

Randy Leibowitz DO*, Alexander Maraveyas MD*, Frederick Rozenshteyn MD, Tina Park MD

Department of Medicine; Icahn School of Medicine at Mount Sinai Morningside and West

Department of Gastroenterology and Hepatology; Mount Sinai Beth Israel, Morningside and West

Introduction

- ❖ Duodenal adenocarcinoma accounts for only 1-2% of diagnosed gastrointestinal cancers in the United States and more than 50% of all small bowel adenocarcinoma.¹⁻⁶
- ❖ Due to its insidious onset, advanced disease is often established at the time of diagnosis resulting in poor outcomes for patients.
- ❖ Duodenal adenocarcinomas arising from within the duodenal bulb in the D1 segment are a vanishingly rare phenomenon.

Discussion

- ❖ The duodenum comprises 53% of all small bowel neoplasms.⁶
- ❖ Of duodenal tumors, about 57% occur in the D2 segment of the duodenum.²
- ❖ A 2014 meta-analysis of small bowel cancers between 1990-2012 from an institutional registry (excluding ampullary cancers arising from the bile duct mucosa) identified only 30 cases of primary duodenal adenocarcinoma, none of which arose from D1.³
- ❖ A previous 1991 literature review cites 47 cases of primary duodenal adenocarcinoma arising from the D1 segment of the duodenum.²
- ❖ During this study, anatomic distinction between the duodenal bulb and the distal D1 segments was not made.
- ❖ In a study of 217 primary duodenal adenocarcinoma, the median survival was 20 months, with 35% presenting with metastatic disease (39% present with stage III disease).⁷
- ❖ Although small bowel tumors are the third leading cause of gastric outlet obstruction, lesions are typically asymptomatic.
- ❖ A study of 9,700 autopsies found that 67% of small bowel neoplasms are benign, which emphasizes that the prevalence of asymptomatic lesions may be higher than reported.⁸

Conclusion

- ❖ Although it is difficult to distinguish the prevalence of duodenal bulb neoplasms, it has been clearly demonstrated that neoplasms arising from the D1 segment of the duodenum are extremely rare.
- ❖ By presenting this case, we hope to increase the index of suspicion for small bowel neoplasms as part of the differential for gastric outlet obstruction.

Case Presentation

- ❖ A 52-year-old female with a past medical history of laparoscopic adjustable gastric band placement 14 years prior presented with frequent non-bloody, non-bilious emesis, inability to tolerate oral diet, and a 22 kg weight loss over 1 month.
- ❖ A recent esophagogastroduodenoscopy (EGD) during a previous admission revealed a cratered ulcer in the duodenal bulb.
- ❖ An upper GI series was obtained during this admission, revealing a 2 cm mass in the bulb apex which was confirmed by computed tomography (CT).
- ❖ A repeat EGD was performed which identified a firm and friable ulcer with contact bleeding and complete obstruction of the duodenal bulb.
- ❖ Subsequent histopathology confirmed the presence of invasive, moderately differentiated adenocarcinoma.

