

CAS CLINIQUE / CASE REPORT

TRANSDUODENAL EUS-GUIDED FNA OF THE RIGHT ADRENAL GLAND TO DIAGNOSE LUNG CANCER WHERE PERCUTANEOUS APPROACH WAS NOT POSSIBLE

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Eloubeidi MA, Beydoun M, Jurdi N, Husari A. Transduodenal EUS-guided FNA of the right adrenal gland to diagnose lung cancer where percutaneous approach was not possible. *J Med Liban* 2011 ; 59 (3) : 173-175.

ABSTRACT : Although endoscopic ultrasound-guided fine needle aspiration (EUS-guided FNA) of the left adrenal gland is safe and accurate compared to the percutaneous approach, there are no reports to our knowledge about EUS-guided FNA of the right adrenal gland performed in Lebanon and the Middle East. We report the case of a 64-year-old male who presented with a swollen right calf and right flank pain and was diagnosed with deep vein thrombosis with a right calf deep venous thrombosis. A computerized tomography of the chest and abdomen revealed a round solid mass of the right adrenal gland, a right upper lobe mass and centrilobular emphysema of both lungs. Percutaneous biopsy of the right adrenal gland was declined as the patient was quoted a high risk of bleeding. EUS-guided FNA of the right adrenal was performed via the transduodenal approach confirming the final diagnosis of metastatic lung cancer. This case shows that the right adrenal gland can be sampled with EUS-FNA via the duodenal approach to diagnose metastatic lung cancer, especially when the percutaneous approach is not feasible.

INTRODUCTION

Since its introduction to clinical practice in the early 1990's, endoscopic ultrasound-guided fine needle aspiration (EUS-guided FNA) [1], has been utilized to sample various organs adjacent to the gastrointestinal tract including the pancreas [2], liver [3], spleen [4], and the left adrenal gland [5]. We and other investigators [5-6] have shown that sampling the left adrenal is safe and accurate and has a very favorable profile compared to the percutaneous approach since the only organ traversed by the needle is the gastric wall. Furthermore, we described the first case study on duodenal sampling of the right adrenal

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Eloubeidi MA, Beydoun M, Jurdi N, Husari A. Cytoponction à l'aiguille fine de la surrénale droite au cours de l'échoendoscopie transduodénale dans le diagnostic du cancer du poumon quand l'approche percutanée est impossible. *J Med Liban* 2011 ; 59 (3) : 173-175.

RÉSUMÉ : Bien que la cytoponction à l'aiguille fine guidée par échoendoscopie de la glande surrénale gauche soit précise et sans risque en comparaison à l'approche percutanée, il n'existe pas, à notre connaissance, de publications attestant que l'aspiration à l'aiguille fine guidée par échoendoscopie de la glande surrénale droite ait été pratiquée au Liban ou au Moyen-Orient. Nous rapportons le cas d'un homme âgé de 64 ans, se présentant pour un œdème du mollet droit et une douleur au flanc droit, évoquant une thrombophlébite profonde. Une tomodensitométrie thoraco-abdominale a montré une masse arrondie de la surrénale droite, une masse lobaire supérieure droite ainsi qu'un emphysème pulmonaire centrilobulaire bilatéral. Une biopsie percutanée de la surrénale droite était exclue, étant donné le grand risque hémorragique. Une cytoponction à l'aiguille fine guidée par échoendoscopie de la surrénale droite fut pratiquée par un abord transduodénal et permit de confirmer le diagnostic d'un carcinome pulmonaire métastatique. Ce cas démontre qu'il est possible d'investiguer la glande surrénale droite par une cytoponction à l'aiguille fine guidée par échoendoscopie transduodénale dans le diagnostic d'un cancer pulmonaire métastatique, surtout quand l'abord percutané s'avère impossible.

gland with satisfactory results [7]. We report a case of undiagnosed lung cancer whose right adrenal was enlarged and the percutaneous approach was declined due to a very high risk of potential bleeding, as the biopsy required traversing the liver. Transduodenal EUS-guided FNA of the right adrenal gland was performed confirming the diagnosis of metastatic lung cancer. To the best of our knowledge, this is the first case report of EUS-guided fine needle aspiration biopsy of the right adrenal performed in Lebanon and possibly the Middle East.

CASE REPORT

A 64-year-old male, long-time smoker presented with a swollen right calf and was diagnosed with deep vein thrombosis requiring long-term anticoagulation therapy with Coumadin. Few months later, he complained of right flank pain that was initially attributed to kidney stones. Due to the progressive nature of the pain, a computerized tomography (CT) of the chest, abdomen and pelvis was



FIGURE 1. EUS-guided FNA of the right adrenal gland was performed after achieving a safe window. NE denotes needles and RAD denotes right adrenal respectively.

