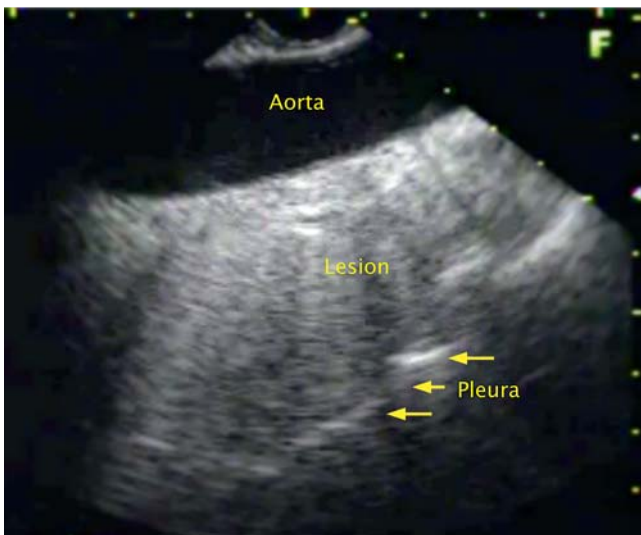


## A rare case of extramedullary hematopoiesis in the mediastinum diagnosed by endoscopic ultrasound



**Fig. 1** Endoscopic ultrasound showing a right-sided peri-esophageal, supra-diaphragmatic lesion in a patient with extramedullary hematopoiesis. Note the hyperechogenic appearance of the lesion.



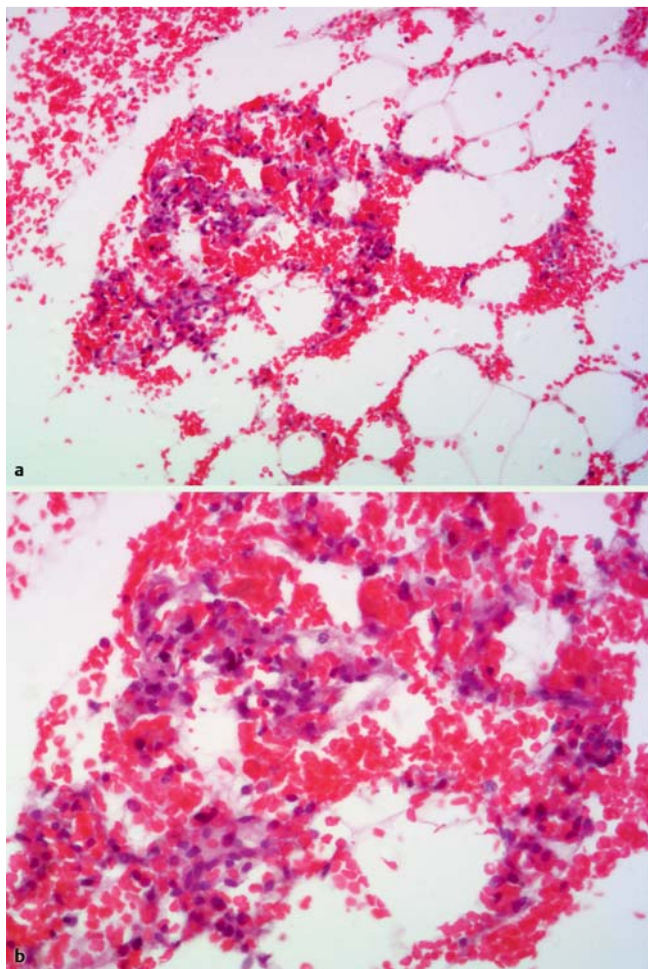
**Fig. 2** Endoscopic ultrasound showing a peri-aortic/vertebral lesion. Note the preserved cleavage plane between the lesion and the pleura.



**Fig. 3** Endoscopic ultrasound-guided fine-needle aspiration of the right-sided supra-diaphragmatic lesion. FNA, fine-needle aspiration.

A 48-year-old woman with chest pain for the preceding 2 months and a previous history of hereditary spherocytosis was referred for endoscopic ultrasound (EUS) to evaluate mediastinal lymphadenopathy and a heterogeneous mediastinal mass diagnosed by computed tomography (CT). EUS (Fujinon, Saitama City, Japan) showed a hyperechogenic and heterogeneous peri-esophageal, supra-diaphragmatic lesion (● Fig. 1) and a peri-aortic/vertebral lesion (● Fig. 2). EUS also demonstrated multiple lymph nodes in the para-esophageal, subcarinal, and right high paratracheal regions, suggesting a reactive process. The patient underwent EUS-guided fine-needle aspiration (EUS-FNA) of the right supra-diaphragmatic lesion, performed with a 19-gauge needle (Cook Medical, Limerick, Ireland) (● Fig. 3). Analysis of the histologic sections confirmed the diagnosis of extramedullary hematopoiesis in the mediastinum (● Fig. 4).

Extramedullary hematopoiesis, the formation of apparently normal blood cells outside the confines of the bone marrow, is a rare condition that is usually associated with a hematologic disorder. It generally occurs in the postero-inferior mediastinum [1,2], frequently involving the liver, spleen, and lymph nodes. However, the condition may also develop in other sites, such as the thymus, kidneys, retroperitoneum, intrathoracic cavity, pleurae, pericardium, and intracranial cavity. Most cases are associated with a hemoglobinopathy that produces severe, chronic anemia, such as thalassemia, hereditary spherocytosis, or hemolytic anemia, or with leukemia, lymphoma, or a myeloproliferative disorder. The differential diagnosis includes neoplastic, infectious, and hereditary or acquired conditions. Magnetic resonance imaging and CT cannot differentiate benign from malignant disease, so invasive procedures are undertaken (trans-thoracic needle biopsy, mediastinoscopy, and thoracoscopy) to establish the diagnosis [3,4]. Recently, EUS has been used in the staging of lung cancer because material can be obtained from mediastinal lymph nodes with a minimally invasive technique (EUS-FNA) [5–8]. In this article, we report a rare case of extramedullary hematopoiesis in the mediastinum diagnosed by EUS-FNA. The procedure is a highly accurate and useful tool for the assessment of mediastinal pathology and should be used to sample tissue from mediastinal lymph nodes or masses adjacent to the esophagus.



**Fig. 4** a,b Histologic sections of the cell block show a proliferation of lymphoid and myeloid cell precursors in blood and adipose tissue, compatible with bone marrow tissue, leading to the diagnosis of extramedullary hematopoiesis.

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## Bibliography

**DOI** <http://dx.doi.org/10.1055/s-0034-1391335>  
*Endoscopy* 2015; 47: E119–E120  
 © Georg Thieme Verlag KG  
 Stuttgart · New York  
 ISSN 0013-726X

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Endoscopy\_UCTN\_Code\_CCL\_1AF\_2AC

Competing interests: None

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