

Original Research Article

Clinical presentations of small bowel tumor

Arige Subodh Kumar^{1*}, N L Eshwar Prasad², Avula Krishnaveni³, Anuradha⁴

¹In-charge Professor, Department of Plastic Surgery, Gandhi Hospital, Secunderabad, India

²Associate Professor, Department of General Surgery, Government Hospital, Nizamabad, India

³Civil assistant Surgeon, Gandhi Hospital, Secunderabad, India

⁴Tutor, Department of Biochemistry, SVS Medical College, Mahboobnagar, India

*Corresponding author email: arigesubodh@yahoo.com

	International Archives of Integrated Medicine, Vol. 3, Issue 6, June, 2016.	
	Copy right © 2016, IAIM, All Rights Reserved.	
	Available online at http://iaimjournal.com/	
	ISSN: 2394-0026 (P)	ISSN: 2394-0034 (O)
	Received on: 26-05-2016	Accepted on: 01-06-2016
	Source of support: Nil	Conflict of interest: None declared.
How to cite this article: Arige Subodh Kumar, N L Eshwar Prasad, Avula Krishnaveni, Anuradha. Clinical presentations of small bowel tumor. IAIM, 2016; 3(6): 130-135.		

Abstract

Introduction: Small bowel tumors are amongst the uncommon in the gastrointestinal tract. The accumulation of data regarding their clinical presentation, etc. has been difficult. Most of the symptomatic lesions and tumors detected during surgery are malignant.

Aim: To observe the clinical presentations of the small bowel tumors.

Materials and methods: This was a prospective study of 17 cases of small bowel tumors done in Osmania General Hospital between 1994 and 1997, included both benign and malignant tumors and both primary and secondary tumors as well.

Results: These tumors were seen between 30-80 years of age. Male to female ratio of the benign and malignant small bowel tumors was 1.8: 1 and 1.75:1 respectively. 65% were Incidental findings. Anemia was seen in 58.8%. 83% of benign and 90% of malignant tumors presented with pain. 47.1% of the cases were diagnosed pre-operatively and 41.2% of the cases during emergency surgery. Benign tumors constituted 35.3% and the rest were malignant. 83.3% of the benign lesions were in the jejunum and 16.6% in the duodenum. Amongst, the malignant lesions, 54.60% of them were in the duodenum, 36.3% were in the jejunum and 9% were in the ileum.

Conclusion: 65% of the small bowel tumors were found incidentally. Pain, obstruction, bleeding, palpable mass were the other modes of presentation, while anorexia and weight loss were noted in only the malignant ones. High index of suspicion is required to prevent delays.

Key words

Small bowel tumors, Benign, Malignant, Modes, Presentation, Pain, Anemia.

Introduction

Small intestine accounts for 75% of the length of the alimentary tract, and 90% of the mucosal surface of the Gastrointestinal tract, but only 3-6% of the tumors arise in it [1] and are uncommon. There are approximately 4800 new cases of small bowel cancer each year in the U.S., with 1200 deaths [2]. As a result of their infrequency and variety, the accumulation of data regarding their clinical presentation, pathologic features, prognostic factors, treatment modalities, and outcome has been difficult.

The age-adjusted incidence of small bowel malignancies is 1 per 100,000, with a prevalence of 0.6% [3]. Approximately 40 different histologic types of both benign and malignant small intestinal tumors have been identified [4]. Although 75% of the tumors found at autopsy are benign, most of the symptomatic lesions and tumors detected during surgery are malignant.

This study was conducted to observe the clinical presentations of the small bowel tumors.

Materials and methods

A prospective study of 17 cases of small bowel tumours which were admitted in Osmania General Hospital was studied for a period of 3 years between 1994 and 1997. The study included both benign and malignant tumors and both primary and secondary tumors of the small bowel as well.

Inclusion criteria

This study included the duodenal tumors especially of D1 and D3 regions and even the peri-ampullary tumors as well when there seemed to be reasonable pathological evidence that these tumors did arise from the duodenal mucosa.

Exclusion criteria

A few cases could not be followed up until a proper therapy was planned on them as they absconded while being investigated and a few cases presented in an advanced stage and they

refused any form of treatment. Few cases presented in Emergency Department where proper investigations could not have been attempted.

In this study, most cases were not followed up properly hence the adequacy of treatment and prognosis could not be studied. As our Hospital was not equipped with all the investigations and since most of the patients being from low socio-economic status, not all the required investigations were attempted and so this study was focused only on the modes of presentations of the small bowel tumors, not trying to look into the treatment modalities offered and the survival patterns.

