Case Report

Mediastinal Paraganglioma: Specific Endoscopic Ultrasound Features

Shyam Sunder Sharma*, Ashok Jhajharia, Sudhir Maharshi, Shewa Ram, Vijay Shankar, Prashant Katiar

Department of Gastroenterology, SMS Medical College, Jaipur, India

ABSTRACT
Endoscopic ultrasound (EUS) features of mediastinal paraganglioma have not been described. In this paper, we report a female patient presented with cough and chest pain without any neuroendocrinal symptoms. Final diagnosis of mediastinal paraganglioma was made on thoracoscopic biopsy and immunohistochemistry after EUS-guided fine needle aspiration. EUS features of mediastinal paraganglioma are described.

Keywords: endoscopic ultrasound; paraganglioma

Sharma SS, Jhajharia A, Maharshi S, Ram S, Shankar V, Katiar P. Mediastinal Paraganglioma: Specific Endoscopic Ultrasound Features. *Endosc Ultrasound* 2013; 2(2): 105-106

INTRODUCTION

Paraganglioma is a rare neuroendocrine neoplasm that may develop at various body sites like abdomen, thorax, head and neck. Majority of paragangliomas develop in abdomen while mediastinal paraganglioma is a rare mediastinal tumor.[1,2] Posterior mediastinum is the commonest site for mediastinal paraganglioma while anterior mediastinal localization is unusual.[1,3] Most paraganglioma are asymptomatic and present as painless mass. Endoscopic ultrasound (EUS) features of retroperitoneal paraganglioma have been described[4] while that of mediastinal paraganglioma have not been described. In this report we describe the EUS features of mediastinal paraganglioma in a patient who presented with cough and chest pain without any neuroendocrinal symptoms.

CASE REPORT

A fifty-six year old female presented with one month history of chest pain and cough. The patient was not hypertensive and did not give any history related to neuroendocrinal hormone over secretion. Clinical examination was unremarkable. Chest X ray and contrast-enhanced computed tomography revealed mediastinal mass. EUS revealed a mass in AP window which was having certain peculiar characteristics. The mass was inverted triangular shape with bulging peripheries, situated between aorta and left pulmonary artery. The mass was hypervascular in the center and the interface between the mass and vessels described was intact and there was no lymphadenopathy (Fig. 1-3). The left lobe of liver and the left kidney were normal.

EUS-guided fine needle aspiration (EUS-FNA) was done using a 22-G needle (Echotip, Cook Corporation). Slides were prepared and the material was air dried as well as alcohol fixed before sending for cytopathological evaluation (Fig. 4, 5). Good material was obtained on EUS-FNA, but three experienced cytopathologists gave three different reports; final diagnosis of paraganglioma was only made on thoracoscopic biopsy and immunohistochemistry.

DISCUSSION

Mediastinal paraganglioma is a rare mediastinal tumor.[1,2] It constituted 0.3% of all mediastinal tumors in the series described by Cesar *et al.*[1] while no case of mediastinal paraganglioma was found out of 57 EUS-FNA done for mediastinal masses by Zeppa *et al.*[2] Majority of thoracic paragangliomas occur in posterior mediastinum. Out of 16 cases of thoracic paragangliomas reported by Cesar *et al.*[1], only three were located in anterior mediastinum.

Paragangliomas arise from parasympathetic or sympathetic ganglia located in AP window or posterior mediastinum.[3,4] Diagnosis of asymptomatic paraganglioma on any imaging modality is difficult. On FNA cytology, it is difficult to give final diagnosis.[4] In our patient also the tumor could

*To whom correspondence should be addressed.
E-mail: shyamsharma4@rediffmail.com
Received: 2012-10-29; Accepted: 2012-12-10

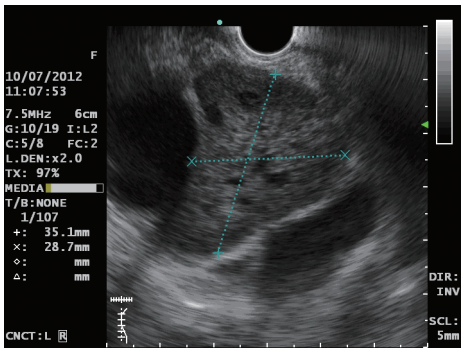

Figure 1. Endoscopic ultrasound showing inverted triangular mass in AP window (35.1 × 28.7).

