Clinical Presentation and Surgical Outcome in Patients Presented with Peritonitis

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Authors’ contributions

This work was carried out in collaboration among all authors. Authors SA and AA designed the study, wrote the protocol and wrote the first draft of the manuscript. Authors SHQ and FH managed the analyses of the study. Author SY managed the literature searches. All authors read and approved the final manuscript.

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ABSTRACT

Objective: To determine the surgical outcome in patients with peritonitis at tertiary care Hospital.

Materials and Methods: This descriptive case series study was conducted in general surgery department of Peoples Medical Collage Hospital, Nawabshah (SBA). Study duration was two year from August 2014 to July 2016. All the patients aged more than 12 years and of both genders were included. Surgical management was done in all of the study subjects. Abdominal cavity was produced with midline incisions using grid iron as per investigations and clinical evaluation; the quantity and quality of intra-abdominal exudates were measured. Intestinal contents and pus were removed from peritoneal cavity with suction as well as by manual mopping, and full lavage was carried out with 3-5 liters of normal saline to all parts of the abdominal cavity. All the demographic data including clinical presentation and surgical outcome in terms of post-operative complications, Hospital stay and mortality were recorded via study proforma.
Results: A total of 100 cases of peritonitis 75% patients were male and 25% patients were female. The mean age of patients was 36.21±12.32 years. Acute generalized abdominal pain was in all cases, followed by fever 91.0%, vomiting 66.0%, constipation 69.0% and 2.0% patients complained of passing blood per rectum. Generalized abdominal tenderness, including rebound tenderness 90%, abdominal rigidity 83%, dehydration 88%, abdominal distention 85%, absent gut sound 70%, shifting dullness was elicited in 64% of cases and jaundice in 1.0% of cases. According to post-operative complications 20.0% patients developed Septicemia and Fecal fistula, 40.0% had wound infection only, 9.0% patients developed wound infection and septicemia, 4.0% patients developed septicemia without any wound infection. Most of the patients had prolonged Hospital stay and overall mortality rate was 16%

Conclusion: Surgical outcome of the peritonitis resulted poor in those cases who came late and there was huge contamination of peritoneal cavity when operated, these patients developed post-operative complications i.e. wound infection, septicemia, faecal fistula and there hospital stay was longer.

Keywords: Peritonitis; sign/symptoms; complications; mortality; surgical outcome; clinical.

1. INTRODUCTION

In general surgery, generalized peritonitis has been reported to be among the most prevalent emergency. It is a peritoneal inflammation that can be aseptic or septic, viral or bacterial, chronic or acute [1]. Generalized peritonitis is frequently caused by intestinal perforations. Due to dominating sepsis and faecal contamination, it is frequently severe, leading to significant mortality and morbidity [2-6]. Even despite treatment using all conventional procedure, it frequently results in significant morbidity and mortality [2,3]. Early identification, rapid surgical intervention, fluid resuscitation, complete peritoneal lavage, and proper parental antibiotics are often helpful adjuncts in lowering morbidity and mortality associated with these frequent conditions [2,5]. The outcomes of all surgeries conducted are mostly determined by the clinical condition of patients at the time of operation, rather than the surgeon’s performance. The extent and nature of surgical procedure, as well as the patient’s co-morbid condition, all affect the final outcomes [7]. All of the syndromes or conditions that make up our conventional differential diagnosis appeared to be absurd clinical entities, at least till an intelligent clinician ran into them. For spontaneous bacterial peritonitis the situation was no different [8]. In the Developed world, the colon’s disease "Diverticula" is a common occurrence, and its prevalence rises with age, influencing 33% of the people aged above 45 years and roughly 66% of the people aged above 85 years [9]. Fever, discomfort and diarrhea (40-70%, 80-95, and 11-20 respectively), as well as constipation, malaise, alternating diarrhea and constipation, anorexia, weight loss (40-90 %), are frequent non-specific symptoms [10]. Secondary peritonitis caused by gastrointestinal perforation is among the most prevalent surgical emergencies worldwide, and is linked with a high rate of mortality and morbidity [11]. Despite advancements in surgical methods, antimicrobial treatments, and critical care support, generalized peritonitis remains a difficult surgical emergency to treat [12]. However, this study aimed at determining the surgical outcome and clinical presentation in patients with peritonitis at tertiary care Hospital.

