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Original Research Paper

# Study and Observation of The Various Modalities of Treatment and Management of Ileal Perforation in Rims, Jharkhand

Surgery

KEYWORDS : ileal perforation, surgery, RIMS

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## ABSTRACT

***Objective:*** *Our aim was to evaluate the different surgical treatment done in ileal perforation in RIMS, a premier institute in eastern india*

***Methods****: This is a prospective descriptive study of patients operated for ileal perforation in a year. A total of 54 patients were evaluated. Their age , sex, signs, symptoms, lab investigations, their general status, operative interventions, post operative complications and mortality recorded.*

***Results:*** *Out of 54 patients, 54% were due to typhoid, 15% were due to trauma, rest others included tubercular( 13%) and 18% whose cause couldn't be ascertained. The surgical procedure performed were primary ileostomy in 34 patients, simple closure in 10 patients, resection and anastomosis in 7 patients and simple closure followed by defunctioning loop ileostomy in 3 patients.*

***Conclusion:*** *Optimisation of surgery should be based on patients general condition, delay in surgery and operative findings .Timely and appropriate surgical intervention decreases morbidity and mortality.*

**1.Introduction:**

Correct and timely interpretation of acute abdomen is one of the most challenging demands in developing countries where medical facilities are not readily available. Ileal perforation is one the commonest causes of acute abdomen, which is a surgical emergency. Ileal perforation mainly occurs due to enteric fever, tuberculosis, trauma besides other causes like meckel's diverticulum, parasitic infestations etc. Delay in surgical procedures occurs due to delayed reporting of patients in hospitals, due to which paients general condition was poor which mainly decided the surgical modalities undergone. The other factors that determined surgical procedure were age, anemia, hyovolumic shock, contamination of peritoneum[1]. Surgical options were primary closure, resection and anastomosis, primary closure with defunctioning proximal loop ileostomy and primary ileostomy.

The primary objective was to evaluate different options available to minimise patients morbidity and mortality.

**2. Methods:**

This was a prospective study for one year. All patients received written informed consent and study was approved by the institutional ethics committee. Detailed history and examination was done . Demographic profile, clinical features, blood investigations, x ray chest and abdomen erect were collected. Widal test was done in suspicious patients. Initial approach was focussed on resuscitation of the patient by iv fluids, electrolyte correction, broad spectrum antibiotics. Once the patient was stabilised, they underwent exploratory laparotomy. Decision regarding type of surgical procedure was decided on the table , depending on the intraoperative findings keeping other things in mind. A thorough peritoneal lavage with 2 to 3 litres of warm normal saline was done followed by placing intraperitoneal drains in pelvis. Patients were followed post operatively with proper antibiotics, were kept nil orally till bowel movements were present. They were looked for post operative complications such as wound dehiscence, wound infection, burst abdomen or anastomotic leak. Biopsy was taken to know the cause of perforation.

**3. Results:**

54 cases of non-traumatic and traumatic ileal perforations were followed during the study period of which typhoidal perforation cases were 29 (54%), tubercular 7 (13%), idiopathic 10 (18%) and traumatic perforation amounted to 8 cases (15%) as in Table 1. Bar graph 1 shows that 24 cases of perforation reported between 25 to 48 hours after onset of illness while 18 patients reported in the initial 24 hours, 7 cases reported after 48 hours while 5 cases reported even after 72 hours.Thus majority of patients reported late in hospital. Bar graph 2 shows that abdominal pain was present in almost all the 54 cases where as vomiting, fever and stoppage of flatus and faeces were present 44, 37 and 44 cases of perforation respectively. Bar graph 3 shows that abdominal tenderness was found in 54 cases (100%), guarding and rigidity in 50 cases (93%), abdominal distension in 29 (54%), obliteration of liver dullness was present in 33 cases (61%). Radiological evidence of free gas under diaphragm was found in 37 cases (70%) majority is under right side, multiple fluid levels in 8 cases (14%) while the findings were inconclusive in 9 cases (16%) as in Pie graph 2.

