with cervical lymph node metastases from unknown head and neck primary cancers.

4 Breast Imaging

4.1 Do not routinely offer mammography to women with metastasis from unknown primary unless clinical or pathological features are compatible with breast cancer.

4.2 Breast MRI should be considered in women presenting with isolated axillary adenopathy which is adenocarcinoma on histology and suspicious of breast primary, after negative initial mammography and ultrasonography.
5 MRI
5.1 MRI has superior soft tissue contrast for head and neck imaging.8,11

6 PET scan
6.1 Whole-body Fluorodeoxyglucose (FDG) PET-CT may contribute to the management of patients with cervical adenopathies from occult primary and those with a single metastasis from occult primary. For other cases of metastases from occult primary, the role of FDG PET-CT is limited.13
6.2 FDG PET-CT is not recommended in routine systematic work-up for all cases of metastasis from occult primary.13,14
6.3 FDG PET-CT may be warranted in cases considered for local or regional therapy.14

7 Image-guided biopsy
7.1 It is recommended that needle core biopsy or surgical biopsy should be obtained for histological assessment for evaluation of metastasis from unknown primary.1,2
REFERENCES

2. Taylor MB, Bromham NR, Arnold SE. Carcinoma of unknown primary: key radiological issues from the recent National institute for health and clinical excellence guidelines. BJR. 2012; 85: 661-671.