

Research Article

Age, sex incidence with signs and symptoms of peritonitis

Ramachandra ML*

Department of Surgery, Mysore Medical College and Research Institute, Mysore, Karnataka, India

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***Correspondence:**

Dr. Ramachandra ML,

E-mail: medicogen.doc@gmail.com

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ABSTRACT

Background: Peritonitis, while no longer the over whelming problem it once was, is still the most common cause of death, ballooned surgical treatment of abdominal disease. In 5 to 7 present of all autopsies, peritonitis is either the primary or a contributory cause of death. Therefore the present study has been undertaken to find out the actual cause of death peritonitis.

Methods: This study was conducted after the institutional ethical clearance and informed written consent from all the subjects. Fifty surgically proved perforative peritonitis cases admitted to the surgical wards were included in the study. Radiological examination was done in all the cases to detect pneumoperitoneum. Ulcer edge biopsy was taken from peptic and non-specific ileal perforations. The data are expressed as mean and the percentile was calculated in each parameters.

Results: 90% of the subjects were males and the patients belong to the age group of 31-40 years. Of the 32 cases of perforated peptic ulcer, 19 gave the previous history of pain abdomen lasting from 6 months to 15 years, one gave the history of fever and in 14 cases there was no history. The pneumoperitoneum is demonstrable on X-ray in 60-80% cases of peptic as well as non-traumatic small bowel perforations.

Conclusion: The study showed that the maximum mortality occurred in those patients who were admitted to the hospital after more than 24 hours from the time of appearance of the first symptom. Therefore, it is advised not to delay in attending the hospital rather than delayed surgery.

Keywords: Peritonitis, Perforative peritonitis, Pneumoperitoneum, Non-traumatic small bowel perforations

INTRODUCTION

Peritonitis, while no longer the over whelming problem it once was, is still the most common cause of death, ballooned surgical treatment of abdominal disease. In 5 to 7 present of all autopsies, peritonitis is either the primary or a contributory cause of death.¹

The peritoneum spends a life time separated by a few millimeters from countless numbers in virulent microorganisms. Any breach in the integrity of the wall of any breach in the integrity of the wall of any hollow abdominal viscera, allowing peritoneal contamination

result in peritonitis.² Loss of integrity may results from disease such as perforation peptic ulcer, perforated typhoid ulcer, appendice perforation and non-specific ideal perforation.³

In diffuse peritonitis, if the history and physical signs suggest that a removable cause and still active focus of contamination remains, operation is under taken to deal with it. If the focus is irremovable or it ceases to infect the peritoneum then every effort should be made to assist the peritoneum to localize the infection.⁴

Gastrointestinal perforation account for about 25% of acute abdominal emergencies and are still associated with considerable mortality and morbidity inspite of the advances in surgery and ancillary disciplines.⁵

"Perforation of a gastric or duodenal ulcer is one of the most serious and over whelming catastrophes that can fall a human being" said Lord Moynihan.⁶ There is no intra-abdominal catastrophie where a successful outcome in more dependent upon early diagnosis and prompt institution of treatment.⁷ It is the most easily diagnosed acute abdominal condition provided the symptoms are known and appreciated.

This work consists of 50 cases of peritonitis secondary to perforation of hollow abdominal viscera. Which were admitted to this hospital from the cases were studied with regard to etiology, clinic features investigation, treatment and complications.

METHODS

This study was conducted after the institutional ethical clearance and informed written consent from all the subjects. Fifty surgically proved perforative peritonitis cases admitted to the surgical wards of K.R. hospital, Mysore, were included in the study.

A detailed history was taken and the presenting signs and symptoms were recorded. A thorough physical examination was done with special emphasis on the abdominal examination. Laboratory investigations included routine blood, urine and stool examinations. Total count and differential leucocyte count were done in appropriate cases. Diagnostic peritoneal tapping was done after taking X-ray and subjected to culture and sensitivity tests. Radiological examination was done in all the cases to detect pneumoperitoneum. Ulcer edge biopsy was taken from cases of, wherever possible, peptic and non-specific ileal perforations and subjected to histopathological examination. In operated cases peritoneal exudate was sent for culture and sensitivity test of the organisms present.