Results

Small bowel tumors comprise less than 6% of all the gastrointestinal neoplasms and less than 25 of all the malignant gastrointestinal tumors. Most cases were in the age groups between 30-80 years, which are in agreement with the western series. Mean age in males was 48.76 years, and in females it was 47.67 years (**Table – 1**).

Table - 1: Distribution of patients by age.

Age in years	Benign	Malignant
0-10	1	0
11-20	0	0
21-30	1	1
31-40	3	1
41-50	1	1
51-60	0	4
61-70	0	4
71 and above	-	-

The sex distribution of the 17 patients was almost equal with the male to female ratio being 1.8:1. The ratio for the malignant lesions was 1.75: 1. Symptoms in our study were present for more than 6 months, in most of our patients before the diagnosis (**Table – 2**) and this similar observation was noted in the western series too. Methods of diagnosis were as per **Table – 3**. Anatomical location of tumors was as per **Table**

– 4. Pathological type of tumor was as per **Table 5**. Most of the patients with small bowel malignancies in our series were not followed up properly.

Table - 2: Symptoms and signs of small bowel tumor.

Symptoms and signs	Benign	Malignant
	Number (%)	Number (%)
Pain	5 (29.45%)	10 (58.8%)
Weight Loss	0 (0%)	9 (52.9%)
Anorexia	0 (0%)	9 (52.9%)
Vomiting	4 (3.5%)	7 (41.2%)
Malena/ Bleeding P/R	1 (5.8%)	1 (5.8%)
Constipation	2 (11.8%)	2 (11.8%)
Jaundice	-	2 (11.8%)
Mass/Abdomen	1 (5.8%)	4 (23.5%)
Abdominal Distension	4 (23.5%)	6 (35.3%)
Anemia	2 (11.8%)	8 (47.11%)

Table - 3: Methods of diagnosis in present study.

Method of diagnosis	No. of patients	Patients considered operable for cure
Diagnosed Pre-operatively	8	2
Elective operation	8	2
Incidental operation	10	7
Emergency Operation	7	7
Perforation	1	1
Obstruction	4	3
Bleeding	1	1

Discussion

Seventeen cases of small bowel tumors admitted in Osmania General Hospital over three years were studied and it has been a prospective one. Neoplasms of the small intestine are unusual and constitute less than 3% of all gastrointestinal tract cancers [5-7]. These tumors are known for

their rarity, variability, nonspecific symptomatology, diagnostic difficulties, delayed presentation, and overall poor prognosis [5]. Small bowel tumors are rare as compared to other gastro intestinal tumors. Poor socio economic groups were commonly affected. Incidence of the small bowel tumors was amongst those between 30-80 years of age. The average age for benign tumors was 35 years and for malignant tumors, it was 50 years. Mean age in males was 48.78 years, and in females it was 47.67 years. The male to female ratio of the small bowel tumors was 1.8:1 and for the malignant small bowel tumors it was 1.72: 1. This similar distribution was noted in the Treadwell, et al. [7] where the male: female ratio was 1.3: 1 and in the Williamson, et al. [8], where the ratio was 1.2: 1. Most cases were amongst the low socio-economic group.

Table - 4: Anatomical locations of tumors.

Lesion	Duodenum	Jejunum	Ileum
Malignant			
Carcinoma	6	2	-
Lymphoma	-	1	-
Carcinoid	-	1	-
Secondaries	-	1	-
Benign			
Adenomatous	-	-	-
Polyps	1	1	-
Lipoma	-	1	-
Leiomyoma	-	1	-
Hemangioma	-	1	-
Inflammatory	-	-	-
Fibroid	-	1	-
Intestinal Duplication	-	1	-

The lack of physical findings and the inaccessibility of the small bowel to clinical investigation cause delay in diagnosis, emphasizing the clinical innocence of the small bowel. Most of the small bowel tumors were incidental findings (65%), benign tumors constituted 35.3% and the rest were malignant.

Table - 5: Pathological types of tumors.

Benign tumors	Number (%)
Adenomatous Polyps	2 (33.3%)
Leiomyoma	1 (16.6%)
Lipoma	1 (16.6%)
Inflammatory Fibroid	1 (16.6%)
Intestinal Duplication	1 (16.6%)
Malignancies	
Adenocarcinomas	8 (72.7%)
Carcinoids	1 (9.1%)
Lymphoma	1 (9.1%)
Secondaries	1 (9.1%)

Benign small bowel tumors commonly presented with pain in 83%, obstruction in 50%, bleeding in 16%. Malignant small bowel tumors presented with pain in 90%, anorexia and weight loss in 80% of cases, symptoms of obstruction in 55%, bleeding in 9%, Jaundice in 9% of cases. Palpable vague mass was found in 45% of patients. Few patients did have symptoms of recurrent obstructions.

