

Study of Intestinal Lesions in Histopathology



Medical Science

KEYWORDS : Intestinal lesions, Incidence, Sex ratio.

* **Rajesh Kumar Vais**

Resident Doctor, Department of Pathology, P. D. U. Govt. Medical College, Rajkot
* Corresponding Author

Amit H. Agravat

Associate Professor, Department of Pathology, P. D. U. Govt. Medical College, Rajkot

Gauravi A. Dhruva

Professor & Head, Department of Pathology, P. D. U. Govt. Medical College, Rajkot

ABSTRACT

AIMS & OBJECTIVE –

To study the incidence of various intestinal lesions on Histopathology on the basis of gender, age and socioeconomic status.

Retrospective study was done on specimen received in Histopathology department of Pandit Dindayal Upadhyay Medical College & Hospital Rajkot (Gujarat) from June 2015 to May 2016. Specimens received in 10% formalin, processed, 3µm section prepared and observed microscopically. All specimens of intestinal lesions are included. Data is then categorized according to lesion, gender, age and socioeconomic status.

Methods-

Retrospective study was done on specimen received in Histopathology department of Pandit Dindayal Upadhyay Medical College & Hospital Rajkot (Gujarat) from June 2015 to May 2016. Specimens received in 10% formalin, processed, 3µm section prepared and observed microscopically. All specimens of intestinal lesions are included. Data is then categorized according to lesion, gender, age and socioeconomic status.

Conclusion-

Acute appendicitis, Intestinal obstruction and bowel necrosis, intestinal perforation, Meckel's diverticulum, Hirschsprung disease and Adenocarcinoma of GIT all these are more common in males. In intestinal tuberculosis sex ratio is equal. Meckel's diverticulum, Hirschsprung disease are seen in less than 5 year age group. Acute appendicitis is encountered more in younger age group. All other mentioned lesion are seen more commonly in 4th decade and above ages. Among all cases 70-80% were from poor socioeconomic status.

INTRODUCTION:-

Presentation of intestinal lesion varies according to gender, age and socioeconomic status. few conditions like appendicitis is more common in younger age group, and some like adenocarcinoma is more commonly seen in middle age and older age group. Few conditions like intestinal TB is found more or less equal in all age group. Most of pathological condition involving bowel are more commonly seen in male population.

MATERIAL & METHODS:-

Present study is a one year retrospective study undertaken in department of Pathology, Pandit Dindayal Upadhyay Medical College & Hospital Rajkot (Gujarat), during the period of June 2015 to may 2016. The study comprised of intestinal lesion specimen received in Histopathology. Specimens were sent in 10% formalin. It was kept for 24 hours in 10% formalin for proper fixation, subsequently tissue processing was done. Blocks were made, sections of 3 µm thickness were cut and stained with Harris Haematoxylin and Eosin stain or PAS stain and observed microscopically^[1]. Data of 362 specimen are studied. According to their histopathological finding lesion are divided into different categories as in table below.

All above lesions are further categorised gender wise and in different age group for ex 0-10 year, 11-20 year etc. till 90 years of age. Patient are also categorised according to their socioeconomic status into economically poor and economically good condition.

RESULTS & INTERPRETATIONS:-

Table no. 1-

S No.	Lesion	Total Cases	Male	Female
	Total No of cases-	362	242	120
1	Congenital conditions-	13	9	3
a)	Meckel's diverticulum	6	4	2
b)	Hirschsprung disease	4	3	1

c)	Illeal and colonic atresia	3	2	1
2	Infective -	314	213	101
a)	Intestinal Obstruction & Necrotic bowel	37	29	8
b)	Intestinal Perforation	52	39	13
c)	Intestinal tuberculosis	15	8	7
d)	Appendicitis.	210	137	73
3	Inflammatory -	3	1	2
a)	Ulcerative Colitis	2	0	2
b)	Chron's Disease	1	1	0
4	Neoplasia -			
a)	Benign	2	0	0
i)	Colonic Polyp			
	Adenomatous	1	1	0
	Hamartomatous	1	1	0
b)	Malignant-	25	15	10
i)	Adenocarcinoma- Colon and small intestine.	24	15	9
ii)	GIST	1		1
5.	Others-	7	4	3
a)	Faecal fistula	4	2	2
b)	Intussusception	4	2	2

After studying 362 specimens (Table no. 1) we observed that acute appendicitis is the most common lesion encountered. Total 210 specimens were of appendicectomy making it 58% of all lesions. Here 137(65%) were male and 73(35%) were female (Figure 1). Acute appendicitis is rare before the age of 5 years and has its peak incidence in the second and third decades^[2]. It is slightly more common in males and this sex difference is accentuated in early childhood. In our study total 72 cases 34% were from second decade of life, and 62 cases 30% from third decade of life. Only 14

cases 6% were from above 50 years age group (Figure 2). Perforation is a quite common in appendicitis, in our study 40(19%) presented with perforation. Among males 21% cases and in females 15% cases had appendix with perforation. 165 cases 79% were from economically poor status while others were economically good.