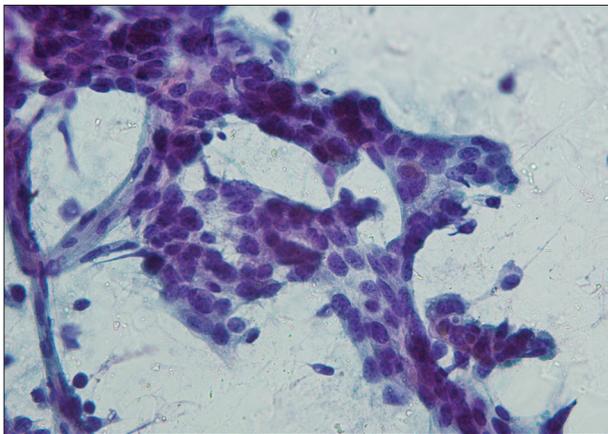


FIGURE 2. Papanicolou stain shows large polygonal dis-cohesive cells with large lobulated nuclei and abundant cytoplasm features consistent with the diagnosis of non-small cell carcinoma. (x 400)

performed. The chest CT revealed a round solid mass with speculated margins at the periphery of the superior segment of the right upper lobe that measured 15 x 13 mm. In addition, there was a large right pre-tracheal lymph node measuring 30 x 26 mm. Another right hilar lymph node was noted measuring 33 x 25 mm. A 73 x 50 mm right adrenal mass was seen as well. Coumadin was discontinued and Enoxaparin subcutaneous injections were initiated. He was referred initially for percutaneous biopsy of the right adrenal gland. In view of high risk of bleeding (nearly 30%) the patient was then referred for EUS-guided FNA of the right adrenal via the transduodenal approach.

EUS was performed solely with the curvilinear echoendoscope (Pentax EG 3630 U). The right kidney was identified from the second portion of the duodenum. With gentle withdrawal of the echoendoscope for a few centimeters cephalad from the right kidney, and keeping a counterclockwise torque on the echoendoscope, the right adrenal gland was identified. Initially, the right adrenal generally appeared retro-caval (behind IVC) and inacces-

sible. However, with gentle maneuvering of the echoendoscope i.e. slight torque and gentle moves of the echoendoscope, a small but safe window was achieved (Fig. 1). EUS-FNA was performed as previously described [7]. The floor of the duodenum was the port of entry of the needle. Prior to needle sampling of the adrenal mass, the presence of vessels along the needle path was excluded by color Doppler. A 22-gauge needle (Wilson-Cook Medical, Inc.) was used. A total of three needle passes were performed. The left adrenal was normal. Another mediastinal lymph node, the left lower para-tracheal lymph node measuring 22 x 12 mm was sampled via the transesophageal approach x 2. Final diagnosis from both the right adrenal and the lymph node confirmed metastatic lung cancer (Fig. 2). The patient was started on systemic chemotherapy for the treatment of lung cancer.

DISCUSSION

EUS is able to image the left adrenal gland in almost all cases (98%) and the right adrenal only occasionally (30%) [8]. We have previously reported that EUS-guided FNA of the right adrenal gland is feasible, safe and minimally invasive [7]. Metastatic cancer to the adrenal glands carries a grave prognosis and precludes curative surgical resection in patients with lung cancer [9].

We demonstrate in this report that access to the right adrenal from the duodenal approach is feasible and successful when the adrenal gland is enlarged. The importance of this approach is the fact that the percutaneous approach was not feasible in this case. Due to its simple approach by crossing only the wall of the duodenum, and if an enlarged gland is reproducibly imaged, EUS-FNA could ultimately and potentially replace the percutaneous approach for sampling the right adrenal.

We believe, based both on our observation in this report and our previous work with EUS-FNA, that the safety profile of EUS-FNA is related to the fact that the GI tract is the only organ or structure traversed to access the right or the left adrenal gland [2-5]. Several EUS-FNA studies of various organs to date showed that traversing the wall of the stomach with a 22-gauge needle has no serious consequences. In contrast, the complication rate of the percutaneous approach can be substantial [9-12]. Reported complications in the literature after percutaneous adrenal biopsies include the following: hemorrhage, pneumothorax, pancreatitis, adrenal abscesses, bacteremia, and needle tract metastases [10]. In a major study that evaluated the complication rate of 1000 CT-guided biopsies, the adrenal gland was the most common site of complications (4 of 11 complications) [11]. In one study that evaluated 277 consecutive adrenal biopsies over a 10-year period, 12 major complications occurred in 8 of 277 biopsies or 2.8%, 5 of these 8 biopsies were of the left adrenal gland and 3 were of the right adrenal gland. The eight complications were hematomas, one requiring adrenalectomy. No deaths were recorded in the study [12]. Extensive review of the literature that included 666 percutaneous adrenal

biopsies showed that the complication rate varied between 0 and 12 percent with an overall complication rate of 5.3% [10].

In summary, this case report suggests that the right adrenal can be sampled with EUS-FNA via a duodenal approach. We highlight, however, that getting the appropriate position for needle placement may require subtle and continuous maneuvering to align the right adrenal with a safe needle path, particularly in avoiding the inferior vena cava. Sampling the right adrenal is much more challenging compared to sampling the left adrenal gland. We suggest that further studies with larger numbers of patients are needed to demonstrate whether our findings are reproducible by other endosonographers. Further study is needed also to identify whether a normal right adrenal can be reproducibly identified with the curvilinear echoendoscope.

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