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**“Obliterated right ventricle”: a rare case of cardiogenic shock caused by a massive
right ventricular metastasis and pulmonary embolism from laryngeal squamous
cell carcinoma**

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Short summary:

A 66-year-old male presented with acute respiratory failure and cardiogenic shock caused by a massive right ventricular metastasis and pulmonary tumor embolism from a laryngeal squamous cell carcinoma.

Case presentation:

A 66-year-old male was referred to our institution with cardiogenic shock and respiratory failure two years after total laryngectomy for a squamous cell carcinoma. Transthoracic echocardiography demonstrated a large space-occupying mass that extended from the right ventricular (RV) inflow tract to the apex and further to the outflow tract (Panel A, B, and C; Movie S1). Cardiac computed tomography confirmed a solid mass occupying almost the entire RV cavity (Panel D, E, and F; Movies S2 and S3). The right main pulmonary artery showed no contrast enhancement (Panel G), indicating concomitant pulmonary embolism. Abdominal computed tomography revealed a significant amount of ascites, consistent with right-sided heart failure (Panel H).

Because the patient's haemodynamic status was unstable, he underwent urgent debulking surgery of the mass simultaneously with pulmonary embolectomy. Despite this initially successful intervention, the patient went into multiorgan failure and subsequently died on the 19th post-operative day. The histopathological findings in the specimen from the mass in the RV and the pulmonary artery (Panel I) confirmed a squamous cell carcinoma metastasis to the heart (Panel J) and tumour embolism, respectively, with positive squamous cell carcinoma markers, including p40 (Panel K).

Metastases to the heart from head and neck squamous cell carcinomas are rare. Exclusive cardiac involvement with no other sites of metastasis is even rarer still. The extremely low cardiac output state from the RV cavity that was entirely filled with the metastatic tumour, superimposed by tumour embolism to the lung, ultimately resulted in cardiogenic shock in this case.