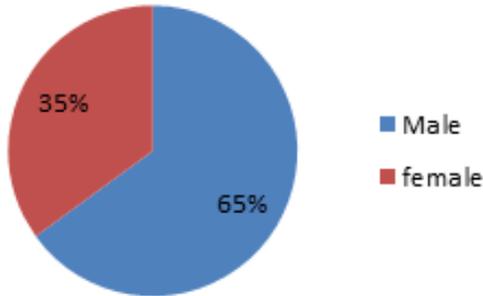


Figure 1

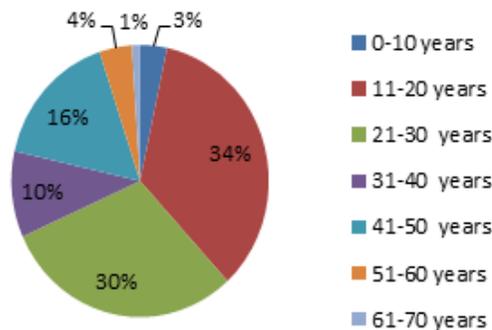


Figure 2

Intestinal obstruction and bowel necrosis is another common condition observed in surgical emergencies of general hospital. The mechanical causes of small intestinal obstruction are often divided into those situated within the lumen, those within the bowel wall, and extramural causes. The latter are nearly always diseases of the peritoneum, and include congenital mesenteric or omental bands, peritonitis and its consequences, peritoneal adhesions [3], and primary or secondary tumours of the peritoneal cavity. Intramural causes may similarly be congenital atresias, inflammatory conditions such as Crohn’s disease, tuberculosis or drug-induced stenoses, ischemic strictures, irradiation damage and polypoid or infiltrative neoplasm [4]. Total 37 specimen of resected bowel were received, 29(78%) were male and 8(22%) were female. in our study 8 cases 21% were from 40-50 year and 9 cases 23% were from 50-70 years age group.

Small intestinal perforations in adults may follow ingestion of foreign bodies, peptic or other ulceration, acute or chronic inflammatory bowel disease, thinning and weakening of the bowel wall due to systemic sclerosis [5] or diverticula, or follow obstruction of the bowel lumen from a large number of causes[6]. in our study we observed 52 cases of intestinal perforation , among these 39(75%) were male and 13(25%) were female (Figure 3). In perforation maximum cases were seen in 4th to 6th decade. 8 cases 15% were 31-40 year age group, 7 cases 13% were between 41-50 year and 16 cases 30% were in 51-60 year group (Figure 4). So we can say that intestinal perforation is more commonly seen in middle aged and older age group. 37 patient 70% were from poor families.

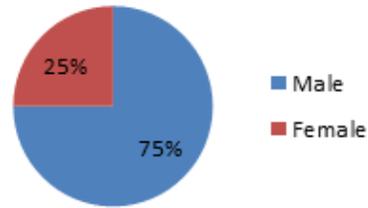


Figure 3

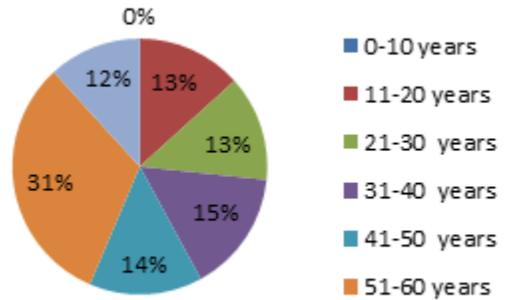


Figure 4

Intestinal tuberculosis is one of the common cause of abdominal pain and obstruction. The most common site of GI involvement is the ileocecal region which is involved in 64% of cases of gastrointestinal TB[7]. The terminal ileum is more commonly involved because of the various contributing factors like stasis, presence of abundant lymphoid tissue, increased rate of absorption at this site and closer contact of the bacilli with the mucosa [8, 9, 10]. In our study 15 specimen of TB intestine were received, out of which 8(53%) were male and 7(47%) were female (Figure 5). There is slight male preponderance seen in intestinal TB[11]. Otherwise its incidence is same in both sexes [12]. Age wise incidence is shown below (Figure 6).

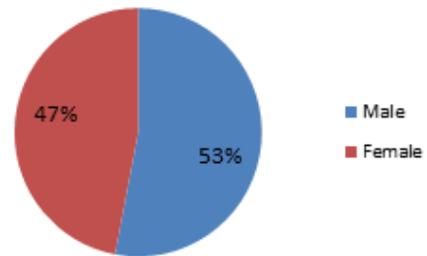


Figure 5

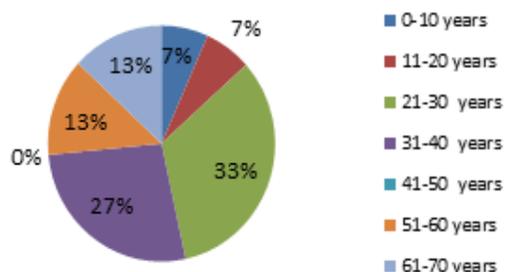


Figure 6

Congenital abnormalities like meckel's diverticulum, hirschsprung disease are always observed in less than 5 years of age. We received 6 cases of Meckel's diverticulum and 4 cases of hirschsprung disease. In Meckel's diverticulum male to female ratio is 3:1 approximately [13]. In our study 4(66%) were male and 2(33%) were female. In Hirschsprung disease a difference in sex ratio has been observed. A male predominance of 3:1 to 5:1 has been reported [14,15]. In our study out of 4 cases sex ratio is 3:1.