All cases were managed by surgery.Surgical interventions were divided into four types.(Pie graph 3)

1. simple closure in two layers- in 10 patients. Leakage was observed in one patient for which proximal ileostomy was done in reexploration.Patient, however , survived.

2. Resection and anastomosis- in 7 patients. There was leak from anastomosis in one patient which expired after reexploration .

3. simple closure followed by defunctioning proximal loop ileostomy- in 3 patients

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4. primary ileostomy followed by closure in 6-12 weeks – in 34 patients. Out of these 34 patients 6 patients couldn't survive. On analysis of these patients , patients age, delay in presentation and general condition of the patient was found to be the major prognostic conditions.

Pie graph 4 shows that wound infection was found in 6 cases (11%), wound dehiscence in 7 cases (12%), burst abdomen in 4 cases (7%) and leak from either primary closure or resection and anastomosis in 2 cases. Bar graph 4 shows hospital stay was 6 to 10 days in 34 cases, 11 to 15 days in 10 cases and even higher in 3 cases. Most of the patients stayed in hospital for about 10 to 14 days. 6% patients who stayed for more than due to some sort of complications. Mortality was maximum in the age group of 41 years and above as evident in Bar graph 5 . Bar graph 6 shows mortality rate was found to be directly proportional to the perforation-operation interval; it was 50% in patients reporting more than 60 hours after perforation.

Terminal ileum was the most common site of perforation.

**4. Discussion:**

Ileal perforation is a common cause peritonitis and it presents as a diagnostic dilemma to the surgeon. The mean age in our study was higher as the children below 15 years were excluded. The clinical feature were similar to any other acute abdomen and decision for laparotomy was taken on clinical grounds complimented by radiological images. The delay in surgery was mainly due to delay in referral from remote areas where medical facilities is scarce or no transportation facility.

Typhoid fever is noted as a serious health problem by WHO[2]. The enteric fever,is probably the most common cause of perforations of ileum ,ranging upto 78%[3].There is male preponderance in typhoid perforation[4,5]. These two reports are consistent with our findings. Tubercular perforation seem to be underdiagnosed[6] but in our part where tuberculosis is still endemic, 7 cases were found, in most of which primary ileostomy was done because of active lesions at time of presentation. Traumatic perforation is on rising trend as in other study[7] , we too operated 8 such cases, in which resection anastomosis in cases of multiple perforation or simple closure in single perforation . Non specific inflammation was the other predominant cause, in which no cause could be found and they were labelled as idiopathic cause. Late presentation , delay in operation (>48hrs), multiple perforations , gross contaminations of the peritoneal cavity with pus and faecal material and patients general condition affected surgical procedures, post operative complications and subsequent morbidity and mortality[8,9,10,11].The peritoneal fluid content and delay in surgical time increases the severity of contamination and friability of the bowel.

In our study, Simple closure in two layers was done in young patients presenting early usually 24 hrs with no physical features of toxicity and no peritoneal contamination and single perforation. Patients who presented even late , but general condition was good , simple closure was done. Resection and anastomosis was practiced in patients with good general condition having multiple perforations or large perforation, having minimal peritoneal contamination. Simple closure with defunctioning loop ileostomy was mainly done in patients presenting late , with features of toxaemia and peritoneal contamination and who can't survive another major surgeries in near future. Site of perforation, terminal ileum close to IC junction, was instrumental in undergoing the procedure. Primary ileostomy was carried out in majority, 34, of the patients because of the late presentation, features of toxaemia, peritoneal contamination and most importantly patients poor general condition.

