

Acute Generalized Peritonitis: Surgical Management Options

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Abstract

Background: Acute generalized peritonitis (AGP) is an acute disseminated inflammation of the peritoneum caused by septic inoculation, most often from an intra-peritoneal organ, and more rarely after systemic contamination. The aim was to contribute to the management of AGP in Basrah.

Methods: This is a descriptive study in the department of surgery of Al-Sadder Teaching Hospital, Basrah Health Directorate, Ministry of Health at period of 12 months of 2023. All patients received, operated on and followed up in the department for AGP during the study period were included.

Results: Clinical signs included abdominal pain and abdominal contracture in all patients. Peptic ulcer perforation accounted for 41.9% (n = 25) of cases. The mean age of patients was 35.47 years and the age group most affected was 15 - 29 years, i.e., 46.8%. Males were most affected, with 75.8% of cases and a sex ratio of 3.1. The clinical picture was dominated by abdominal pain and abdominal contraction in all patients. Etiologies were dominated by peptic ulcer perforation in 41.9% (n = 25) of cases, followed by appendicular peritonitis in 24.2% (n = 14).

Conclusion: AGP is a frequent abdominal emergency. Management is medical-surgical. Good resuscitation and peritoneal cleansing could improve the management of AGP.

Keywords: Acute generalized peritonitis, Abdominal pain, Stercoral fistula, Perforation, Bulging the Douglass

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Introduction

AGP is an acute disseminated inflammation of the peritoneum caused by septic inoculation, most often from an intraperitoneal organ, and more rarely after systemic contamination [1]. They may be primary, secondary or tertiary. Peptic ulcer perforation is the most frequent etiology. Ileal perforations are also found to a lesser extent in series from tropical countries [2]. In sub-Saharan Africa, they pose a real public health problem, due to the morbidity and mortality they entail [3]. Management combines pre-, intra- and postoperative resuscitation, surgical eradication of intraperitoneal infection and appropriate antibiotic therapy [4]. It is a serious medical and surgical emergency. Its severity depends on the patient's age, general condition, associated defects, etiology and the time required for treatment [5]. The aim of this study was to contribute to the improvement of the management of AGP in Basrah.

Methods

A descriptive study lasting 12 months 2023, carried out in the department of general surgery. We enrolled all patients received and operated on for abdominal surgical pathology in our department during the study period. All patients admitted to the department for AGP during the study period were included. All patients received, operated on and followed up in the department for AGP during the study period were included. Our study variables were quantitative and qualitative.

An X-ray of the abdomen was performed for patients. The findings

were: diffuse grayness, pneumoperitoneum and hydroaerosol levels. All patients had a CBC. Hyperleukocytosis of > 13,000 globules/mm³ was noted and anemia. All our patients benefited from preoperative, intraoperative and postoperative resuscitation medication:

- Rehydration fluids.
- Analgesics.
- Antibiotics.
- Urinary catheter.
- Nasogastric tube.
- Blood transfusion.

The surgical approaches were median laparotomy above and below the umbilicus in all patients. Surgical procedures included peritoneal cleansing and drainage of the Douglas. Surgical treatment of the cause was dominated by excision-suture of perforations, and appendectomy.

Results

The mean age of patients was 35.47 years and the age group most affected was 15 - 29 years, i.e., 46.8%. Males were most affected, with 75.8% of cases and a sex ratio of 3.1. The clinical picture was dominated by abdominal pain and abdominal contraction in all patients (Table 1). Etiologies were dominated by peptic ulcer perforation in 41.9% (n = 25)



Table 1: The variables of the study.

Variables		No.	%
Age (years)	< 15	3	4.8
	15 - 29	29	46.8
	30 - 44	13	21
	45 - 59	13	21
	≥ 60	4	6.4
Sex	Male	46	75.8
	Female	14	24.2
Symptoms	Abdominal pain	60	100
	Vomiting and nausea	39	62.9
	Stoppage of matter and gas	34	54.8
Signs	Contraction	62	100
	Umbilical spasm	55	88.7
	Bulging the Douglass	52	83.9
	Dullness	46	74.2
	No pre-hepatic dullness	38	61.3

of cases, followed by appendicular peritonitis in 24.2% (n = 14) (Table 2).

