Tumour Emboli Causing Multifocal Ischemic Stroke from Intracardiac Malignant Solitary Fibrous Tumour

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Abstract
A 78-year-old woman presented to the emergency department with gait ataxia and diplopia. Her past medical history included the surgical resection of a phyllodes breast tumour 8 years prior, with no known recurrence. A computed tomography (CT) scan of the brain demonstrated multifocal right supratentorial hemispheric subacute infarcts in the frontoparietal, posterior temporal and occipital regions. The patient developed recurrent generalized seizures in hospital. Transesophageal echocardiogram demonstrated a large 2.7 × 1.8 × 0.8 cm mobile echogenic mass attached to the left posterior atrial wall. CT angiogram of the chest revealed the left atrial mass as well as a mass encasing the right bronchus intermedius. The patient opted for comfort care and passed away in hospital. Autopsy revealed the tumour to be a primary cardiac solitary fibrous tumour. We present a case of multifocal ischemic stroke and seizures secondary to tumour emboli originating from intracardiac solitary fibrous tumour.

RESUME
Une femme de 78 ans s’est présentée au service des urgences avec une ataxie et une diplopie de la démarche. Ses antécédents médicaux comprenaient la résection chirurgicale d’une tumeur à phyllodes au sein 8 ans auparavant, sans récidive connue. Une tomodensitométrie (TDM) du cerveau a révélé des infarctus subaigus hémisphériques suprasensoriels droits dans les régions frontopariétale, postérieure temporale et occipitale. Le patient a développé des crises généralisées récurrentes à l’hôpital.

L’échocardiogramme transösophagien a mis en évidence une masse échogène mobile importante de 2,7 × 1.8 × 0.8 cm fixée à la paroi auriculaire postérieure gauche. La tomodensitométrie thoracique révélait la masse auriculaire gauche ainsi qu’une masse recouvrant la bronche intermédiaire. Le patient a opté pour des soins de confort et est décédé à l’hôpital. L’autopsie a révélé que la tumeur était une tumeur fibreuse solitaire cardiaque primaire. Nous présentons un cas d’accident vasculaire cérébral ischémique multifocal et de convulsions secondaires à une embolie tumorale provenant d’une tumeur fibreuse solitaire intracardiaque.
Despite initial clinical suspicion of recurrence of her phyllodes breast tumour with metastases, the final pathology was indicative of a malignant solitary fibrous tumour.

Discussion

Approximately 20% of ischemic strokes are thought to be cardioembolic in nature.\textsuperscript{1} Features on clinical presentation suggestive of cardioembolism include: decreased level of consciousness, maximum severity of symptoms at onset with quick recovery of deficits, symptoms involving multiple vascular territories of the brain and the presence of non-central nervous system emboli. Cardiac sources of cerebral emboli include valvular disease, left atrial or ventricular thrombi, and cardiac tumours. Paradoxical emboli may occur when there is reversal of flow through a patent foramen ovale, atrial or ventricular septal defect.\textsuperscript{1}

Primary cardiac tumours are uncommon with rates reported between 0.001–0.28%.\textsuperscript{2–4} Over 75% of primary cardiac tumours are benign. Secondary cardiac tumours are more common; 2.3–18.3% of patients with a primary neoplasm have cardiac metastases on post-mortem examination. Secondary cardiac tumours may arise from extension of a primary tumour or are metastatic lesions from extracardiac malignancies.\textsuperscript{3,5} Malignancies which most commonly metastasize to the heart and pericardium include mesothelioma, lung adenocarcinoma, melanoma, breast carcinoma and lymphoproliferative neoplasms.\textsuperscript{3,6,7} Clinical manifestations of cardiac tumours vary depending on tumour location. Patients may present with chest pain, heart failure, pericardial effusion, or arrhythmia. Cardioembolic stroke as a presenting feature of a cardiac tumour is an extremely rare occurrence.\textsuperscript{1,6}

Solitary fibrous tumours (SFTs) are neoplasms of spindle cells, which originate from mesenchymal cells. SFTs are usually benign.
benign and classically originate from the pleura, but rarely can arise from extra-thoracic sites.8–10 Few reports have been published on malignant SFTs arising from the myocardium or pericardium, particularly those arising from the left heart.10–13 Metastatic disease from malignant SFTs have been reported originating from lung, skin, liver, bone, and adrenal gland, typically presenting late in the course of the disease.13 To our knowledge, this is the first reported case of embolic lesions involving the central nervous system arising from an intracardiac malignant SFT.

**Conclusion**

Our patient’s clinical presentation is consistent with tumour emboli causing multifocal ischemic stroke and lung emboli from an intracardiac malignant solitary fibrous tumour.
This case highlights the importance of considering a wide differential diagnosis for embolic lesions to the central nervous system when a patient presents with neurologic deficits involving multiple vascular territories. Although cardiac metastases may occur in patients with various primary malignancies, the presentation of multifocal ischemic strokes and seizures secondary to tumour emboli from a primary intracardiac malignant solitary fibrous tumour has not been reported to date.

References