Adenocarcinoma is most common type of malignancy seen in intestine. Adenocarcinoma is the most common histological variant of colon carcinomas [16]. We received 24 specimens, 20 were from colon, 3 from small intestine and 01 from stomach. In contrast to colorectal cancer, studies on the pathogenesis of small bowel adenocarcinoma (SBA) are constrained by the rarity of the disease. Alcohol consumption [17] and smoking [18] have been associated with an increased risk of SBA. Other studies have reported an increased risk of SBA among the highest consumers of sugar, refined carbohydrates, red meat or smoked food, while a reduced risk was observed with higher intakes of coffee, fish, fruit, and vegetables [19, 20].

The marked difference between the incidences of SBA and colorectal adenocarcinoma suggests different exposures to carcinogens. In the small bowel, the contact time between intestinal cells and xenobiotics or dietary carcinogens is shorter than in the colon. In addition, the proximal small intestine contains low concentrations of aerophilic Gram-positive bacteria. The density of the microbiota increases in the distal ileum, but is still much lower than in the colon, where the microbiota produces xenobiotic transformation during which bile salts are deconjugated and dehydroxylated to form desoxycholic acid, which is a potential tumour promoter [21]. Moreover, the epithelial cells of the small bowel are equipped with a wide range of microsomal enzymes, including the benzopyrene hydroxylase, that may protect them against food derived carcinogens [22].

Sex ratio in adenocarcinoma of colon is approximately 1.7:1 [23]. In our study 15(63%) were male and 9(37%) were female(Figure 7). Maximum number of patients presented in 4th to 6th decade of life (47.30%), while as (15.46%) were between 20-40 years(Figure 8). That's consistent with study of S Bong and Y Park et al, 1963[24] in Korea. Whereas neoplastic lesions of large intestine shows peak in 5th and 6th decades of life which is consistent with the study by Al-Radi et al, 2000[25] in Saudi Arabia and Mohsin-ul-Rasool et al, 2014[26] in Shrinagar, but in contrast to study done by Spear and Brainard et al, 1951[27] in Connecticut and K Jhaji et al, 2010 [28] in Ludhiana they noticed peak distribution in 6th and 7th decade of life. Average age of patients is 50.50 years [29].

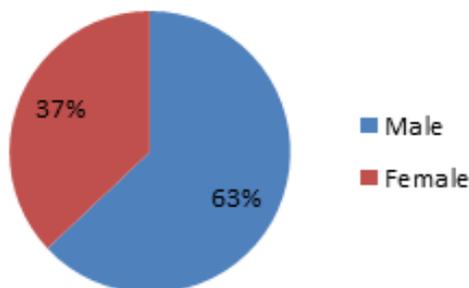


Figure 7

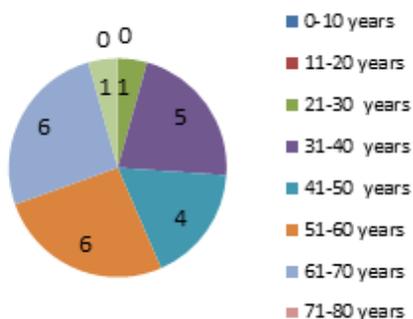


Figure 8

In our study we had 1(4%) case in 20-30 year age group, 5(21%) cases in 30-40 year, 4(17%) in 40-50 year, 6(25%) in 50-60 year, 6(25%) in 60-70 year and 2(8%) patient in 80-90 year age group. So 63% cases were from 30-60 years age group.

CONCLUSION-

Acute appendicitis is most common lesion encountered among intestinal histopathology, 65% affected are male. It is commonly seen in 2nd and 3rd decade of life. Intestinal obstruction and bowel necrosis cases are observed predominantly in male (78%), and more common in 5th and 6th decade of life. In intestinal perforation male to female ratio is 3:1, and it is more seen in middle aged and older age group. In intestinal tuberculosis sex ratio is equal and its incidence is almost same in all ages except in young age where it is seen seldom. Congenital abnormalities like meckel's diverticulum, hirschsprung disease are always observed in less than 5 years of age. Sex ratio in both diseases is approx 3:1. Adenocarcinoma is more common in colon, sex ratio is 1.7:1, it is seen more commonly in 4th to 7th decade of life.

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