Discussion

The difficulties we encountered during our study were the unavailability of certain imaging (CT) and biological examinations. Peritonitis is a frequent surgical emergency. In our series, we recorded a high frequency of AGP. Our result was close to that of Kanté et al. [5] in 2020 in the Democratic Republic of Congo, who reported 35.08% of AGP cases. Our frequency was higher than that of Naby et al. [6] in Guinea in 2021, who reported 7.80% of cases. This could be explained by the fact that Naby et al. [6] study was carried out in a district (regional) hospital, unlike ours, which was carried out in a referral department at the university hospital. In our study, we noted a predominance of young adults. Our result was comparable to those reported by Choua et al. [7] and Sogoba et al. [8], who respectively reported a mean age of 25.8 years with extremes of 1 and 70 years and 40.1 years with extremes of 1 and 80 years. This predominance of peritonitis in young adults in Africa is in line with the population's predominantly young age. It could also be explained by the existence of risk factors for AGP, such as alcohol, tobacco, and abdominal trauma.

We recorded a male predominance. Although gender is not a risk factor, our result is consistent with data reported by Keita et al. [9]. This could be explained in our context by the fact that male subjects are more exposed to AGP risk factors than females. Abdominal pain was the main reason for consultation in all patients, followed by nausea-vomiting and cessation of bowel movements and gas. Our results were similar to those of Naby et al. [6], who reported 100% abdominal pain, 78.78% nausea and vomiting, and 75.75% cessation of bowel movements and gas. The same observation has been made by several other African authors [7-9]. These symptoms are frequently found in abdomino-digestive emergencies. We noted a delay in consultation in our study. Our result was similar to that of Sogoba et al. [8] in Mali in 2021, who found a mean course of 4.5 days, with extremes of 1 and 8 days. In our context, patients usually self-medicate or turn to traditional healers as soon as the first symptoms appear. It's at the critical stage of the disease that we receive them in hospital. On physical examination, abdominal defensiveness/contracture was found in all our patients, followed by umbilical crying and a bulging, painful Douglas. Our results are similar to those reported by other authors [7-9]. The high frequency of abdominal defensiveness could be explained by the delay in patient consultation. Most of our patients underwent an unprepared abdominal X-ray. The same observation was made by Rakotomavo et al. [10] in 2012 in Madagascar and Sogoba et al. [8] in Mali in 2021

Table 2: Distribution of patients by AGP etiology.

Etiologies	No.	%
Peptic ulcer perforation	25	41.9
Appendicular peritonitis	14	24.2
Non-traumatic ileal perforation	11	17.8
Post-operative peritonitis	8	12.9
Colonic perforation	1	1.6
Pyosalpinx rupture	1	1.6
Total	60	100

who reported the presence of radiological pneumoperitoneum with respective rates of 60% and 66.7%. The etiologies found in our study were dominated by peptic ulcer perforation, followed by appendicular peritonitis. Our results were similar to those reported by Kambiré et al. [11] in Burkina Faso in 2018, with 17.2% of cases, in contrast to Keita et al. [9] in Guinea in 2023, who found a predominance of appendicular perforation with 55% of cases. In our context, this could be explained by the deterioration of socio-economic conditions in our country, which favors *Helicobacter pylori* infection, self-medication (taking anti-inflammatory drugs) and narcotics by the socio-demographic stratum most concerned in our study, on the one hand, but also the delay in consultation and recourse to traditional medicine, which favors complications of acute appendicitis, on the other. Adjuvant medical treatment consisted of pre-, intra- and postoperative resuscitation. Median laparotomy above and below the umbilicus was the only approach used in all patients. The surgical approach to AGP depends on the surgeon's intraoperative findings. All our patients underwent peritoneal cleansing, Douglas drainage and etiological treatment. Etiological treatment consisted of excision-suture of perforations and appendectomy. Our results were similar to those reported by Choua et al. [7], Sogoba et al. [8], and Keita et al. [9]. Postoperative follow-up was overall satisfactory. However, we recorded morbidity in the form of surgical site infection and stercoral fistula. These deaths were attributable to stercoral fistulas and anesthesia complications in the recovery room. Keita et al. [9] in Guinea in 2023 reported 87% simple sequelae, 6.45% parietal suppurations, 3.22% ventrations and 3% deaths. Delayed consultation and bacterial proliferation during peritonitis rendering surgery septic could account for the occurrence of these complications. The average length of stay was long in our series. Choua et al. [7] in Chad in 2017 found an average hospital stay of 8.5 days, with extremes of 2 and 150 days. This long patient stay could be explained by the occurrence of postoperative complications.

Conclusion

AGP is a frequent abdominal emergency. It is a pathology of young adult males. The etiologies are multiple. Management is medico surgical. Good resuscitation and peritoneal cleansing could improve the management of AGP.

Acknowledgements

None.

Conflict of Interest

None.

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