2. MATERIALS AND METHODS

This descriptive case series study was conducted in general surgery department of Peoples Medical College Hospital, Nawabshah (SBA). From August 2014 to July 2016, the study period was two years. All of the patients who were included in this study were of both genders, aged more than 12 years and had confirmed generalized peritonitis as evidenced by operative findings, ultrasonography, and radiological findings. All the other factors of acute abdominal disorders excluding peritonitis, Pancreatitis, Renal Colic, and Gastritis were excluded from the study. A comprehensive medical history was taken, as well as routine laboratory investigations and clinical examinations were performed. Emphasis was laid on signs and symptoms of rigidity, abdominal pain, guarding, pyrexia, distension, rebound and generalized abdominal tenderness, free fluid, absent bowel sounds, and obliteration of hepatic dullness. All patients were revived using intravenous fluids upon arriving the hospital, electrolyte imbalance was corrected, nasogastric
suction was initiated, a urinary catheter was inserted, and broad spectrum parenteral antibiotics were given preoperatively. After clinical evaluation and resuscitation, under general anesthesia, all of the surgeries were conducted as an emergency. The quality and amount of intra-abdominal exudates were measured after the abdominal cavity was created with a midline incisions using grid iron as directed by the clinical examination and investigation. Manual mopping and suction were used to remove intestinal contents and pus from peritoneal cavity, and a full lavage using normal saline from 3 to 5 liters was performed on all sections of abdominal cavity. All of the patients were evaluated after surgery for post-operative complications such as wound infection, faecal fistulas, and septicemia. All the data was collected via study proforma and analysis was done by using SPSS version 20.

3. RESULTS

A total of 100 cases of peritonitis were studied. Males were 75% and females were 25%. The mean age of patients was 36.21±12.32 years Table 1.

As per clinical presentation acute generalized abdominal pain was seen among all the study subjects, 91.0% cases had fever and vomiting was in 66.0% of the cases, 69.0% cases had constipation, coffee ground vomiting complain was in 16.0% cases, malaena was reported in all cases and 2.0% cases presented with passing blood per rectum. On examination, abdominal tenderness was in all of the study participants and rebound tenderness was in 90% patients. Out of all 83.0% had abdominal rigidity, followed by 88.0% had dehydration, 85.0% cases had abdominal distention, 70.0% cases had absence of gut sound, Shifting dullness was elicited in 64% of cases and jaundice was seen in one case Table 2.

As per post-operative complications, faecal fistula+septicemia and wound Infection was found in 20.0% cases, 40.0% had developed only wound Infection, 9.0% cases seen septicemia and wound infection, only septicemia was seen in 4.0% of the cases, while 27.0% cases were normally discharged without any post-operative complication Table 2.

Hospital stay 5-10 days was in 25.0% of the cases, 58.0% were stayed at hospital 11-20 days and Hospital stay >20 days was observed in 17.0% of the cases. Total mortality rate was 16.0% in this study and survival rate was 84.0%

Table 2.

As per overall clinical outcome, poor outcome (severe complications and mortality) was observed in 43.0% of the cases and good outcome (minor complications and nor mortality) was 57% as showed in Table 4.

4. DISCUSSION

Generalized acute peritonitis is a problematic infection that necessitates immediate medical attention as well as surgical treatment. The pathophysiology of this generalized and intra-abdominal sepsis has been linked to a variety of etiological causes. Perforation peritonitis is common surgical emergency. In this study, 75% patients were male and 25% patients were female and the mean age of patients was 36.21±12.32 years. In comparison, Adigun TA et al. [13] reported total of 52 adult patients; males were 73.1% and females were 26.9%, with mean age of 39.7±15.3 years. In our series male-to-female ratio was 3:1 similar to a study by Adesunkanni et al. [14], although Kocer et al. [15] reported a higher male preponderance of 8:1 in their study compared to what was obtained in this study.

