Jejunal Adenocarcinoma—A Case Report with Review

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Abstract Primary Small bowel tumours are rare accounting for only 3–6% of GI neoplasm; 1–2% of these are malignant. Their presentation is usually with nonspecific symptoms that causes delay in diagnosis and consequently a worse outcome for the patient. We report a case of Jejunal adenocarcinoma where early diagnosis and treatment lead to good outcome

Keywords Small bowel tumors · Small bowel malignancy · Jejunal adenocarcinoma

Introduction

Malignant tumors of the small intestine are among the rarest type of gastrointestinal cancers. Because of their infrequent occurrence and multitude of tumor types (e.g. adenocarcinoma, carcinoids, sarcomas & lymphomas) not much is known about their natural history and presentation. Diagnosis is usually delayed. Surgical treatment is limited by size of lesion.

Case

We Report a Case of Jejunal Adenocarcinoma

A 47 year female presented with pain all over abdomen for one and a half months and vomiting for 15 days duration,

without any positive history of distension of abdomen, postprandial fullness, constipation, hematemesis, malena, loss of appetite, loss of weight. Patient was known hypertensive and on treatment for 2 years. Past/family/personal history was not significant.

On examination patient was averagely built and nourished with pulse of 68/min regular, BP of 130/80 mm Hg and on antihypertensive treatment without any pallor, cyanosis, icterus, lymphadenopathy, and edema. Systemic examination of CVS, Respiratory system, and CNS was normal. Per Abdomen finding were suggestive of mild tenderness in epigastrium and no distension, no organomegaly, no ascites, no lump palpable.

On Investigation: Patient had anemia Hb 10gm/dl. WBC count of 9,900/cumm, Platelet—4.15lakhs/cumm, Blood sugar random of 112 mg/dl, Blood urea 36.6 mg/dl, S. Creatinine of 0.7 mg/dl, HIV & Hbs Ag was negative. LFT's were within normal limits, S.electrolytes were normal. USG abdomen & pelvis was s/o diffuse hypoechoic mural thickening of 7–9 mm for 3–4 cm of proximal jejunal coil noted. Rest of USG abdomen was normal. Barium meal follow through was s/o possibility of extrinsic compression of 3rd part of duodenum & gave possibility of malrotation. CT abdomen plain & contrast was s/o thickened wall of duodenojejunal junction and proximal jejunum likely to be of neoplastic etiology. Rest of the CT abdomen was normal (there was no hepatic metastasis nor was there any free fluid in abdomen). Upper GI endoscopy was suggestive of growth with narrowing of duodenojejunal flexure, scope could not reach up to growth hence biopsy could not be taken.

With a diagnosis of ulcerative growth of duodenojejunal flexure we have prepared and explored the patient. There was a growth found in jejunum just 2 cms away from duodenojejunal flexure. Growth was mobile with, no metastasis in liver, no lymph nodes in mesentery and no

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ascites found. Growth was mobilized and segmental resection of jejunum was done. Dudenoejejunal anastomosis was carried out. The histopathological examination revealed Ulcerated well differentiated adenocarcinoma of the jejunum with stage III (TNM) with free margins, 4/12 regional nodes positive for metastasis.

Ba meal follow through on 12th post operative day revealed early flow of barium through anastomosis & no evidence of narrowing & obstruction. Pt was discharged with advice to follow up every 3 months and or any complaints develop before that. Pt was given chemotheapy FOLFOX 4 regimen (6 cycles). Patient is absolutely fine even after 12 months follow up and gained 8 kg weight.

