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Original Research Article

Indications for emergency abdominal surgery in Cape Coast, Ghana

Ganiyu A. Rahman*, Samuel A. Debrah, Edwin A. Andoh

Department of Surgery, School of Medical Science, University of Cape Coast, Ghana

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***Correspondence:**
Dr. Ganiyu A. Rahman,
E-mail: garahman1@yahoo.com

ABSTRACT

Background: Emergency abdominal surgery continues to form a major workload of the general surgeon. As a result of variation of causes, there is need to revisit and review the pattern of presentation, management and outcome. There had been previous studies from Korle Bu Teaching hospital and Komfo Anokye Teaching Hospital both in Ghana, but this is from Cape Coast Teaching Hospital (CCTH), Central Region, Ghana. The objective is to determine the pattern of presentation and indications for surgery in patients who had emergency abdominal surgical operation in CCTH.
Methods: All patients who had emergency abdominal surgical operations at the Cape Coast Teaching Hospital from 1st January 2011 to 25th October 2012 were retrospectively reviewed.
Results: Four hundred and eleven patients had emergency abdominal operation over a period of 22 months. The mean age at presentation was 36.3 years (SD 19.3). Male to Female ratio was 2.3:1. Intestinal obstruction was the commonest indication for surgery followed by appendicitis and typhoid ileal perforation. Obstructed abdominal wall hernia was the commonest cause of intestinal obstruction.
Conclusions: Early reporting in hospital and access to hernia repair will reduce the morbidity and mortality known to be associated with this condition.

Keywords: Emergency abdominal surgery, Ghana, Intestinal obstruction, Typhoid ileal perforation

INTRODUCTION

Emergency abdominal surgeries form a substantial part of the General Surgeons' workload. This is even more common in developing countries. Management of emergency general surgical conditions remain a challenge in developing countries due to issues of insufficient human capacity and infrastructure.[1,2] In the absence of surgical care, case-fatality rates are high for common, easily treatable conditions including appendicitis, hernia, fractures etc.[3] The major indications for emergency abdominal surgery vary from one region to the other and even within the same region there may be variation. The variations may be based on socio-demographic, socio-economic, cultural or geographical factors. It is therefore important to know the common causes in each region and also review from time to time to assist quick decision taking, appropriate management and improvement of outcome. The aim of this study is to determine the socio-demographic pattern at presentation and indications for surgery in patients who had emergency surgical operations at CCTH, Cape Coast.

METHODS

Central regional hospital Cape Coast (now Cape Coast Teaching Hospital) is a referral hospital with 250 beds (recently increased to 400 beds).

The clinical activities in the hospital have increased recently with the hospital designated for training undergraduate medical students of the School of Medical Sciences, University of Cape Coast.

All patients who had emergency abdominal surgical operations in this hospital from 1st January 2011 to 25th October 2012 were included in this retrospective review.

Patients were usually seen by the team on call in the emergency room. They were all resuscitated and optimized for surgery. The patients had naso-gastric decompression, intravenous fluid therapy, correction of electrolyte deficit, appropriate intravenous antibiotics (ciprofloxacin/ ceftriaxone, gentamycin and metronidazole). Only those who had surgical operation were included in this study.

Details of socio-demographic data, clinical presentation, diagnosis, operative procedure and outcome were retrieved from the hospital records. The data was analyzed using SPSS version 16.

Inclusion criteria

All patients that had emergency abdominal surgery during the study period

Exclusion criteria

- Patients with acute abdomen that did not have emergency surgery
- Emergency urological operations
- Emergency gynaecological operations

RESULTS

At the Central Regional Hospital, Cape Coast, from 1st January 2011 to 25th October 2012 (a period of 22 months), five hundred and four emergency operations were carried out by the General Surgery team. There were 411 abdominal emergency operations which constituted 81.5% of the emergencies. These 411 patients were reviewed in this study.

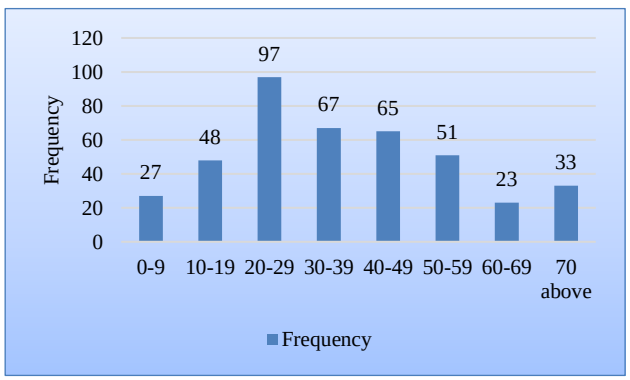

Figure 1: Age distribution of patients who had emergency abdominal surgeries (n = 411).