The pre-operative preparation of each case essentially consisted of correction of dehydration, overcoming the shock if it was present, gastric aspiration, parental broad spectrum antibiotic coverage and tetanus prophylaxis. The treatment to be adopted in each case was decided by the attending surgeon. Post-operative fluid and electrolyte balance was maintained by input and output charts and adequacy of replacement was judged mainly on the basis of clinical features. In most of the cases antibiotics started pre-operatively were continued and changed to suitable antibiotics after the sensitivity of the organisms was known. The drainage tubes were removed on the 3rd and 4th post-operative day and the gastric aspiration was discontinued as soon as the patient passed the flatus. The post-operative complications were studied in the immediate follow up period.

Statistical analysis

The values are expressed as mean and the percentile was calculated in each parameters.

RESULTS

Fifty surgically proved perforative peritonitis cases admitted to the surgical wards of K.R. hospital, Mysore, were included in the study. 90% of the subjects recruited in the study were males whereas; only the 10% were females (Table 1). Majority of the patients belongs to the age group of 31-40 years (Table 2). The majority of the patients were from the low socio-economic strata. Of the 32 cases of perforated peptic ulcer, 19 gave the previous history of pain abdomen lasting from 6 months to 15 years, 1 gave the history of fever and in 14 cases there was no history. In the case of appendicular perforations 2 patients gave a previous history of pain abdomen, 2 gave a history of fever and 2 did not give any history. History of fever was present in all six cases of enteric ileal perforations. Previous history of fever was present in 5 cases of non-specific ileal perforations (Table 3). A plain X-ray of the abdomen in the erect posture was taken in all the cases. 36 cases showed gas under the diaphragm. The pneumoperitoneum is demonstrable on X-ray in 60-80% cases of peptic as well as non-traumatic small bowel perforations (Table 4). In 76% of the cases, surgery could be undertaken within 6 hours after their admission to the hospital. Most of the patients, who were brought to the hospital after much delay, were in the condition of shock. So valuable time was lost in trying to improve their general condition to make hem fit for surgery (Table 5).

Table 1: Incidence of peritonitis on the basis of sex. N=50.

Sex	No. of cases	Percentage
Male	45	90
Female	5	10
Total	50	100

Table 2: Incidence of peritonitis on the basis of age. N=50.

Age in years	No. of cases	Percentage
<10	0	0
11-20	4	8
21-30	16	32
31-40	13	26
41-50	8	16
51-60	7	14
61-70	1	2
71-80	1	2
Total	50	100

Table 3: Incidence of peritonitis on the basis of signs and symptoms. N=50.

Symptoms & signs	Peptic ulcer perforations		Non-specific perforations		Appendicular perforations		Enteric ileal perforations		Total	
	No. of cases	%	No. of cases	%	No. of cases	%	No. of cases	%	No. of cases	%
Pain	32	100	6	100	6	100	6	100	50	100
Vomiting	21	65.5	4	66.6	6	100	1	16.6	32	64
Constipation	16	50.0	4	66.6	3	50	0	0	23	46
Diarrhoea	1	3.12	1	16.6	0	0	0	0	2	4
Distension	32	100	6	100	6	100	6	100	50	100
Fever	5	15.6	5	83.3	5	83.3	6	100	21	42
Tenderness	32	100	6	100	6	100	6	100	50	100
Rigidity	32	100	6	100	6	100	6	100	50	100
Obliteration of liver dullness	26	81.3	5	83.3	1	16.6	4	66.6	36	72
Absent/diminished bowel sounds	27	84.3	4	66.5	4	66.6	5	83.3	40	80
Shifting dullness	23	71.8	4	66.6	0	0	2	33.3	29	58

Table 4: Radiological investigation for the elucidation of the diagnosis. N=50.

Cases	Gas under the dome of diaphragm	
	No. of cases	%
Peptic ulcer perforations	26	81.25
Non-specific ileal perforations	5	83.30
Appendicular perforations	1	16.60
Enteric ileal perforations	4	66.60
Total	36	72

Table 5: Time in hours between the appearance of first symptom, admission to the hospital and surgery. N=50.