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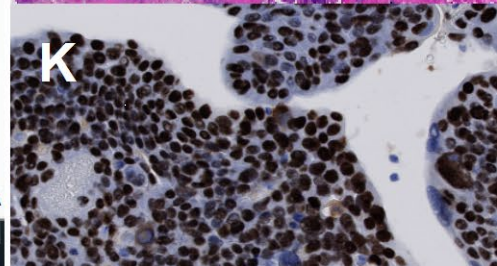
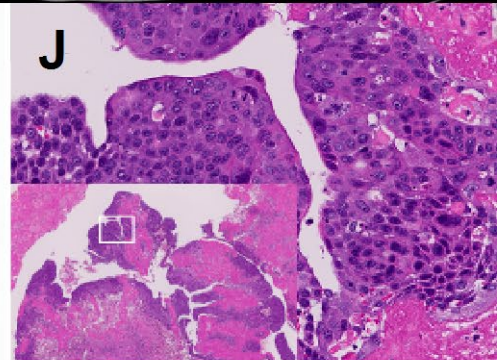
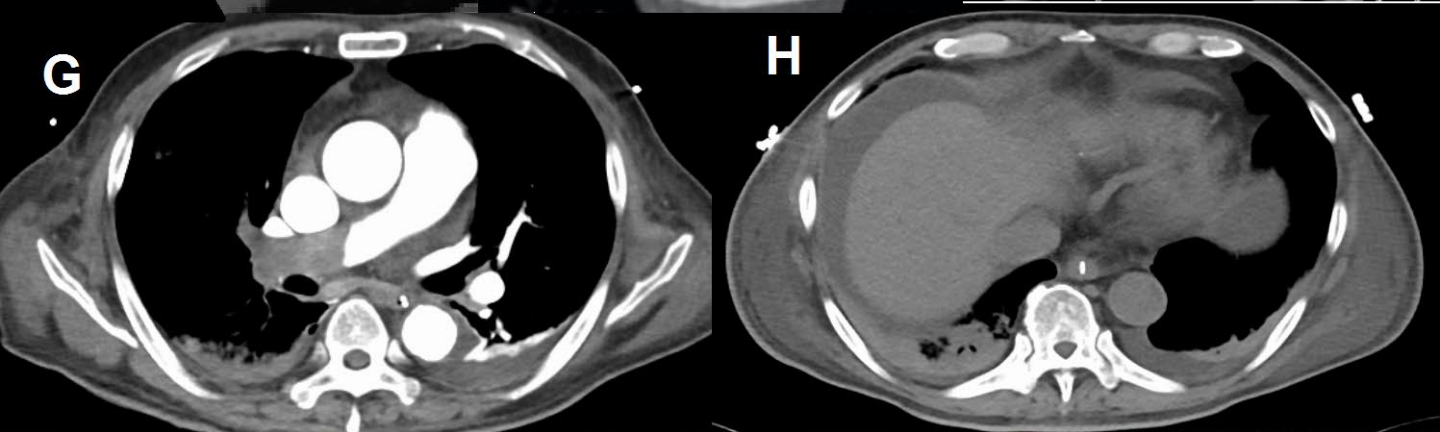
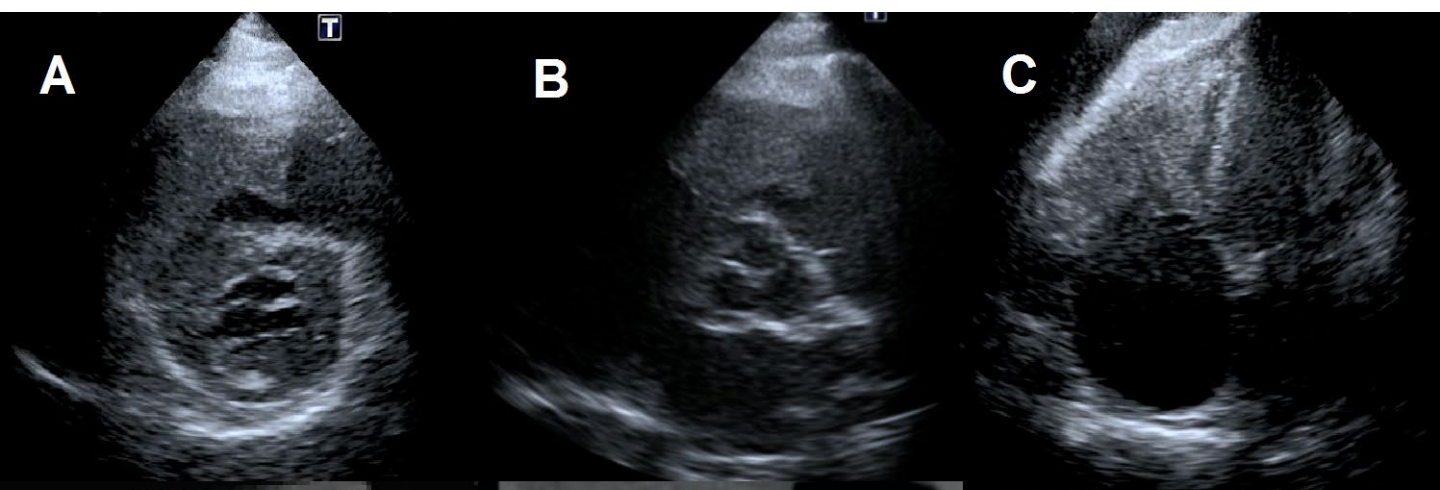
Disclosures: None

Electronic supplementary material

Movie S1: The apical 4-chamber view of transthoracic echocardiography shows a massive right ventricular (RV) tumour extending from the RV inflow tract to the apex.

Movie S2: The 4-chamber view of cardiac computed tomography shows a massive right ventricular (RV) tumour extending from the RV inflow tract to the apex.

Movie S3: The short-axis view of cardiac computed tomography shows a right ventricular (RV) tumour extending from the RV inflow tract through the mid-ventricle and to the RV outflow tract.



RV tumour Tumour from the PA