Discussion

Small bowel carcinoma is rare compared with gastric and colorectal cancer. Although the small bowel comprises 75% of the GI tract length and 90% of mucosal surface area less than 2% of GI malignancies arise from the small intestine [1]. This apparent neoplastic resistance finds its eventual explanation in the bacterial content capable of transforming food components into carcinogens along with the large amount of alkaline fluid secretion, rapid transit time and high concentration of the enzyme benzopyrene, hydroxylase, which reduce the mucosal contact with potential carcinogens. Many theories have been postulated for low incidence of small bowel malignancy. Large volume of alkaline fluid in small bowel, presence of various enzymes, high Immunoglobulin A levels cause dilution and detoxification of potential carcinogens, and also prevent prolonged contact of such carcinogens with the mucosa. Small Bowel also has a very limited number of bacteria as compared to the colon that are capable of transforming potential procarcinogens into their active breakdown products. As the small bowel Ca is rare not much of information is available regarding the molecular aspects of these tumors, which could be of help in the planning, prevention, diagnosis and management of these tumors.

Small intestine cancers have a low prevalence in Asian countries as compared to the west. Males have a higher predilection for these malignancies. Increasing age is associated with higher incidence of small intestinal cancers [2]. Adenocarcinoma accounts for 40% of small bowel malignancies, others include carcinoids, lymphomas, GI stromal tumours as well as metastasis from melanoma, breast, lung and renal cancer. The frequency of small bowel tumor is higher in the duodenum (38–55.2%) and decreases distally, with 17.6–33.3% cases localized in jejunum and 13–23.8% in the ileum [3].

Small bowel cancers are asymptomatic in the early stages. As the disease progresses, symptoms develop. The

nature of symptoms is nonspecific and as a result there is delay in diagnosis which averages 6–8 months. Abdominal pain and weight loss are the commonest symptoms. Bleeding, vomiting, nausea and obstruction are less common. Physical examination—rarely a palpable abdominal mass or tender abdomen, possibly with peritoneal signs, maybe found due to obstruction or perforation. Reasons for diagnostic delay include the nonspecific presentation, the lack of awareness of the diagnosis and the inaccessibility of small bowel to investigation. Laboratory tests may show mild anemia due to chronic blood loss, liver function test may reveal hyperbilirubinemia in case of duodenal tumours. Elevated transaminases may be found in case of liver metastasis. The diagnosis of small bowel carcinoma may be elusive. Upper GI series with small bowel follow through shows abnormalities in 53–83% of patients with small bowel cancers. Abdominal CT scan will reveal exact site and extent of local disease as well as the presence of liver metastasis. Upper GI endoscopy with small bowel enteroscopy may allow identification and biopsy of lesions in duodenum and jejunum. CT is frequently used to assess the abdominal cavity. The accuracy of abdominal CT in detecting primary small bowel tumours is poor—reported as 57% in one study of 85 patients [4]. It is a useful staging procedure, but, given the poor sensitivity for small bowel pathology, abdominal CT should be used in concert with other imaging modalities. Barium contrast studies are the standard test for intraluminal or mucosal abnormalities beyond the duodenojejunal flexure, but have limited sensitivity [4]. Small bowel enteroclysis is more sensitive than small bowel follow-through and involves delivery of barium to the small bowel via an intestinal tube. Push enteroscopy, using a paediatric colonoscope, is an alternative, but does not visualize the entire small bowel. Video capsule endoscopy has shown promise in the diagnosis of small bowel disorders [5, 6].

Capsule endoscopy has become the most sensible and specific diagnostic method for small bowel disease. It has increased the diagnostic rate of small bowel tumors, most of them detected in cases of obscure gastrointestinal bleeding, with 50–60% of these being malignant. The capsule has overcome the low sensitivity of barium studies (30–50%), and the discomfort and complexity of push and Sonde enteroscopy. The upper gastrointestinal endoscopy cannot pass beyond the Treitz ligament so, although it identifies around 93% of duodenal tumors, its overall sensitivity is only 31%. CT scan misses 43% of small bowel tumors [3].

Surgical resection provides the only hope for cure for adenocarcinoma of the small bowel. Patients with a lesion in the proximal duodenum should undergo pancreaticoduodenectomy. For lesions elsewhere in the small bowel the treatment is wide excision. Surgery in the form of intestinal

obstruction may also be indicated for palliation in patients with symptomatic advanced disease [7, 8].