**5. Conclusion:**

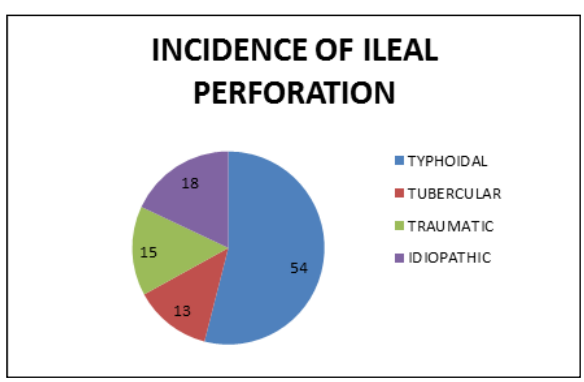
RIMS( Rajendra institute of medical Sciences) , is the only premier institute of Jharkhand where people from Jharkhand, adjoining areas of west Bengal, chattisgarh, bihar and orrisa report . thus a study in RIMS represent people of this region , which mostly belong to low socio economic background, who are nutritionally challenged and ignorant.There is a large strata who are ignorant about basic aspects of health, have no assess to modern development in medical science. So there's no surprise they present late ,in poor general condition.

Thus surgical options should be considered keeping in mind clinical presentation.General condition of the patient, delay in hospitalisation, perforation to surgery interval and per operative findings. Morbidity and mortality are not only dependent on operative techniques. Thus in our study primary ileostomy was found to be the most optimal surgical technique.

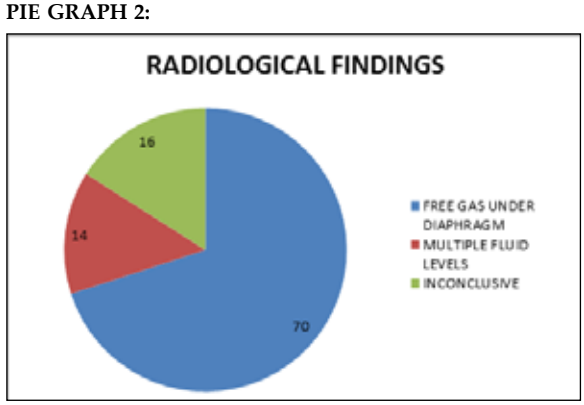
**Table 1. showing cause of perforation :**

| Causes of perforation | No. of cases | Percentage |
|---|---|---|
| Typhoidal | 29 | 54 |
| Tuberculous | 7 | 13 |
| Idiopathic | 10 | 18 |
| Traumatic | 8 | 15 |

**PIE GRAPH 1:**




**PIE GRAPH 2:**



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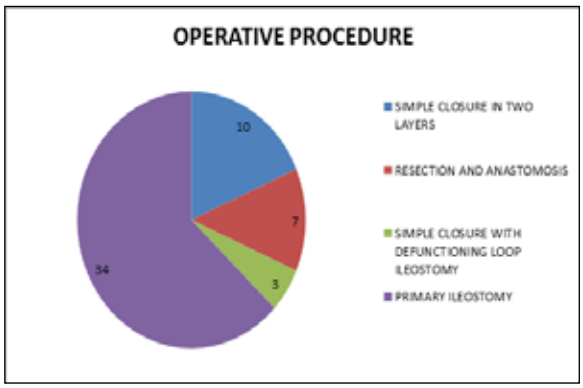


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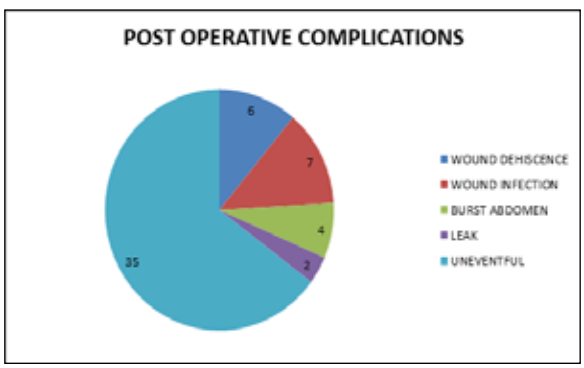
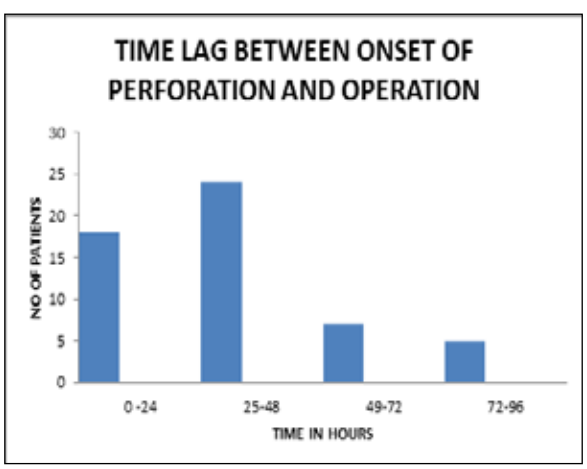
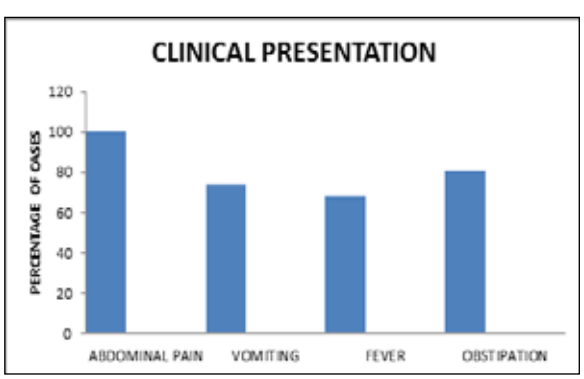



