

# Primary Adenocarcinoma of Duodenum

Shahida Parveen Afridi, Yasir Mohib and Shafiq-ur-Rahman

## ABSTRACT

Primary duodenal adenocarcinoma (PDC) of the distal half of duodenum is extremely rare. We report a case of a young male with adenocarcinoma of third and fourth part of duodenum presenting with long standing proximal small bowel obstruction with associated weight loss and anemia. Esophago-gastro-duodeno-scopy showed a fungating intraluminal growth in third and fourth part of the duodenum. Computed tomography also showed a solid mass in the third and fourth part of the duodenum. Segmental resection of the third and fourth part of the duodenum was performed with single layer extra mucosal duodeno-jejunal anastomosis.

**Key words:** Duodenal tumour. Primary duodenal adenocarcinoma. Small bowel tumour. Fungating mass.

## INTRODUCTION

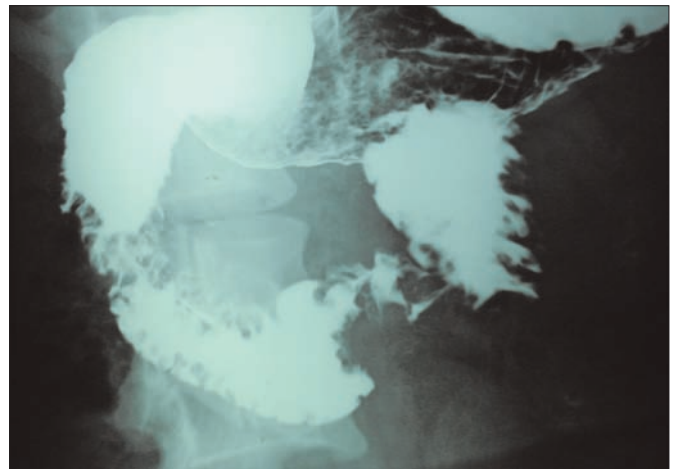
Primary duodenal adenocarcinoma (PDC) is extremely rare malignant neoplasm and when seen is usually in the periampullary region, representing approximately 0.3% of all gastrointestinal tract cancers and it represents approximately 45% of all small bowel cancer. The disease is usually diagnosed at an advanced stage, however, reported 5 years survival ranges upto 33%.<sup>1</sup> This rarity of the small bowel tumour is due to the curious resistance of the small bowel to benign and malignant neoplasm especially in comparison with the proximal stomach, or distal colon due to protective factors against carcinogen exposure and tumour development.<sup>2</sup>

We report a case of adenocarcinoma of second and third part of duodenum occurring in a young male. The purpose of presenting this case report is to describe the presentation, diagnosis, treatment, and outcome of patient diagnosed with duodenal adenocarcinoma.

## CASE REPORT

A male aged 28-years presented with the history of abdominal pain and vomiting since 4 months especially 4-6 hours after eating anything. Vomiting was projectile in nature with associated weight loss and weakness. On examination, he was of lean built and pale, with a positive succussion splash. His initial investigations showed haemoglobin of 9 gm% and ESR of 365 fall after one hour. Barium meal follow through reported dilatation

and mucosal thickening in the proximal duodenum with persistent narrowing seen in the third and fourth part of the duodenum (Figure 1). Stomach, jejunum and ileal loops appeared normal. Esophago-gastro-duodeno-scopy was normal upto the second part of the duodenum with a fungating intraluminal growth in third and fourth part of the duodenum. Biopsy from the growth confirmed a well-differentiated adenocarcinoma. CT scan showed an isodense area measuring 4 x 4 cm causing partial obstruction of the duodenum with proximal dilation. Lymph nodes measuring less than 1 cm were seen around the mass in the mesentery. No evidence of infiltration of surrounding structure was noted.



**Figure 1:** Barium meal showing a fungating intraluminal mass in third and fourth part of jejunum.

Surgical intervention was planned. On exploration, growth was found in the third and fourth part of the duodenum (Figure 2). Segmental resection of the third and fourth part of the duodenum was performed with single layer extra mucosal duodeno-jejunal anastomosis. Patient recovered well and was discharged on 7th postoperative day. Histopathology confirmed well-

Department of General Surgery, Dow University of Health Sciences and Civil Hospital, Karachi.

**Correspondence:** Dr. Shahida Parveen Afridi, Flat No. 3, 2nd Floor, 10-C, 19th Commercial Street, Phase II Ext, DHA, Karachi.

E-mail: drshahishakeel@yahoo.com

Received May 25, 2009; accepted August 18, 2009.

