

A Prospective Study of Postoperative Complications Rate in Early and Late Presenting Cases of Perforation of Gastrointestinal Tract in Northern India, Lucknow, Uttar Pradesh

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Abstract

Perforation peritonitis is one of the most common surgical conditions encountered in surgical practice and is a common cause of morbidity and mortality and warrants early surgical intervention. In the study all patients were divided into 2 groups i.e. Group A-patients came within 48 hours from the starting of the symptoms to our institute. Group B-patients came from 48 hours to 144 hours from the starting of the symptoms to our institute. In our study we do a prospective evaluation and comparison of the post operative complications in both the groups viz A&B in the following headings viz. *Local complications*: Surgical site infection, Burst abdomen, Anastomotic leak, Post operative intestinal obstruction, Incisional hernia. *Systemic complications*: Septicemia, Respiratory complications (significant pleural effusion, pneumonia, lung abscess), MODS, Renal failure, DVT, Hospital stay, Deaths. Significant increase in complications rate were observed in late presenting group viz Group B as compared to early presenting group viz Group A. Complications rate were increased in Group B by following viz Surgical site infection (by 12.5%), Burst abdomen (by 8.45%), Anastomotic leak (by 7.60%), Post operative intestinal obstruction (by 4.90%), Incisional hernia (by 11.39%). Septicemia (by 13.48%), Respiratory complications (by 5.88%), MODS (4.41%), Renal failure (6.74%), DVT (by 1.47%). Average hospital stay was increased by 5 days in Group B patients. Death percentage was also increased by 12.62% in delayed presenting group.

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Poverty, lack of knowledge and education, lack of sufficient medical facility, lack of registered medical practitioners, practising quacks and tendency of disease ignorance and self medication make the situation worst which leads to delayed presentation of acute and life threatening illness to specialized medical care centres in India. *Abbreviations*: MODS- Multi organ dysfunction syndrome. DVT- Deep vein thrombosis.

Keywords: Perforation Peritonitis; Early Presenting Group; Late Presenting Group; Local Post Surgical Complications; Systemic Post Surgical Complications.

Introduction

Abdominal pain is one of the common problems encountered by doctors, either in primary or secondary health care (specialists). It may be mild, but it may also be a life-threatening sign. It has been estimated that almost 50% adults have experienced abdominal pain [1,2] and it accounts for 5-10% of all emergency visits [3-6]. Cautious care should be taken when dealing with elderly patients (>65 years) who suffered from abdominal pain since they are at 6-8 times greater risk for mortality [7] especially if the final diagnosis cannot be established in the Emergency Department [8].

Perforation peritonitis is one of the most common surgical conditions encountered in surgical practice and is a common cause of morbidity and mortality and warrants early surgical intervention [9].

Adequate resuscitation along with baseline investigations and broad spectrum antibiotics are imperative in each case. Further management depends

upon the cause of peritonitis. In most of the cases the peritoneal contamination is caused by mixed flora both aerobic and anaerobic. Anatomical, pathological, and surgical factors may favour localization of peritonitis [10]. Gastrointestinal perforations have been surgical problem since the time immortal. Scientists have found evidence of gastrointestinal perforations in Egyptian mummies. Perforation is said to occur once a pathology which extends through the full thickness of the hollow viscus leading to peritoneal contamination with intraluminal contents. Perforation can occur anywhere in the gastrointestinal tract starting from oesophagus to the rectum. Gastrointestinal perforation in our region generally occurs as a result of chronic inflammation due to *Helicobacter pylori*, NSAIDs like aspirin, stress, excessive smoking, alcohol, or coffee consumption. Other causes include appendicitis, diverticulitis, typhoid, malignancy.

Cope in 1921 wrote that 'the majority of severe abdominal pain which ensue in patients who have been previously fairly well and which lasts as long as 6 hours are caused by conditions of surgical importance [11].