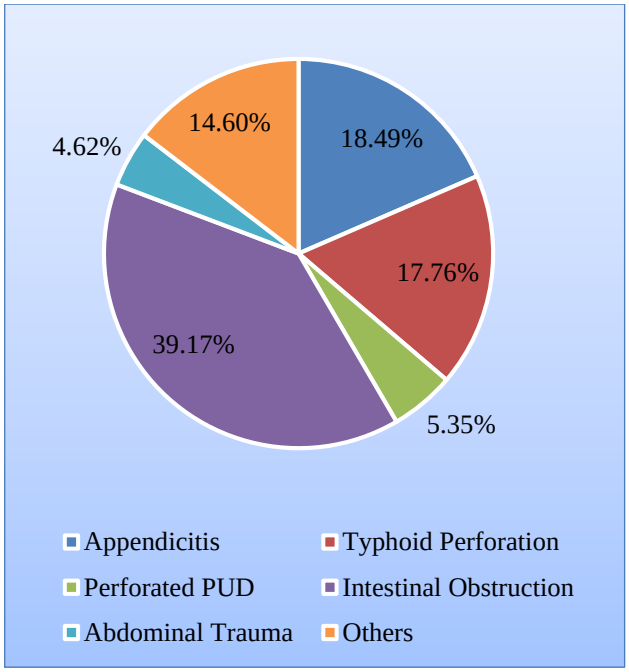

Figure 2: Indications for emergency abdominal surgeries (n = 411).

The age at presentation ranged from 1-90 years. The mean age was 36.3 (SD 19.3). The peak age at presentation was the 3rd decade (Figure 1). The male to female ratio was 2.3:1. The commonest indication for emergency abdominal surgery was intestinal obstruction constituting 39.2% of the patients followed by appendicitis and typhoid ileal perforation (Figure 2).

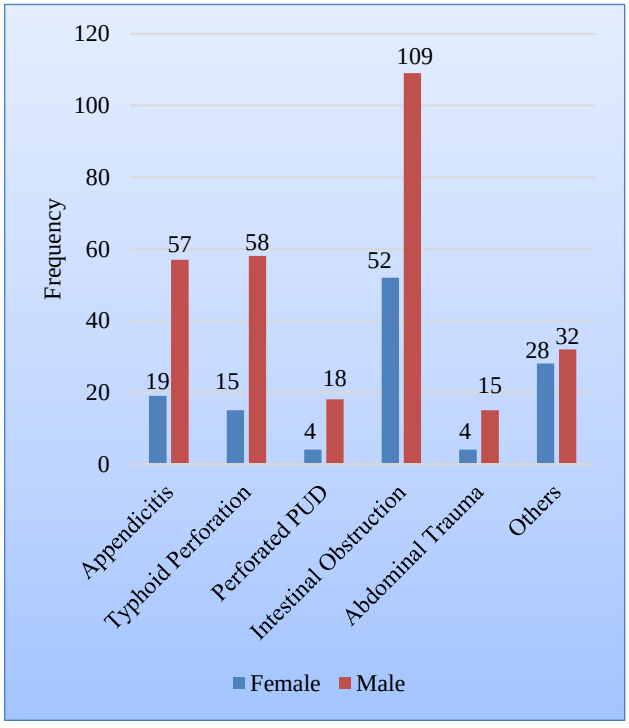

Figure 3: Gender differences in patients that had emergency abdominal surgeries (n = 411).

Though overall male to female ratio was 2.3:1, in patients with intestinal obstruction, appendicitis, typhoid perforation and perforated peptic ulcer disease, the ratios were 2.1:1, 3:1, 3.9:1 and 4.5:1 respectively (Figure 3).