Table 1. Patients distribution according to age and gender n=100

| Variables | Frequency | % |
|-----------|-----------|---|
| Gender    |           |   |
| Male      | 75        | 75.0% |
| Female    | 25        | 25.0% |
| Age       |           |   |
| Up to 20  | 23        | 23.0% |
| 21-30     | 41        | 41.0% |
| 31-40     | 26        | 26.0% |
| 41-50     | 04        | 04.0% |
| >50       | 06        | 06.0% |
| Mean+SD   | 36.21±12.32 years |   |
Table 2. Patients distribution according to clinical presentation n=100

| Symptoms and sign                        | Number of cases | Percentage |
|------------------------------------------|-----------------|------------|
| Generalized abdominal pain               | 100             | 100.0%     |
| Pyrexia                                  | 91              | 91.0%      |
| Constipation                             | 69              | 69.0%      |
| Vomiting                                 | 66              | 66.0%      |
| Coffe ground vomiting                    | 16              | 16.0%      |
| Malaena                                  | 10              | 10.0%      |
| Rectal bleeding                          | 02              | 02.0%      |
| Generalized abdominal tenderness         | 97              | 97.0%      |
| Rebound tenderness                       | 90              | 90.0%      |
| Dehydration                              | 88              | 88.0%      |
| Abdominal distension                     | 85              | 85.0%      |
| Abdominal rigidity                       | 83              | 83.0%      |
| Absent gut sounds                        | 70              | 70.0%      |
| Shifting dullness                        | 64              | 64.0%      |
| Jaundice                                 | 01              | 01.0%      |

Table 3. Patients distribution according to post-operative complications and Hospital stay n=100

| Variables                          | Frequency | %  |
|------------------------------------|-----------|----|
| Complications                      |           |    |
| WI+SEP+FF                          | 20        | 20.0% |
| WI                                 | 40        | 40.0% |
| WI+SEP                             | 09        | 09.0% |
| SEP                                | 04        | 04.0% |
| No complications                   | 27        | 27.0% |
| Post-operative Hospital stay       |           |    |
| 5-10 days                          | 25        | 25.0% |
| 11-20 days                         | 58        | 58.0% |
| >20 days                           | 17        | 17.0% |
| Mortality                          |           |    |
| Alive                              | 84        | 84.0% |
| Died                               | 16        | 16.0% |

WI= wound infection, SEP= septicemia, FF= Faecal fistula

Table 4. Patients distribution according to overall clinical outcome n=100

| Outcome  | Frequency | %  |
|----------|-----------|----|
| Good     | 57        | 57.0% |
| Poor     | 43        | 43.0% |
| Total    | 100       | 100.0% |

In present study, according to clinical features generalized abdominal pain was in all study subjects, fever had 91.0% patients and 66.0% vomiting. 69.0% cases had constipation, coffee ground vomiting complain was in 16.0% cases, malaena was reported in all cases and 2.0% cases presented with passing blood per rectum. On examination, abdominal tenderness was in all of the study participants and rebound tenderness was in 90% patients. Out of all 83.0% had abdominal rigidity, followed by 88.0% had dehydration, 85.0% cases had abdominal distention, 70.0% cases had absence of gut sound, Shifting dullness was elicited in 64% of cases and jaundice was seen in one case. In comparison to our results, study conducted by Memon AA et al. [16] reported that 97% cases had abdominal pain, 80% had absolute constipation, 91% had abdominal distension and 58% had vomiting, dehydration was in all cases. 85% had abdominal tenderness and 835 had rigidity. Langell JT and Mulvihill SJ report similar symptoms in their study [17].
In our study, as per post-operative complications complications, faecal fistula+sepsis and wound infection was found in 20.0% cases, 40.0% had developed only wound infection, 9.0% cases seen sepsis and wound infection, only sepsis was seen in 4.0% of the cases, while 27.0% cases were normally discharged without any post-operative complication. Although Kim et al. [18] found post-operative complications as 28% had respiratory tract infections (RTI), sepsis 18%, wound infection (25%), and dyselectroalaemia (17%). Results of our study are consistent with the findings of Edino et al. [19] and Budhraja et al. [20]. As the wound infection was high in this study, the Budhraj et al. [20] also found wound infection as the most common post-op complication. In this study, 84% patients survived and 16% patients expired. Study conducted by Haque MA et al. [21] reported that overall mortality in their study was 11.53%. The mortality rate seen higher among those who had late presentation, age >50 years, delay treatment and having co-morbidities.

5. CONCLUSION

Good surgical outcome was observed among patients whose arrival was early and there was less contamination of peritoneum. However poor in those cases who came late and there was huge contamination of peritoneal cavity when operated, these patients developed post-operative complications i.e. wound infection, sepsis, faecal fistula and there hospital stay was longer. Commonest features of the patients were abdominal pain, fever, vomiting, malaena, abdominal tenderness, rebound tenderness, dehydration and abdominal distention.

CONSENT

As per international standard or university standard, patients’ written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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