Because of the potential surgical nature of the hollow viscus perforation, an expeditious workup is necessary. The workup proceeds in the usual order – history, physical examination, laboratory tests, and imaging studies. Although imaging studies have increased the accuracy with which the correct diagnosis can be made, the most important part of the evaluation remains a thorough history and careful physical examination. It is always advantageous to do an early surgery than a late surgery. The investigative procedure involved should be such that, they should give a definite diagnosis in a short-time. And after a diagnosis is made, the method of management of the case holds prime importance [12].

To prevent persistent or recurrent infection after surgical treatment of secondary peritonitis, three strategies with some variations have been proposed: relaparotomy on demand, planned relaparotomy, and the open abdomen-technique [13,15]. Because a reoperation enhances the inflammatory host response, which may contribute to a further impairment of organ function, an accurate identification of patients with poor prognosis and potentially benefiting from a new surgical intervention would be of utmost importance [16–19].

Material and Method

We have performed our study in Integral Institute

of medical sciences and research Lucknow Uttar Pradesh India for a period of 33 months from September 2013 to May 2016. We have selected the cases came to the emergency as well as OPD with a signs and symptoms suggestive of perforation peritonitis. After thorough clinical examination and investigations cases of perforation peritonitis were taken in to the study. Exploratory laparotomy was done to all the cases and standard recommended management done accordingly. Post operative care settings was same for all the cases in ICU. Post operative antibiotics coverage was done by giving 3rd generation cephalosporine and metronidazole. Oxygen support, ventilatory supports and fluid and electrolytes management was readily done for all the cases.

Inclusion Criterion

- Age- 18-60 years
- Haemoglobin- >10 gm/dl
- Liver function test-with in normal limit
- Serum albumin protein-with in normal limit

Exclusion Criterion

- Known case of diabetes mellitus
- Known case of hypertension
- Known case of liver disease
- Cases of tuberculosis
- Case of malignant diseases
- Cases of cardiac abnormalities or disease
- Known case of immunocompromised patients and autoimmune diseases
- Patients came after 144 hours from the first starting of symptoms

In the Study all Patients were Devided into 2 Groups ie.

Group A-patients came with in 48 hours from the starting of the symptoms to our institute

Group B-patients came from 48 hours to 144 hours from the starting of the symptoms to our institute

The patients of both the groups were for exploratory laparotomy with peritoneal lavage with warm NaCl followed by definitive surgical management of the perforated site

Post operative management were done in ICU with antibiotics and other facilities coverage which were

mentioned earlier.

In our study we do a prospective evaluation and comparison of the post operative complications in both the groups viz A&B in the following headings viz

Local Complications

Surgical site infection

Burst abdomen

Anastomotic leak

Post operative intestinal obstruction

Incisional hernia

Systemic Complications

Septicemia

Respiratory complications(significant pleural effusion,pneumonia,lung abscess)

MODS

Renal failure

DVT

Hospital Stay

Deaths

Total 184 patients were taken in the study

Out of which 48 fall in group A ie. came with in 48 hours from the onset of first symptom.

136 patients fall in group B ie. came from 48 to 144 hours from the onset of first symptoms.

All the operated patients were followed for 6 months after surgery.

Observation and Results

Local Complications

Local complications were followed after surgery. We found that in

Group A

- 6 out of 48(12.5%) patients had surgical site infection(incisional site and drain site cellulitis and abscess).
- 3 out of 48(6.25%) patients had burst abdomen.
- 2 out of 48(4.16%) patients had anastmotic leak.

- 4 out of 48(8.33%) patients were presented with post operative adhesive intestinal obstruction with in the period of 6 months.
- 3 out of 48(6.25%) patients presented with incisional hernia with in the period of 6 months post operatively.

Group B

- 34 out of 136(25%) patients had surgical site infection(incisional site and drain site cellulitis and abscess).
- 20 out of 136(14.70%) patients had burst abdomen.
- 16 out of 136(11.76%) patients had anastmotic leak.
- 18 out of 136(13.23%) patients were presented with post operative adhesive intestinal obstruction with in the period of 6 months.
- 24 out of 136(17.64%) patients presented with incisional hernia with in the period of 6 months post operatively.