The most symptoms produced by the small bowel tumors are poorly localized abdominal pain, symptoms of recurrent obstruction, weight loss and weakness secondary to anemia. These were consistent with the observations published in the western series.

Benign small bowel tumors are usually asymptomatic, 60-75% of the symptomatic tumors are malignant. In a collected series of 1,047 benign tumours, 56% of the patients had symptoms of obstruction, 38% had pain, and 30% had bleeding. In our series of patients with benign tumors, obstruction occurred in 50%, pain in 83% and bleeding in 16%.

In a collected series of 808 malignant lesions, the most frequent presenting symptoms were weight loss in 39%, obstruction in 30%, bleeding in 23% and pain in 20%. In our series, the frequent symptoms were pain in 90%, weight loss in 80%, obstruction in 55% and bleeding in 9%.

Upper gastrointestinal endoscopy, contrast studies and ultrasound of the abdomen helped in diagnosing a few cases. 41.2% of the cases were diagnosed while undergoing emergency surgery and 47.1% were diagnosed pre operatively. 83.3% of the benign small bowel tumors were in the Jejunum and 16.6% of them were in the Duodenum. Amongst the malignancies of the small bowel, 54.6% of them were in the Duodenum, 36.3% were in the Jejunum and 9.1% in the Ileum. The few clinical syndromes which the small bowel tumors presented with were peptic ulcer / gastric outlet obstruction in 23.5%, Intestinal obstruction in 29.4%. The pathological types of the benign small bowel tumors in our study were adenomatous polyps in 33.3%. The pathological types of malignant small bowel tumors in our study were adenocarcinomas in 72.7%. Most of the malignant small bowel tumors presented in an advanced state and most of them had to receive only palliative surgical treatment. This study done over a period of 2 ½ years could not assess the survival pattern in the malignancies as the follow up period was inadequate and patients too were not complaint.

Most of the cases in our series were incidental findings (65%) unlike in the above mentioned series, perhaps because of inadequate investigations in our set-up. In our series 41.2% of cases had to undergo emergency/ semi Emergency operations. While in Johnson AM series, 28.3% required emergency surgery. In our series, 47.1% of cases were diagnosed preoperatively, while in Johnson A M series 13.3% were so diagnosed [9].

Benign tumours of the small bowel increase in frequency as the ileocaecal area is approached. In our series, 83.3% of the benign lesions were in the jejunum and 16.6% in the duodenum. Amongst, the malignant lesions, 54.60% of them were in the duodenum and they were adenocarcinomas, 36.3% of the malignancies were in the jejunum and 9% were in the ileum. Most of the western series confirm the observation that benign tumors increase in

frequency as the ileocaecal area is approached. But deviations from this as observed in our series were noted in the Treadwell, et al. [7], where 34.6% of the benign lesions were in the duodenum and only 11.5% were in the Ileum.

Malignancies in the small bowel are more often seen in the distal parts, but adenocarcinomas in the duodenum are not uncommon as seen in our series (**Table – 6**).

Table – 6: Comparison of malignant tumors.

Malignant	Our series	Treadwell TA, et al. [7]	William [8]	Johnson A M [9]
Carcinomas	8	30	64	23
Carcinoid	1	20	21	23
Leiomyosarcoma	-	10	-	7
Sarcoma	-	7	37	2
Lymphoma	1	24	-	5
Secondary	1	-	-	-
Melanoma	-	1	-	-

In our study, five patients (83.3%) with benign small bowel tumors had to undergo resection of the tumor bearing bowel and end to end anastomoses and one patient (16.6%) with duodenal adenomatous polyp was subjected to endoscopic polypectomy. Amongst the patients with malignant lesions, five of the patients (45.5%) were treated with resection of the tumor bearing bowel with end to end anastomosis which was of the Palliative type. One patient with D-2 (Duodenal Adenocarcinoma) tumor underwent Whipple’s pancreaticoduodenectomy. Three patients with duodenal malignancies underwent only Bypass surgery, in view of their extensive disease, and two patients of duodenal malignancy did not undergo any treatment either surgical or medical.

disease had positive lymph nodes. When patients recurred, most had developed distant metastatic disease, most commonly to the liver, with approximately 20% recurring locally. Overall, the five year survival was 0% and 25% for jejunal and ileal lesions, respectively [12].