Time in hours	Between the appearance of first symptom and admission to the hospital		Between admission and surgery	
	No. of cases	%	No. of cases	%
<6	03	06	38	76
6-12	08	16	08	16
12-24	12	24	04	08
>24	27	54	-	-
Total	50	100	50	100

DISCUSSION

In the present study, the much higher incidence of perforative peritonitis in males compared to the females

may be attributed to the following factors: Peptic ulcer is more common in males; hence the concomitant higher incidence of perforations and the non-specific. Heal perforations are more common in males than in females.⁸ However, in the last few decades there was been a marked decrease in the male: female ratio in some parts of the western world. The male: female ratio for perforated duodenal ulcer fell in England, Wales and Scotland from approximately 6:1 during 1958-62 to 2:1 during 1978-1982.⁹ In the same period the ratio for perforated gastric ulcer fell from 3.2:1 to 1:1. The change in the sex ratios has occurred because of a fall in the absolute perforation rate in men, together with a rise in the perforation rate in women. The studies by Koo and Colleagues in 1983 and Negre in 1985 showed male preponderance.¹⁰⁻¹² A high proportion of females with perforated ulcer were noted by Hugh et al., in Australia in 1969.¹³ The maximum incidence of 32% was seen in the third decade of life and the next highest was 26% in the fourth decade. The peak incidence in the third decade is due to the fact that peptic ulcer is common in that age group.

The majority of the patients were from the low socio-economic strata. There were no patients from the middle or upper income groups. But this cannot be taken to indicate that perforative peritonitis is rare in the higher income strata. The preponderance of patients from the low socio-economic strata in this study is because most of the patients who attend this general hospital are from those strata. Middle and upper class patients probably obtain their medical care from private hospitals.

In the present study, of the 32 cases of perforated peptic ulcer, 19 gave the previous history of pain abdomen

lasting from 6 months to 15 years, one gave the history of fever and in 14 cases there was no history. The predominant symptoms in this series cases were pain, distension of abdomen, vomiting, constipation and fever; while tenderness, rigidity, obliteration of liver dullness and absent/diminished bowel sounds were the main signs. The liver dullness was obliterated in 72% of cases. The correlation between the clinical signs and objective evidence as revealed by the presence of gas under the dome of the diaphragm in an X-ray film of the abdomen taken in an erect posture was fairly good. According to the literature, the presence of gas under the diaphragm as a radiological entity is said to be found in 60-80% of the cases of perforated peptic ulcers.

Routine investigations were done wherever possible, but they added little to the elucidation of the diagnosis. A plain X-ray of the abdomen in the erect posture was taken in all the cases. 36 cases showed gas under the diaphragm. According to the literature, pneumoperitoneum is demonstrable on X-ray in 60-80% cases of peptic as well as non-traumatic small bowel perforations.¹⁴ After studying this series it may be observed that most of the patients come to the hospital after much delay. The delay in seeking medical treatment could be attributed to various factors like ignorance and lack of conveyance from their places to the major hospital. In some cases valuable time was lost due to the wrong diagnosis of the condition by the local practitioners. In 76% of the cases, surgery could be undertaken within 6 hours after their admission to the hospital. Most of the patients, who were brought to the hospital after much delay, were in the condition of shock. So, valuable time was lost in trying to improve their general condition to make them fit for surgery. This showed that the maximum mortality occurred in those patients who were admitted to the hospital after more than 24 hours from the time of appearance of the first symptom. The main cause of mortality in our patients is therefore due to delay in attending the hospital rather than delayed surgery.

CONCLUSION

Peritonitis secondary to perforation of a gastro-intestinal tract is one of the commonest abdominal emergencies. The commonest causes of secondary peritonitis were peptic ulcer perforations, non-specific heal perforations, appendicular perforations and enteric heal perforation. The highest incidence was seen in the 3rd decade of life. The study showed that the maximum mortality occurred

in those patients who were admitted to the hospital after more than 24 hours from the time of appearance of the first symptom. Therefore, it is advised not to delay in attending the hospital rather than delayed surgery.

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