Systemic Complications

Systemic complications were followed after surgery. We found that in

Group A

- 2 out of 48(4.16%) patients showed the signs and symptoms of septicaemia.
- 12 out of 48(25%) patients showed the respiratory complications.
- 00 out of 48(00%) patients showed the features of MODS.
- 01 out of 48(2.08%) patients showed the signs and symptoms of renal failure.
- 00 out of 48(00%) patients showed the signs and symptoms suggestive of DVT.

Group B

- 24 out of 136(17.64%) patients showed the signs and symptoms of septicaemia.
- 42 out of 136(30.88%) patients showed the respiratory complications.
- 06 out of 136(4.41%) patients showed the features of MODS.
- 12 out of 136(8.82%) patients showed the signs

and symptoms of renal failure.

- 02 out of 136(1.47%) patients showed the signs and symptoms suggestive of DVT.

Group B

Average hospital stay of group B patients were 14 days after the surgery.

Hospital Stay

Group A

Average hospital stay of group A patients were 09 days after the surgery.

Deaths

Group A

1 patients died out of 48(2.08%) patients post operatively during the hospital stay.

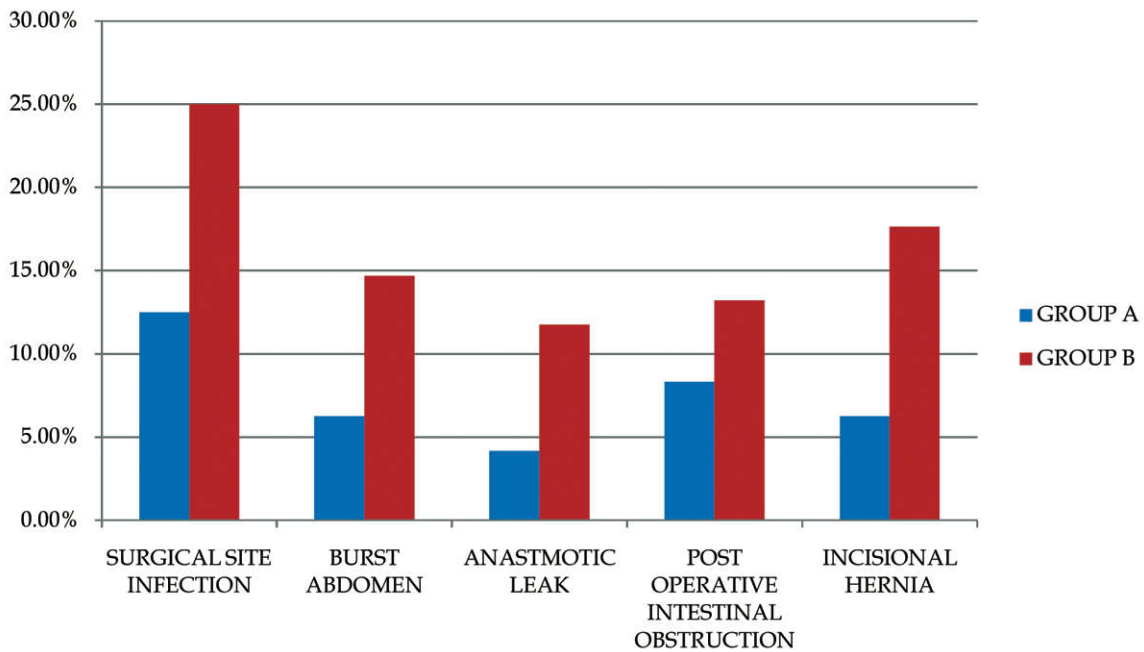


Fig. 1: Comparison Chart of Local Complications in Groub A &Group B

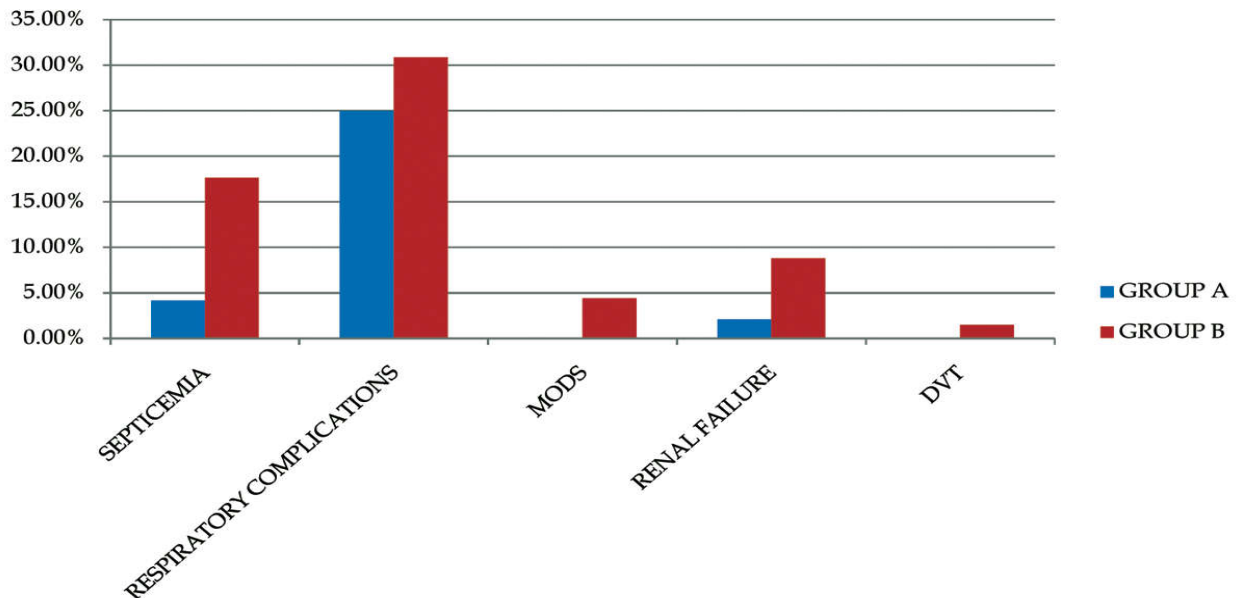


Fig. 2: Comparison Chart of Systemic Complications in Groub A &Group B

Group B

20 patients died out of 136(14.70%) patients post operatively during the hospital stay.

Discussion

There is only one doctor per 1,700 citizens in India; the World Health Organisation (WHO) stipulates a minimum ratio of 1:1,000. While the Union Health Ministry figures claim that there are about 6-6.5 lakh doctors available, India would need about four lakh more by 2020 – 50,000 for PHCs; 0.8 lakh for community health centres (CHC); 1.1 lakh for 5,642 sub-centres and another 0.5 lakh for medical college hospitals. If shortage of doctors is one problem, their unwillingness to work in the rural hinterland is another, creating artificial