In view of inadequate follow-up and short duration of study, survival pattern in malignant lesions of the small bowel was not studied. But most of the small bowel malignancies have presented in an advanced state in our study.

Conclusion

The small bowel tumors were mainly in the age group between 30-80 years of age. The average age for the benign small tumors was 35 years and for the malignant small bowel tumors it was 50 years. Male to female ratio of the small bowel tumors was 1.8: 1 and for the malignant small bowel tumors it was 1.75: 1. 65% of the small bowel tumors were Incidental findings. Benign tumors constituted 35.3% and the rest were malignant. The common mode of presentations of the benign and malignant small bowel tumors was pain and was 83% and 90% respectively. Other modes of clinical presentations of the small bowel tumors were anemia and it amounted to 58.8%. 47.1% of the cases were diagnosed pre-operatively and 41.2% of the cases

In Frost's 30 year review [10], all patients with ileal adenocarcinoma succumbed to their disease, while 83% of patients with jejunal lesions died. Ouriel [11] had better results with 5-year survival of 46% and 20% for jejunal and ileal lesions, respectively. Bauer [12] found no survival difference based on age, duration of symptoms, tumor location within the small intestine, type of recurrence (local or distant), or grade in 38 patients. However, approximately 50% of patients with jejunal disease had node positive tumors, while 80% of patients with ileal

were diagnosed while undergoing emergency surgery. In our series, 83.3% of the benign lesions were in the jejunum and 16.6% in the duodenum. Amongst, the malignant lesions, 54.60% of them were in the duodenum and they were adenocarcinomas, 36.3% of the malignancies were in the jejunum and 9% were in the Ileum. A high index of suspicion is required to prevent prolonged diagnostic delays. Improvements in endoscopic and radiological procedures should lead to earlier diagnosis and better outcomes.

Acknowledgements

I wish to thank Dr. M.S. Osmani, the then Professor and Head of the Department of Surgery, Osmania Medical College for permitting to take up this study. I thank Dr. Ahmed, the then Professor and Head of the Department of Pathology, for helping me in providing the histopathology reports. I am indebted to Dr. Nagabushanam, Dr. Sriram Reddy, the then Professors of Surgery for allowing me to include their cases in my study. I thank Dr. Wasif Ali, Dr. Prathap Reddy, Dr. Ashok, Dr. H.K. Patel, Dr. Prabhakar and Dr. Masood, who were faculty in the Department of Surgery and Dr. S. S. Srinivas for their guidance.

References

1. Neugut AI, Jacobson JS, Suh S, Mukherjee R, Arber N. The epidemiology of cancer of the small bowel. *Cancer Epidemiol Biomarkers Prev.*, 1999; 7: 243-251.
2. Landis S H, Murray T, Boldens S, Wingo P A. *Cancer statistics.* CA, 1999; 49: 8-30.
3. Barelay TH, Schapira DV. Malignant tumors of the small intestine. *Cancer*, 1983; 51: 878-881.
4. Attanoos R, Williams GT. Epithelial and neuroendocrine tumors of the duodenum. *Sem Diagn Pathol.*, 1991; 8: 149-162.
5. M. Naef, M. Bühlmann, H. U. Baer. Small bowel tumors: diagnosis, therapy and prognostic factors. *Langenbeck's Archives of Surgery*, 1999; 384(2): 176-180.
6. J. H. North, M. S. Pack. Malignant tumors of the small intestine: a review of 144 cases. *American Surgeon*, 2000; 66(1): 46-51.
7. T. A. Treadwell, R. R. White. Primary tumors of the small bowel. *The American Journal of Surgery*, 1975; 130(6): 749-755.
8. R. C. Williamson, C. E. Welch, R. A. Malt. Adenocarcinoma and lymphoma of the small intestine. Distribution and etiologic associations. *Annals of Surgery*, 1983; 197(2): 172-178.
9. Johnson A M, Harman P K, Hanks J B. Primary small bowel malignancies. *Am Surg.*, 1985; 51: 31-36.
10. Frost D B, Mercado P D, Tyrell J S. Small bowel cancer: a 30-year review. *Ann Surg Oncol.*, 1994; 1(4): 290-295.
11. Ouriel K, Adams J T. Adenocarcinoma of the small intestine. *Am J Surg.*, 1984; 147: 66-71.
12. Bauer R L, Palmer M L, Bauer A M, Nava H R, Douglass H O. Adenocarcinoma of the small intestine: 21-year review of diagnosis, treatment, and prognosis. *Ann Surg Oncol.*, 1994; 1(3): 183-188.