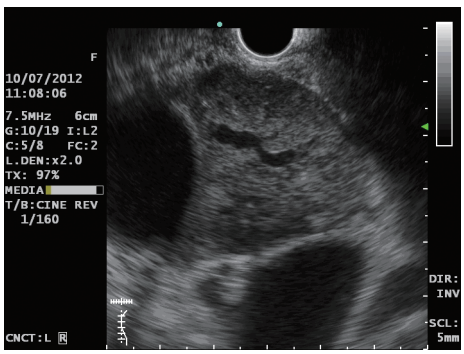

Figure 2. Endoscopic ultrasound showing central vascularity.

be finally diagnosed only upon thoracoscopic biopsy and immunohistochemistry and the tumor was positive for chromogranin, synaptophysin and neuron specific enolase.

EUS features of mediastinal paraganglioma are not described while only in one case EUS features of retroperitoneal paraganglioma are reported.[2] The situations in retroperitoneum and mediastinum are different. Retroperitoneum is a potential big space where tumor can grow freely to any size and can assume any shape while there is little space in mediastinum for tumor to grow and tumor may assume a particular shape. In the present case, there were certain features which were highly suggestive of paraganglioma. It is inverted triangular shape with base of the triangle lying superiorly, because there is sufficient space in AP window where tumor can grow, and apex lying inferiorly, because the tumor has to grow in between the vessels. Besides, there were other features such as rich vascularity of the tumor, bulging peripheries, no invasion of vessels and absence of lymphadenopathy.

We analyzed our 50 cases of various mass lesions involving AP window and subcarinal space, and in none of the cases such typical EUS features were seen. Growth in between the vessels without invasion of vessels was a typical feature of benign paraganglioma. When such appearance is seen on EUS imaging, diagnosis of paraganglioma is quite

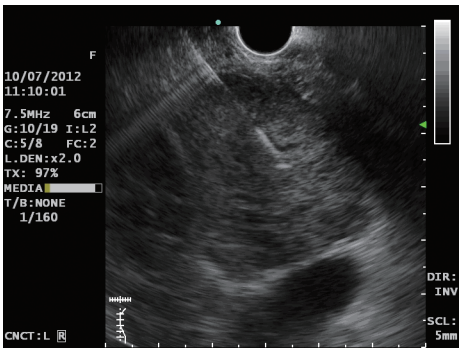

Figure 3. Endoscopic ultrasound FNAC of the mass.

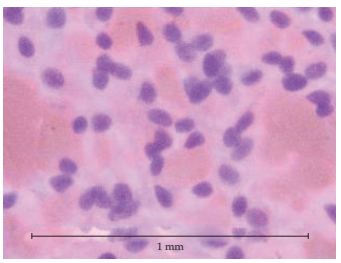

Figure 4. Small ovoid and few spindloid cells with mild nuclear enlargement. Hemotoxlin and Eosin staining (H&E, × 10).

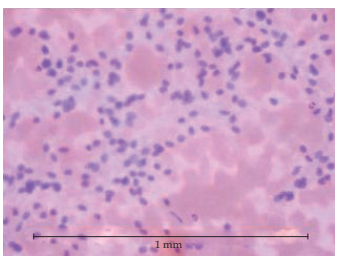

Figure 5. Scattered ovoid to elongated cells with moderately abundant and fine granular cytoplasm. Hemotoxlin and Eosin staining (H&E, × 25).

likely and EUS-FNA may be risky and may not provide final diagnosis.

REFRENCES

1. Cesar AM, Nancy F, Michael NK, *et al*. Mediastinal paraganglioma-Clinical, Immunohistochemical study of 16 cases. *Cancer* 72; 1993: 2358-64.
2. Zeppa P. Barra E, Napolitano V, *et al*. Impact of endoscopic ultrasound-guided fine needle aspiration (EUS-FNA) in lymph nodal and mediastinal lesions: A multicenter experience. *Diagn Cytopathol* 2011; 39: 723-9.
3. Wychulrs AR, Payne WS, Clagett OT, *et al*. Surgical treatment of mediastinal masses, a 40 year experience. *J Thorac Cardiovasc Surg* 1971; 62: 379-92.
4. Akdamar MK, Eltoum I, Eloubeidi MA. Retroperitoneal paraganglioma: EUS appearance and risk associated with EUS-guided FNA. *Gastrointest Endosc* 2004; 60: 1018-21.
5. Gallivan MVE, Chun B, Rowden G, *et al*. Intrathoracic paravertebral malignant paraganglioma. *Arch Pathol Lab Med* 1980; 104: 46-51.
6. Balcombe J, Torigian DA, Kim W, *et al*. Cross sectional Imaging of paragangliomas of aortic body and other branchiomeric paraganglia. *AJR* 2007; 188: 154-8.