

## Case Report

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# Duodenal adenocarcinoma: a rare cause of intestinal obstruction in young adult

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## ABSTRACT

Primary adenocarcinoma of duodenum is a very rare and aggressive malignancy, found in middle or elderly age group and usually arising in the second portion of the duodenum, followed by third or fourth. Cancers of the first portion of the duodenum, especially the duodenal bulb are extremely rare. The causative factors for duodenal adenocarcinoma are dietary factors, ingestion of alcohol, coffee and use of tobacco. It may occur from duodenal polyps present in familial polyposis or may be associated. In young age it is associated with polyposis syndromes or with Crohn's disease affecting small bowel. Very few reports discuss the diagnosis and treatment of such malignancy and very few cases have been reported in young age less than 30 years. We are reporting a case of 22 years old gentleman who presented to us with history of recurrent abdominal pain and vomiting. After evaluation it was diagnosed as adenocarcinoma of third and fourth part of duodenum without any associated syndromes or inflammatory bowel diseases and was managed by surgical resection and chemotherapy.

**Keywords:** Duodenal adenocarcinoma, Young adult, Intestinal obstruction

## INTRODUCTION

Duodenal adenocarcinoma is rare cancer that accounts for less than 1% of all gastrointestinal cancers.<sup>1</sup> The causative factors include increased intake of bread, pasta, sugar and red meat, alcohol, coffee, tobacco and reduced intake of fruits and vegetables.<sup>2</sup> It can arise from duodenal polyps seen in familial adenomatous polyposis (FAP) and Gardner syndrome, or can be associated with celiac disease.<sup>3</sup> They mainly occur in second part of the duodenum, followed by third and fourth.<sup>4</sup> Usually it is seen in middle or elderly age person. In young age, it is associated with polyposis syndromes or with any inflammatory diseases affecting small bowel.<sup>5</sup> But without such syndromes or diseases, it is rare in young age. We are reporting a case of 22 years old male who presented to us with history of recurrent abdominal pain. After evaluation it was diagnosed as adenocarcinoma arising from junction of third and fourth part of

duodenum without any genetic syndromes or inflammatory disease.

## CASE REPORT

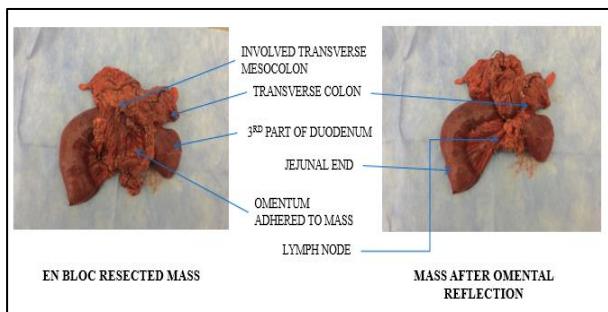
A 22 year gentleman presented with complaints of multiple episode of non-projectile, bilious vomiting for two months and insidious onset, dull pain in upper central abdomen for one month with history of weight loss of about 6 kg in a month. No other significant family or past history was present. On per abdominal examination, an epigastric lump of size 4x5 cm was present which soft, non-tender and side to side mobile with both lateral and lower border palpable. The digital rectal examination and rest of systemic examination was normal. On investigations, CECT abdomen revealed gross dilation of stomach and duodenum with an irregular lobulated mildly enhancing soft tissue lesion of approximately 48x33x55 mm seen at third and fourth part of duodenum causing near complete luminal obliteration.

On Gastroduodenoscopy an ulceroproliferative growth was present at third part of duodenum and scope could not be negotiable through fourth part. Histopathological examination showed a moderately differentiated adenocarcinoma. The CEA and CA 19.9 were normal.

Exploratory laparotomy with resection of involved small bowel (from D2, D3 junction till 10 cm distal to DJ junction) and infiltrated transverse colon was done with dudeno-jejunostomy (side to side) and colo-colic anastomosis, gastrostomy, feeding jejunostomy right perianastomotic right pelvic drain was inserted. Operative Finding was a 5×5 cm growth at dudeno-jejunal junction infiltrating into transverse colon. 2×2 cm lymph node was present at paroduodenal region and mesentery. There was no ascites. Liver and omentum were normal.



**Figure 1: Picture of transverse cut section of CECT abdomen showing duodenal growth at third and fourth part.**



**Figure 2: Resected specimen showing growth in fourth part of duodenum, proximal jejunum, attached mesentery, surrounding transverse mesocolon and omentum with uninvolved related transverse colon.**

Post-operative course was uneventful. On histopathological examination a 2×2×1 cm growth was present at third and fourth part of duodenum, well differentiated adenocarcinoma duodenum. G1 well differentiated. All margin were uninvolved and lymph vascular invasion was present. Regional lymph nodes were involved 4/10. pT3N1M0. Patient was planned for 8 cycles of chemotherapy (FOLFOX) as per latest NCCN guidelines. The patient completed four cycles of chemotherapy and is doing well.

## DISCUSSION

Most common site of adenocarcinoma in small bowel is duodenum with peak incidence in seventh decade of life. It can arise sporadically or can be associated with polypoid syndromes or inflammatory diseases.<sup>4</sup> Those arising in association with syndromes or Crohn's disease tends to occur at earlier age. But without such syndromes, occurrence in young age is very rare. The symptoms are vomiting, abdominal mass, pain, unexplained weight loss, hematemesis and obstructive jaundice. The diagnostic investigations are upper gastrointestinal endoscopy, CECT and barium study. Upper gastrointestinal endoscopy shows the location of the tumor and biopsies can be taken. CECT helps to confirm the anatomical location, operability and to rule out any metastasis. If you are suspecting any polypoid syndromes colonoscopy should be done. Tumors of the second part of duodenum typically require pancreaticoduodenectomy because of proximity to pancreatic head, ampulla of vater and distal bile.

Conversely, tumors occurring in the first, third or fourth portion of the duodenum may be managed by either pancreaticoduodenectomy or segmental resection. Cloyd et al, reported that radical resection was associated with a greater number of LNs excision but no improvement in survival.<sup>7</sup> Although pancreaticoduodenectomy is usually required for technical reasons, in some situations, the study suggests that segmental resection is an appropriate strategy as long as negative margins can be obtained.<sup>7</sup> Adjuvant chemotherapy and radiation are important components of treatment for patients at high recurrence risk. The five year survival rate varies widely according to different series published, but is generally reported to be >40% in case of curative resection.<sup>6</sup> Poor prognostic factors include regional lymph node metastasis, transmural involvement and perineural invasion.

## CONCLUSION

Duodenal adenocarcinoma is a very rare cancer and generally diagnosed at an older age. Current case of 22 year old gentleman is probably the youngest age reported without any important risk factors and managed with surgical resection and chemotherapy as per NCCN guidelines.

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