

Malignant pleural effusion: is CT pulmonary angiogram needed?

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We have read an interesting article from Zarogoulidis *et al.* (1), “Malignant pleural effusion and algorithm management”, which give us the excellent guideline for managing oncologic patient with malignant pleural effusion. In oncologic patients, malignant pleural effusion is a common cause of dyspnea, however pulmonary embolism is a frequent complication which also might present with pleural effusion. The question is “do we have to rule out pulmonary embolism in all oncologic patients who presented with shortness of breath and pleural effusion?”

We present a case of 73-year-old lady with a history of recurrent invasive ductal carcinoma of right breast, diagnosed two months ago but had not initiated any treatment. She came to our hospital for shortness of breath and left pleuritic chest pain. On physical exam, she had hypoxia with oxygen saturation 90% on 2-litre oxygen, decreased breath sound and dullness on percussion on left lung, no any sign of congestive heart failure presented. Breast exam showed a 1-centimeter rubbery mass at surgical site of right breast without any lymphadenopathy. Chest radiography revealed left sided moderate pleural effusion. Thoracentesis was done with 1-litre fluid removed and fluid analysis was consistent with malignancy. Patient was still having shortness of breath with ambulatory oxygen saturation of 85% despite decreased pleural effusion on chest radiography. The following day, she went for CT chest/abdomen/pelvis for staging and incidentally found to have bilateral pulmonary embolism, extensive pleural nodularity with loculated pleural fluid on left side and bone mass on right seventh rib. Therefore, her breathlessness was contributing from malignant pleural effusion and bilateral pulmonary embolism. Her symptoms were getting improved after anticoagulation. Surprisingly, the cytology of pleural effusion showed lung adenocarcinoma instead of breast cancer, which also confirmed by rib mass

biopsy. Two primary cancers from breast and lung with metastatic disease from lung adenocarcinoma were diagnosed. Left pleural effusion might be contributing from metastatic disease and pulmonary embolism.

Pulmonary embolism is a common complication in oncologic patients and unilateral pleural effusion is a common finding on chest radiography. Yap *et al.* (2) examined 48% of pulmonary embolism presented with pleural effusion, mostly unilaterally and small amount but large pleural effusion or bilateral pleural effusion were also observed. Bach *et al.* (3) proposed that 7.3% of oncologic patients had pulmonary embolism and half of them were unexpected finding from CT staging. The incidence of pulmonary embolism is increasing in metastatic disease or patients who received chemotherapy. Hooper *et al.* (4) proposed that unilateral malignant pleural effusion have high incidence of pulmonary embolism at 9.8% and needed to be ruled out by CT pulmonary angiogram when first diagnosed with malignant pleural effusion. We agreed with high probability of developing pulmonary embolism in oncologic patients, however, thoracentesis should be done in the first place for malignant pleural effusion. As our case, if dyspnea not resolved by fluid removal, CT pulmonary angiogram should be done to rule out pulmonary embolism.

We would like to include pulmonary embolism as another possibility of breathlessness in oncologic patient with malignant pleural effusion. If dyspnea was not resolved by fluid removal, CT pulmonary angiogram has a role for exclusion of pulmonary embolism.

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References

1. Zarogoulidis K, Zarogoulidis P, Darwiche K, et al. Malignant pleural effusion and algorithm management. *J Thorac Dis* 2013;5:S413-S419.
2. Yap E, Anderson G, Donald J, et al. Pleural effusion in patients with pulmonary embolism. *Respirology* 2008;13:832-6.
3. Bach AG, Schmoll HJ, Beckel C, et al. Pulmonary embolism in oncologic patients: frequency and embolus burden of symptomatic and unsuspected

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events. *Acta Radiol* 2013. [Epub ahead of print].

4. Hooper C, Laurence I, Harvey J, et al. The Role of CT Pulmonary

Angiography in the Investigation of Unilateral Pleural Effusions. *Respiration* 2013. [Epub ahead of print].



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