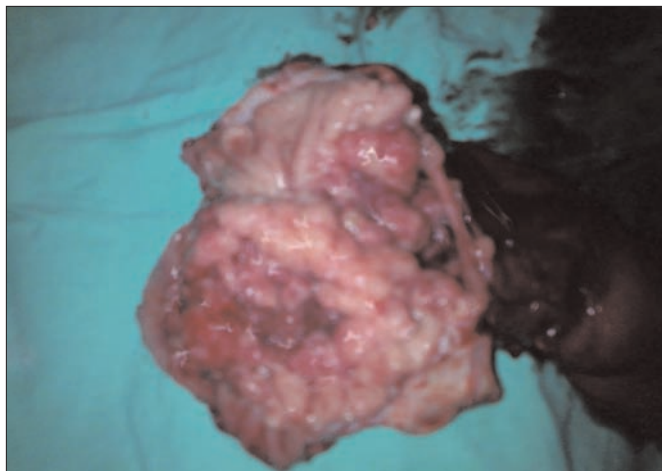


Figure 2: Excised mass.

differentiated adenocarcinoma of the third and fourth part of the duodenum with reactive changes in the lymph nodes. Followed for a period of 6 months, no complication was recorded and the patient refused for chemotherapy radiation.

### DISCUSSION

Duodenal tumours are unique rare tumours and include benign leiomyoma, carcinoid and malignant adenocarcinoma. The most common manifestation is severe iron deficiency anemia.<sup>3</sup> Barium meal follow-through and esophago-gastro-duodenoscopy along with biopsy are effective diagnostic measures to confirm the diagnosis in most of the instances. However, the lesion of the distal duodenum may remain elusive to endoscopy, requiring repeated endoscopies for confirmation of diagnosis.<sup>4</sup> CT provides a comprehensive view of any possible gastrointestinal tract (GIT) pathology as it permits demonstration of the lumen, wall and adjacent extramural structures. CT appears to be a reliable method for predicting duodenal tumour resectability.<sup>5</sup> PDC is generally considered to have a low resectability rate especially distal duodenal tumour are less curable by resection surgery because of invasion of small bowel mesentery.<sup>6</sup> Long-term survival for patients with duodenal adenocarcinoma can be achieved by surgical procedure that produces negative resection margins. PDC as well as other carcinomas in the pancreatic head are managed by standard curative pancreaticoduodenectomy to achieve this goal for most of the lesion and segmental resection has a limited role.<sup>7</sup> In selected patient segmental resection or local resection of the duodenum is indicated as in this case.

Duodenal segmental resection is a straight forward and safe procedure for the treatment of adenocarcinoma of the third and fourth part of the duodenum having a low morbidity and mortality and may be preferred to standard pancreaticoduodenectomy.<sup>8</sup> Early primary duodenal carcinoma can be treated by endoscopic resection as well. Survival depends upon the tumour size, advanced histological grade, and transmural invasion, but nodal spread is not a contraindication to resection.<sup>9</sup> Adjuvant chemo-radiotherapy for node-positive duodenal adenocarcinoma after pancreaticoduodenectomy and segmental resection may improve local control and median survival but does not appear to improve overall survival.<sup>10</sup>

### REFERENCES

1. Gold JS, Tang LH, Gonen M, Coit DG, Brennan MF, Allen PJ. Utility of a prognostic nomogram designed for gastric cancer in predicting outcome of patients with R0 resected duodenal adenocarcinoma. *Ann Surg Oncol* 2007; **14**:3159-67.
2. Agrawal S, McCarron EC, Gibbs JF, Nava HR, Wilding GE, Rajput A. Surgical management and outcome in primary adenocarcinoma of the small bowel. *Ann Surg Oncol* 2007; **14**:2263-9.
3. Anastasopoulos G, Marinis A, Konstantinidis C, Theodosopoulos T, Fraquilidis G, Vassiliou I. Adenocarcinoma of the third portion of the duodenum in a man with crest syndrome. *World J Surg Oncol* 2008; **6**:106.
4. Ryder NM, Ko CY, Hines OJ, Gloor B, Reber HA. Primary duodenal adenocarcinoma: a 40-year experience. *Arch Surg* 2000; **135**:1070-4; discussion 1074-5.
5. Zissin R, Osadchy A, Gayer G, Shapiro-Feinberg M. CT of duodenal pathology. *Br J Radiol* 2002; **75**:78-84.
6. Stell D, Mayer D, Mirza D, Buckels J. Delayed diagnosis and lower resection rate of adenocarcinoma of the distal duodenum. *Dig Surg* 2004; **21**:434-9.
7. Bakeen FG, Murr MM, Sarr MG, Thompson GB, Farnell MB, Nagorney DM, *et al.* What prognostic factors are important in duodenal adenocarcinoma? *Arch Surg* 2000; **135**:635-42.
8. Tocchi A, Mazzoni G, Puma F, Miccini M, Cassini D, Bettelli E, *et al.* Adenocarcinoma of the third and fourth part of the duodenum: results of surgical treatment. *Arch Surg* 2003; **138**: 80-5.
9. Saiura A, Yamamoto J, Yamaguchi. Primary duodenal carcinoma. *Japanese J Cancer Chemotherap* 2004; **31**:327-30.
10. Swartz MJ, Hughes MA, Frassica DA, Herman J, Yeo CJ, Riall TS, *et al.* Adjuvant concurrent chemo-radiation for node-positive adenocarcinoma of the duodenum. *Arch Surg* 2007; **142**:285-8.

