Pulmonary cannonballs and more like never before

Mohammed H AlShati

Correspondence to

Dr Mohammed H AlShati,
Division of Respiratory and
Sleep Medicine, Department of
Internal Medicine, Al-Adan
Hospital, P.O. Box 46969,
Ahmadi 64020, Kuwait;
dr_alshatti@hotmail.com

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CASE

A 44-year-old man presented to hospital with haemoptysis and progressive dyspnoea. Examination revealed room air oxygen saturation of 91% with diffuse chest crackles, gynaecomastia and hepatosplenomegaly. Scrotal examination was unremarkable. Radiological investigations revealed numerous bilateral pulmonary nodules of variable size (cannonball appearance) (figure 1), gynaecomastia (figure 2A), hepatosplenomegaly and a large retroperitoneal mass (figure 2B). Scrotal ultrasound showed no abnormalities.

Simple urine pregnancy testing was positive, and serum levels of β -human chorionic gonadotropin (β -HCG) and α -fetoprotein were markedly elevated. Transbronchial and retroperitoneal biopsies confirmed the diagnosis of metastatic extragonadal choriocarcinoma and prompt chemotherapy was initiated; however, the patient died shortly thereafter from respiratory failure.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; internally peer reviewed.

Figure 1 Plain posteroanterior chest radiograph (A) and axial CT scan in the lung window (B) showing numerous bilateral well-defined pulmonary nodules of variable size without cavitation, calcification or effusion.

Figure 2 (A) Plain axial CT scan of the chest (mediastinal window) at the level of the carina showing marked proliferation of mammary tissue bilaterally (arrows), characteristic for gynaecomastia. (B) CT scan (delayed contrast phase) of the abdomen revealing a large (9x9 cm) lobulated hypodense retroperitoneal soft tissue mass (arrows) with areas of central necrosis. Splenomegaly without focal lesions is also evident.

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Learning points

- ▶ Choriocarcinoma is a malignant germ cell tumour that usually arises from the gonads and secretes the tumour marker β -HCG. Extragonadal sites of origin are less common and occur mainly along the embryonal midline axis, which includes the prostate, urinary bladder, retroperitoneum, mediastinum and pineal body.
- ▶ The lung is a common metastatic destination for choriocarcinoma. Other differential diagnoses for cannonballs include various infections (septic emboli, multiple abscesses, tuberculosis, nocardia, histoplasmosis, coccidioidomycosis and hydatid cysts); rheumatological diseases (Wegener's granulomatosis, rheumatoid nodules); arteriovenous malformations; and other malignant secondaries (lung, breast, kidney, head and neck, gut and sarcoma).
- ▶ Urine pregnancy testing, a simple and quick method, can be very useful in providing a clue to the diagnosis.¹
- ▶ Definite diagnosis is made by biopsy, which demonstrates dual population of malignant cells (cytotrophoblasts and syncytiotrophoblasts), with positive staining for β -HCG immunoperoxidase.
- ▶ Germ cell tumours are sensitive to chemotherapy, thus urgent treatment is essential.
- ▶ Despite available treatment options of chemotherapy, radiotherapy and surgical resection, prognosis is usually poor in patients with far-advanced widespread disease.²
- ▶ Non-pulmonary visceral metastasis and marked elevation of tumour markers are considered as poor prognostic features.²

REFERENCES

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