**BAR GRAPH 1.**




**BAR GRAPH 2:**

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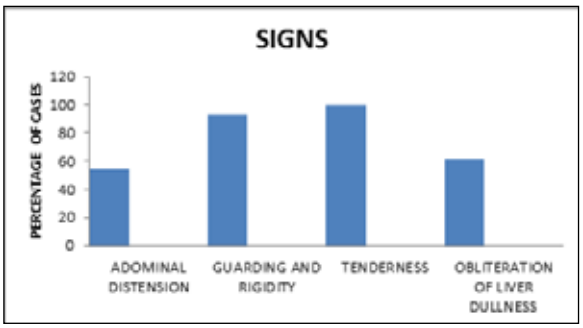
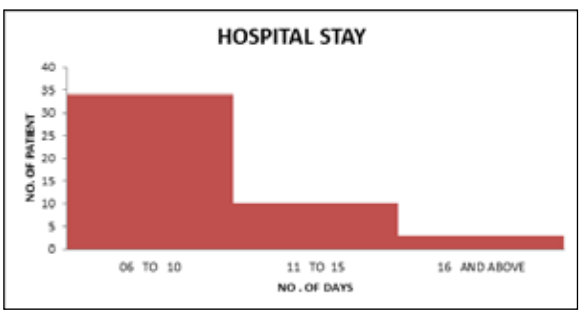
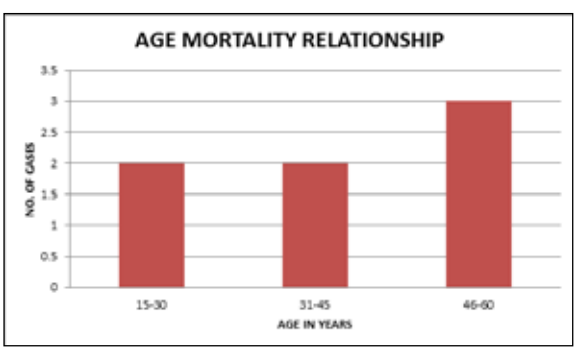



**BAR GRAPH 4:**




BAR GRAPH 5:

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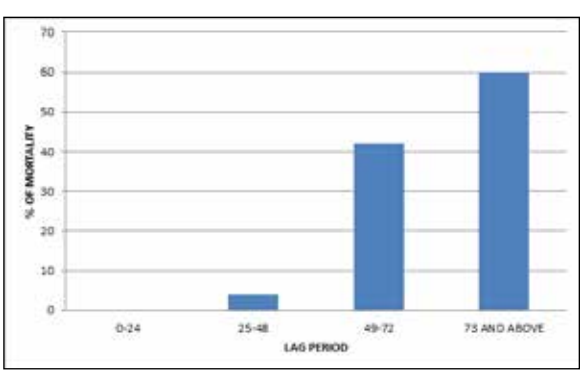


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