中文題目：Dasatinib 導致的雙側乳糜胸

英文題目：Dasatinib related bilateral chylothorax

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Introduction

Chylothorax refers to presence of chyle in the pleural space and associated with high morbidity and mortality. The etiology of chylothorax would be divided into traumatic and non-traumatic cause, accounting around 50% respectively in a large single center study. (1) Diagnosis of non-traumatic chylothorax is usually challenging and may be further classified as malignant or non-malignant related. Identifing the etiology is of great importance in chylothorax management in order to provide definite treatment. We propose an unusual case of dasatinib related chylothorax and make a brief summary of current available literature.

Case report

This 57-year-old male has underlying disease of chronic myeloid leukemia with positive Philadelphia chromosome t(9;22). He had received tyrosin kinase inhibitor(TKI) with Dasatinib since November 2018. However, progressive dyspnea was complained and chest plain film disclosed bilateral pleural effusion at June 15, 2020. No evidence of heart failure, renal failure or liver cirrhosis was identified after series study including cardiac and abdominal echo. Bilateral thoracentesis was then performed as evaluation after discussion with the patient. Surprisingly, milky content of pleural effusion was drained bilaterally. Pleural effusion analysis was performed and revealed lymphocyte predominant(86%) in cell count and high triglyceride level(429mg/dL). Bilateral chylothorax was diagnosed and no traumatic history found. No mass lesion or evidence of thoracic duct damage were identified in chest computed tomography. After review of possible etiology of non-traumatic and non-malignant etiology, Dasatinib related chylothorax is the most favored cause. After switch of TKI to Imatinib, gradually improving bilateral pleural effusion had been noted on series chest plain film.

Discussion

Any disruption of chyle flow in the thoracic duct from cisterna chyli to systemic circulation may cause chylothorax. Traumatic injury including iatrogenic damage during operation or medical procedure is usually obvious. Instead, non-traumatic cause of chylothorax needs more extensive investigation. Malignancy is the first priority to be excluded, including direct invasion of thoracic duct or obstruction of

lymphatic drainage. In our case, there is no existing solid tumor history nor mass lesion with mediastinal involvement defined on image. Besides, bilateral chylothorax accounts for only 16.7% cases and may point to an unusual etiology of diffuse lymph duct damage rather than specific anatomical lesion. (2) Finally, after excluding other common etiology, Dasatinib related chylothorax is presumed in our case.

According to available literature, there is less than 10 cases of Dasatinib related chylothorax reported. Exudative pleural effusion is a common adverse effect of Dasatinib and affects 25% patients but chylothorax being rare. The mechanism is not fully elucidated but inhibition of platelet-derived growth factor receptor beta (PDGFR-β) and Src kinase may contribute to pericyte dysfunction, endothelium permeability and pleural epithelial instability which cause lymph leakage diffusely. (3)

Treatment of Dasatinib related pleural effusion includes short term steroid and diuretics. Repeated thoracentesis also help in symptom relief. However, Dasatinib related chylothorax often needs dose reduction and even switch to another TKI as further management. Furtunately, most of cases present with marked resolution of chylothorax after discontinuing Dasatinib. (4) In our case, ceasing Dasatinib therapy and shift to Imatinib leads to regression of bilateral chylothorax.

References

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