scarcity in the area and high concentration in another, admit Union health ministry officials [20]. Despite the country's meteoric GDP growth rate (about 9%), poverty in India is still pervasive; especially in rural areas where 70% of India's 1.2 billion population live. It is one of the fastest growing economies in the world and yet its riches are hardly redistributed across the population. It spends only 1% of its GDP on health, which is half that of China, who is already planning on increasing that by... a substantial amount (ok, 3 to 4% if you must know).

While we're comparing public expenditure, contrast this with Russia and Brazil, whose spending on health is around 3.5% of their respective GDPs [21]. India being the first state to give its citizens national health care as a uniform right. However in the present scenario Indian rural health care faces a crisis unmatched to any other social sector. Nearly 86% of all the medical visit in India are made by ruralites with majority still travelling more than 100 km to avail health care facility of which 70-80% is born out of pocket landing them in poverty [22]. Many surveys suggest that poverty, lack of knowledge and education, lack of sufficient medical facility, lack of registered medical practitioners, practising quacks and tendency of disease ignorance and self medication make the situation worst which leads to delayed presentation of acute and life threatening illness to specialized medical care centres.

Conclusion

Peritonitis caused by perforated viscus is a surgical emergency which needs urgent surgical intervention to reduce the mortality and morbidity of patients. In our study majority of cases presented late due to lack

of good medical facility in rural india where majority of population resides. Our study showed that in group B ie late presentin group suffered from lot of post operative mortality and morbidity including increased hospital stay and expenses .

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