AACE Clinical Case Rep. 10 (2024) 119–120

Clinical Case Reports™
www.aaceclinicalcasereports.com

Visual Vignette

# Malignant Insulinoma

Sindhu Kishore, MD [1,*], Michael Eerhart, MD [1], Mohammad Hijazi, MD [1], Gehna Kishore, MD [1], Shahla Mallick, MD [2], Elie Klam, MD [3]

[1] Department of Internal Medicine, Good Samaritan Hospital, Cincinnati, Ohio
[2] Department of Critical Care Medicine and Pulmonology, Good Samaritan Hospital, Cincinnati, Ohio
[3] Department of Endocrinology, Good Samaritan Hospital, Cincinnati, Ohio

ARTICLE INFO

*Article history:*
Received 1 December 2023
Received in revised form
11 December 2023
Accepted 17 January 2024
Available online 23 January 2024

## *Case Presentation*

A 42-year-old male with no significant past medical history was admitted to the intensive care unit (ICU) for hypoglycemia-induced seizures. He had been having multiple witnessed seizures for about 2 years all resolving with some form of glucose administration. He had recently been referred to an endocrinologist, who was investigating the etiology of his hypoglycemia. Pertinent laboratory tests showed a random glucose of 60 mg/dL, C-peptide of 5.10 ng/mL, and an insulin level of 70 mcIU/mL on admission. A computed tomography scan of the abdomen showed 3 heterogeneous liver masses. Subsequent magnetic resolution imaging with and without contrast showed 5 masses within the right lobe of the liver, with the largest measuring up to 3.8 cm (Fig. 1). Mild atrophy of the pancreatic tail without a discrete mass was also observed. Endoscopic ultrasound (EUS) interestingly showed 2 lesions in the pancreas (Fig. 2). Both the pancreatic lesion and liver lesions were biopsied using fine-needle aspiration. In the body of the pancreas, lesion A measured 20 × 22.4 mm, and lesion B in the tail measured 10.1 × 12.1 mm. Following EUS, he developed an episode of tonic-clonic seizure was then transferred to the ICU. All biopsy specimens were diffusely positive for chromogranin (Fig. 3) and synaptophysin.

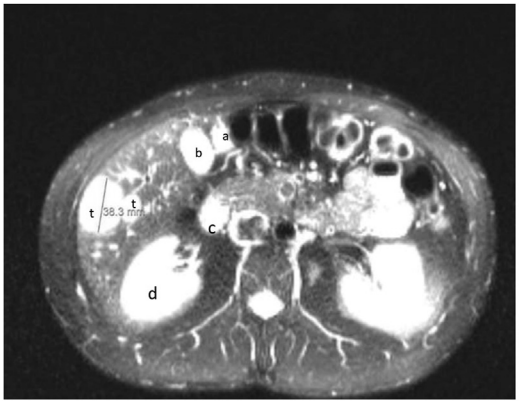


**Fig. 1.** MRI abdomen.

## *What Is the Diagnosis?*

### *Answer: Malignant Insulinoma*

Insulinoma is the most common functional neuroendocrine tumor of the pancreas, with an incidence of 1 to 4 people per million in the general population and is more prevalent in females.[1,2] The most common clinical manifestation is the neuroglycopenic symptoms that includes mental status changes and seizures. Additional symptoms are palpitations, diaphoresis, and amnesia of hypoglycemic episodes. For diagnosis, in addition to fulfilling Whipple's triad, plasma glucose, C-peptide, insulin, and proinsulin levels are also measured.[1] Liver and regional lymph nodes are the most common sites of metastases. It is also associated with multiple neuroendocrine neoplasia type I. Following biochemical testing, localization is needed for precise preoperative purposes. Noninvasive tests include spiral computed tomography, magnetic resolution imaging, transabdominal ultrasound, 111-In-pentetreotide imaging, and fluorine-18-L-dihydroxyphenylalanine positron emission tomography. Some invasive modalities include EUS-guided fine-needle aspiration and select arterial calcium stimulation. Management involves surgical removal of the primary tumor. In the case of liver metastases, hepatic resection is indicated, provided there are no liver function

Informed consent has been obtained by the patient.

