Lymphoscintigraphy and SPECT/CT using ^{99m}Tc filtered sulphur colloid in chylothorax

Nathalie Prevot • Olivier Tiffet • John Avet Jr •
Elske Quak • Marielle Decousus • Francis Dubois

Received: 21 January 2011 / Accepted: 7 March 2011 / Published online: 6 April 2011
© Springer-Verlag 2011

We present a rare case of a chylothorax in a 60-year-old patient after resection of the thymus (myasthenia gravis and thymus hyperplasia). A left-sided chylothorax developed 20 days after the resection with an estimated daily fluid loss of 1.7 l.

Chest lymphoscintigraphy was performed in the anterior and posterior position 60 min after injection of 4×74 MBq ^{99m}Tc filtered sulphur colloid subcutaneously into the first interdigital space and the retromalleolar space of both feet. The images showed abnormal tracer accumulation in the left hemithorax, as seen on the posterior chest lymphoscintigraphic image. SPECT/CT (Symbia T2 Siemens Medical) of the thorax showed abnormal mediastinal tracer accumulation between the left common carotid artery and the left subclavian artery, suggesting rupture of a collateral thoracic lymph duct. Successful ligation of a ruptured ectopic thoracic duct, situated ventral to the left subclavian artery and the phrenic nerve, by video-assisted thoracoscopic surgery was performed and achieved control of the chylothorax.

This case clearly illustrates the added value of SPECT/CT in addition to lymphoscintigraphy for the anatomical location of a traumatic rupture of a thoracic lymph duct. To

our knowledge only a few case reports have been published on this subject [1–4].

Conflicts of interest None.

References

1. Bybel B, Neumann DR, Kim BY, Amin K, Rice T. Lymphoscintigraphy using ^{99m}Tc filtered sulphur colloid in chylothorax: a case report. *J Nucl Med Technol.* 2001;29:30–1.
2. Momose M, Kawakami S, Koizumi T, Yoshida K, Kanda S, Kondo R, et al. Lymphoscintigraphy using technetium- 99m HSA-DTPA with SPECT/CT in chylothorax after childbirth. *Radiat Med.* 2008;26:508–11.
3. Sun SS, Tsai SC, Hsu NY, Shih CS, Lee JK, Kao CH. Preoperative and postoperative lymphoscintigraphy using Tc-^{99m} sulfur colloid in the repair of a lymphatic leak in a patient with traumatic chylothorax. *Clin Nucl Med.* 2000;25:840–1.
4. Peterss S, Gratz KF, Khaladj N, Hagl C, Warnecke G, Fischer S, et al. Lymphoscintigraphic localization of a high-output chylus leak after bilateral lung transplantation. *J Heart Lung Transplant.* 2011;30:481–3

N. Prevot (✉) • J. Avet Jr • E. Quak • M. Decousus • F. Dubois
Department of Nuclear Medicine, Hôpital Nord,
CHU de St Etienne,
St Etienne, France
e-mail: Nathalie.Prevot@univ-st-etienne.fr

O. Tiffet
Department of general and thoracic surgery, Hôpital Nord,
CHU de St Etienne,
St Etienne, France

E. Quak
Department of Nuclear Medicine,
Radboud University Nijmegen Medical Centre,
Nijmegen, The Netherlands