Images

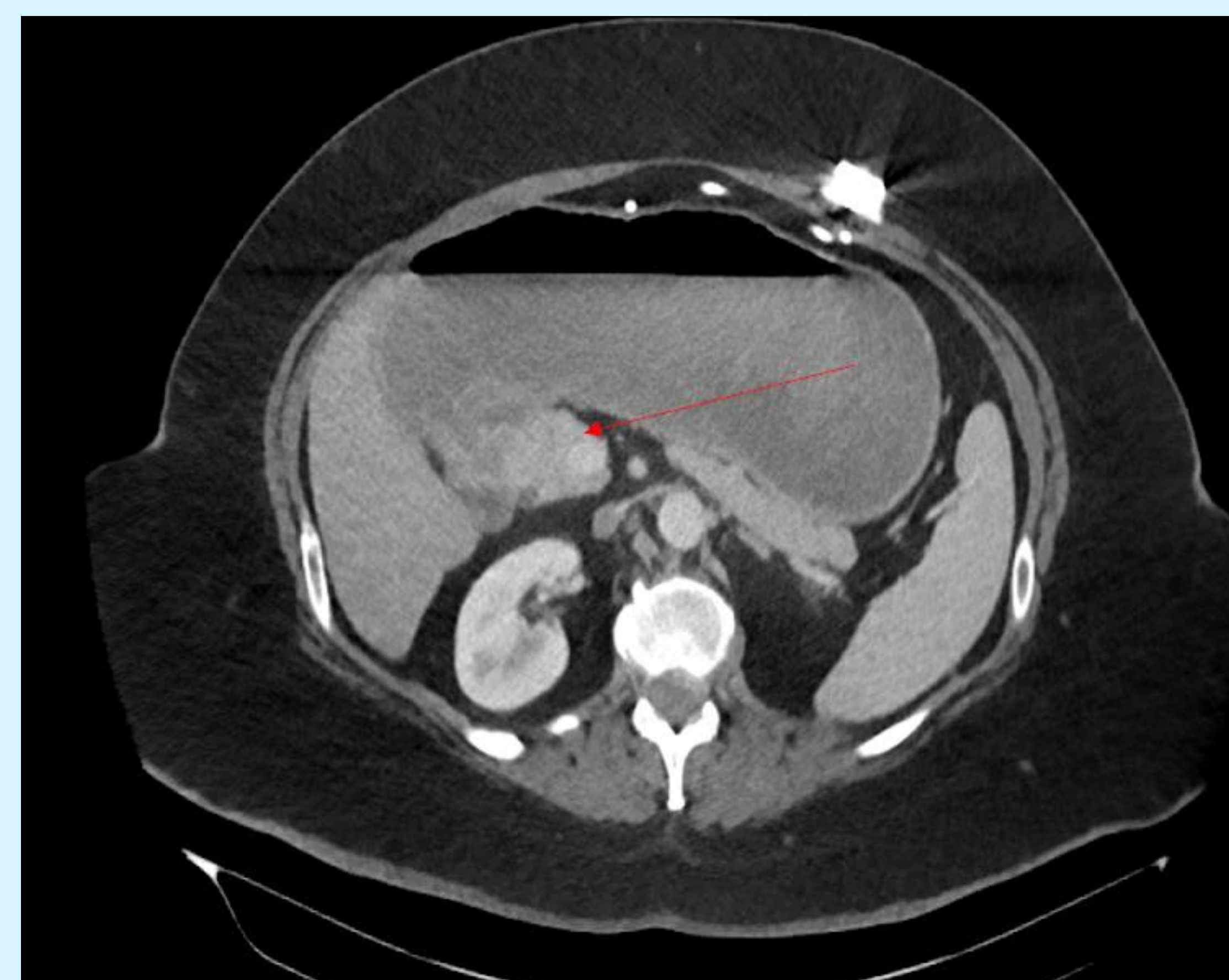


Figure 1: CT demonstration of duodenal bulb mass causing gastric outlet obstruction



Figure 2: Endoscopic image of duodenal bulb tumor

Acknowledgements

1. Duodenal adenocarcinoma: Advances in diagnosis and surgical management (2016) Cloyd, George, Visser et al — World J Gastrointestinal Surg. 2016
2. Ross RK, Hartnett NM, Bernstein L, Henderson BE. Epidemiology of adenocarcinomas of the small intestine: is bile a small bowel carcinogen? Br J Cancer. 1991 Jan;63(1):143-5. doi: 10.1038/bjc.1991.29. PMID: 1989654; PMCID: PMC1971637.
3. Duodenal Adenocarcinoma: Why the Extreme Rarity of Duodenal Bulb Primary Tumors? (2014) Goldner, Stabile — Am. Surg.
4. Small-Bowel Tumors Epidemiologic and Clinical Characteristics of 1260 Cases From the Connecticut Tumor Registry Ioannis Hatzaras, MD; J. Alexander Palesty, MD; Farshad Abir, MD; Paul Sullivan, BA; Robert A. Kozol, MD; Stanley J. Dudrick, MD; Walter E. Longo, MD
5. Thorvardur R. Halfdanarson, Robert R. McWilliams, John H. Donohue, J. Fernando Quevedo, A single-institution experience with 491 cases of small bowel adenocarcinoma, The American Journal of Surgery, Volume 199, Issue 6, 2010, Pages 797-803,
6. Bilimoria KY, Bentrem DJ, Wayne JD, Ko CY, Bennett CL, Talamonti MS. Small bowel cancer in the United States: changes in epidemiology, treatment, and survival over the last 20 years. Ann Surg. 2009;249:63-71
7. Bouthaina S. Dabaja M.D., Dima Suki Ph.D., Barbara Pro M.D., Mark Bonnen M.D., Jaffer Ajani M.D. Adenocarcinoma of the small bowel Presentation, prognostic factors, and outcome of 217 patients. Volume 101, Issue 3 1 August 2004 Pages 518-526
8. Hatzaras I, Palesty JA, Abir F, et al. Small-Bowel Tumors: Epidemiologic and Clinical Characteristics of 1260 Cases From the Connecticut Tumor Registry. Arch Surg. 2007;142(3):229-235. doi:10.1001/archsurg.142.3.229