Curative resection of small bowel tumors is obtained in about 50% [9]. In a recent review, made by Agrawal et al [10], curative resection for adenocarcinoma was performed in 54.5% of cases, with a 3.6% postoperative mortality rate. Despite curative surgery, the disease will eventually recur in half of the patients with lymph node, hepatic or lung metastasis.

Chemotherapy is of benefit as an adjuvant to surgery, especially when there is metastatic disease. Jigyaru et al studied 14 subjects with metastatic small bowel adenocarcinoma treated with chemotherapy regimens, mostly containing 5-Fluorouracil (5-FU). Two minor responses and one partial response occurred with a median survival of 9 months. Ouriel and Adams reported a mean survival of 10.7 months in 6 patients with metastatic disease treated with 5-FU-based regimens, compared with a mean survival of 4 months in 6 patients with metastatic disease who received no chemotherapy. Crawley et al. reported eight patients with advanced small bowel adenocarcinoma treated with infusional 5-FU-based regimens and found a response rate of 37.5% and a median survival of 13 months. Polyzos et al. reported minor responses, with improvement of symptoms, using salvage irinotecan therapy for 5-FU-refractory small bowel adenocarcinoma. Bettim et al. found that the FOLFOX-4 regimen (which is a combination of infusional 5-FU, oxaliplatin, and leucovorin) could be safely administered as adjuvant chemotherapy in three subjects with resected small bowel adenocarcinoma associated with celiac disease.

Veyrieves et al. reported an overall 5-year survival of 38%; with palliative treatment alone the 5-year survival was 0%, while it was 54% after curative resection. In patients undergoing curative resection, the 5-year survival was 63% when lymph nodes were not involved and 52% when they were, 57% when the serosa was not involved and 53% when it was, 56% when the tumor was well or moderately well differentiated and 40% when it was undifferentiated. Other factors influencing long-term survival were the emergency presentation, the site, the multiplicity, and the size of the tumor.

Radiotherapy does not seem to be effective or benefit survival. It is technically difficult to localize the target field due to the mobile nature of the small intestine mesentery [3].

The prognosis of small bowel tumors is poor, with most series reporting a 5-year-survival of 15–35%. After curative surgical resection this rate increases to 40–65% in most studies. In 1999, Howe et al presented a review of 4995 cases of adenocarcinoma, and defined patient age over 75, duodenal localization, advanced stage and absence of surgery treatment as negative prognosis factors. Adenocarcinoma seems to be the second histologic type with the best survival rate, as reported by Talamonti et al. In this review

Fig. 1 Upper GI Endoscopy suggestive of growth in the first part of jejunum near DJ flexure

37% of the patients with adenocarcinomas were alive 5 years after the diagnosis with a median survival of 30 months, surpassed only by carcinoids (64%), and in contrast to sarcomas (22%) and lymphomas (29%). Median survival for incomplete resected adenocarcinomas was 9 months, increasing to 40 months, with a 5-year survival rate of 42%, for completely resected adenocarcinomas, which supports the positive prognostic value of surgery.

Occasionally, exploratory surgery is appropriate, particularly when anaemia and abdominal pain coexist and the results of all other investigations have been negative.

Conclusion

Our case intends to highlight the fact that Small Bowel tumors are always a diagnostic challenge and frequently

Fig. 2 Specimen showing growth in the jejunum

present with nonspecific clinical symptoms. Diagnosis requires high index of suspicion and early investigation.

Small bowel malignancy should be considered when more common causes have been excluded, especially if there are general features suggestive of malignancy, such as anorexia, abdominal pain, and vomiting or weight loss. Abdominal CT scan with small bowel follow-through is the minimum requirement. If this is negative, further investigation like Barium Enteroclysis followed by Video Capsule Endoscopy should be considered. Surgical resection is the hope for cure of adenocarcinoma of small Bowel (Figs. 1 and 2).

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