* Address correspondence to Dr Sindhu Kishore, Department of Internal Medicine, Good Samaritan Hospital, 375 Dixmyth Avenue, Cincinnati, OH 45220.
*E-mail address:* sindhu_kishore@trihealth.com (S. Kishore).

https://doi.org/10.1016/j.aace.2024.01.004

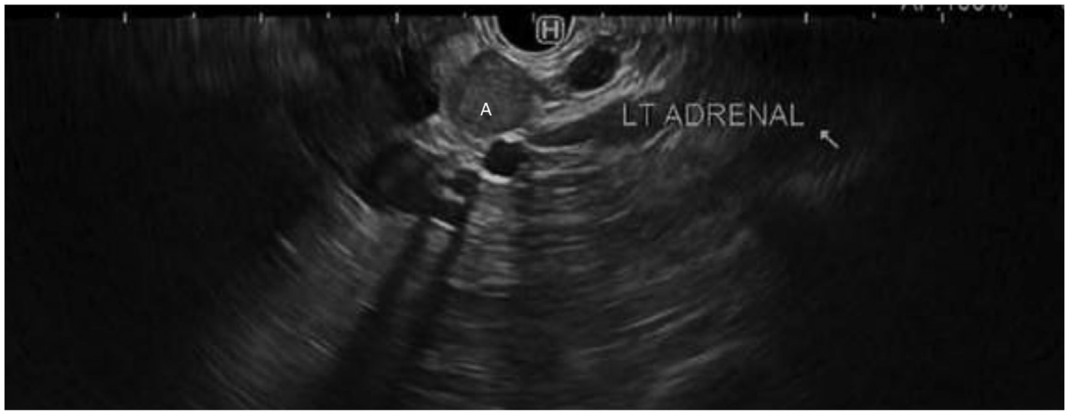


**Fig. 2.** EUS.

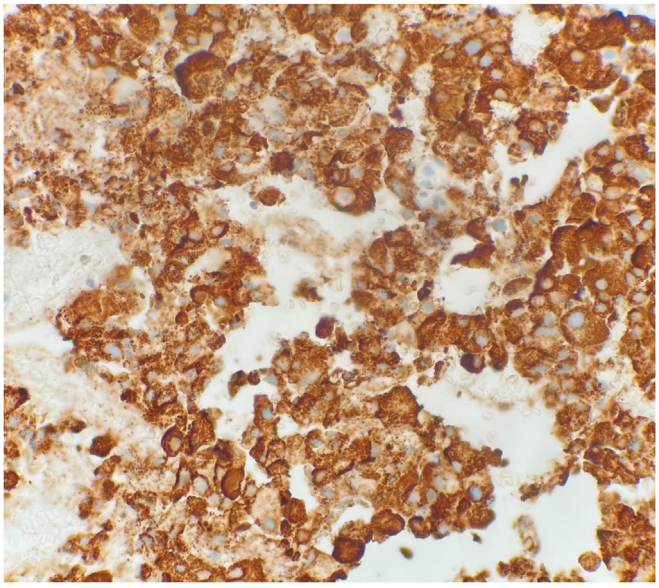

**Fig. 3.** Chromogranin-positive biopsy slide.

derangements or extensive extrahepatic metastases. According to the National Comprehensive Cancer Network, thorough history and physical examination, tumor markers, and imaging are recommended for 3 to 12 months following insulinoma resection. In the ICU, our patient was started on diazoxide, but was transitioned to octreotide due to nausea and vomiting. He subsequently underwent surgical resection of the distal pancreas and right lobe of the liver and is currently being followed by endocrinology and hematology specialties and reportedly has felt better after the surgery.

## Disclosure

The authors have no multiplicity of interest to disclose.

## References

1. Okabayashi T, Shima Y, Sumiyoshi T, et al. Diagnosis and management of insulinoma. *World J Gastroenterol*. 2013;19(6):829. https://doi.org/10.3748/wjg.v19.i6.829
2. Hagel A, Hagel W, Lindner A, et al. Metastatic insulinoma – prolonged survival after multimodal approach. *Med Sci Monit*. 2011;17(8): CS103–CS107. https://doi.org/10.12659/msm.881891