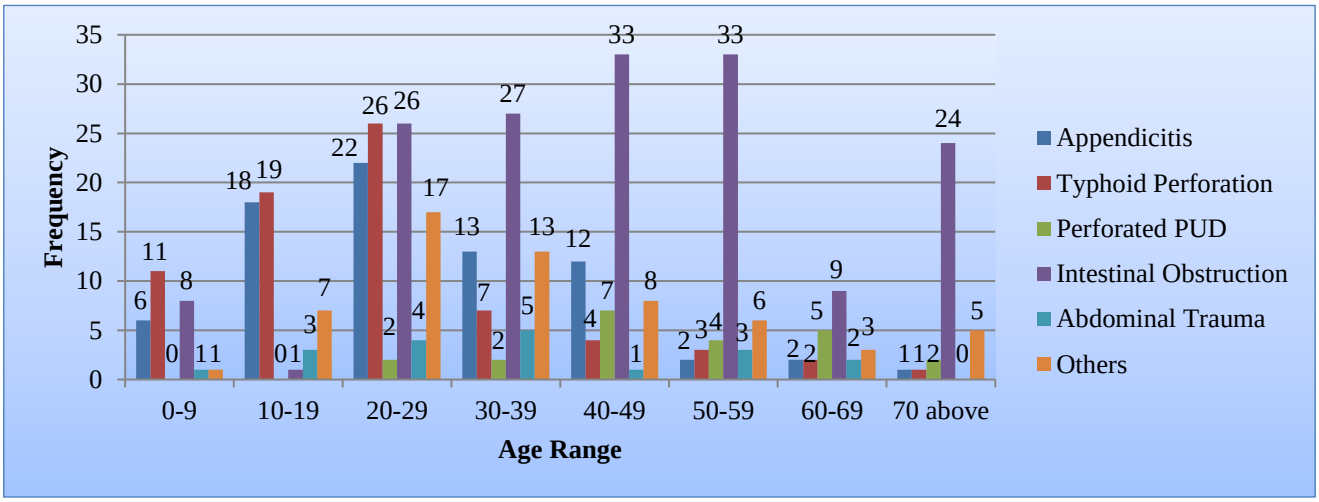

Figure 4: Indications for emergency abdominal operation in different age groups (n = 411).

In patients less than 40 years of age the commonest indications for emergency surgical operations were intestinal obstruction, appendicitis and typhoid ileal perforation but in older patients, intestinal obstruction was the main problem (Figure 4).

DISCUSSION

In this study abdominal surgery is the most common of emergency surgeries. This is in keeping with most findings reported in other low- and middle-income countries.[4,5] However, this is different from a recent study from Rwanda where soft tissue infections are the most common.[1]

The pattern and presentation of emergency abdominal surgery in Africa differs from that of developed countries. For example, in a study from Boston, Massachusetts (USA), urinary tract stone (31.4%), appendicitis (23.6%), intra-abdominal abscess (17.4%), diverticulitis (16.9%) and small bowel obstruction (10.6%)[6] were the commonest cause of acute, non-traumatic abdominal pain while in sub-Saharan Africa, intestinal obstruction, acute appendicitis, typhoid ileal perforation and perforated peptic ulcer are the most common causes of non-obstetrical/ gynaecological surgical abdominal emergencies.[7-11]

In this study the indications for emergency abdominal surgery are intestinal obstruction, appendicitis, typhoid ileal perforation and perforated peptic ulcer disease which is similar to other studies from African countries.[7-11] The male to female ratio is 2.3:1. This is different from the ratio of 1.95:1 in USA but similar to a range of 1.8:1-3.6:1 in Africa.[6-11] From this study, males present twice as common as females with emergency surgical abdominal conditions.

In patients presenting with intestinal obstruction, the male to female ration is similar to the ratio in all patients presenting with emergency surgical abdomen, however, in patients with typhoid perforation and perforated peptic ulcer, the ratio is much higher. This may be as a result of the high incidence of primary disease (typhoid enteritis and peptic ulcer disease) been more common in males.

Emergency abdominal surgery in Cape Coast is more common in the 3rd and 4th decade but intestinal obstruction is more common in the 5th and 6th decade of life. This may as a result of the fact that obstructed external abdominal hernia is the commonest cause of intestinal obstruction 46.6%.

Though intestinal obstruction is common in all age groups, appendicitis and typhoid ileal perforation is more common in patients less than forty years.

Intestinal obstruction is the commonest cause of emergency surgical operation in Cape Coast. Further analysis of causes of intestinal obstruction showed that obstructed abdominal wall hernia is commonest cause. This has been the trend in developing countries though recent reports from some developing countries have shown a changing pattern. Obstructed hernia still remains the most common cause in our study probably because it is a regional hospital with referrals from rural agrarian/ fishing communities. The high incidence of obstruction at presentation may be as a result of ignorance, poverty and

poor access to elective orthodox hernia repair. As we increase awareness through health education and patients have access to expert surgical service, there may be decrease in the number of obstructed hernias.

CONCLUSION

In conclusion, the most common surgical emergency in Cape Coast is abdominal emergency and the common indications for emergency abdominal surgeries are: intestinal obstruction, appendicitis and typhoid ileal perforation. Obstructed hernia is still the most common cause of intestinal obstruction. There is need to educate the people and make surgical service for elective repair of hernia accessible to reduce the incidence of intestinal obstruction.

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Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Mpirimbanyi C, Nyirimodoka A, Lin Y, Hedt-Gauthier BL, Odhiambo J, Nkurunziza T, et al. Emergency general surgery in Rwandan district hospitals: a cross-sectional study of spectrum, management, and patient outcomes. BMC Surg. 2017;17:121.
2. Chu K, Rosseel P, Gielis P, Ford N. Surgical task shifting in sub-Saharan Africa. PLoS Med. 2009;6:1-5.
3. Meara JG, Leather AJ, Hagander L, Alkire BC, Alonso N, Ameh EA, et al. Global surgery 2030: evidence and solutions for achieving health, welfare and economic development. Lancet. 2015;386(9993):569-624.
4. Shah AA, Latif A, Zogg CK, Zafar SN, Riviello R, Halim MS, et al. Global medicine emergency general surgery in a low-middle income health care setting: determinants of outcomes. Surg. 2014;159:641-9.
5. Memon AA, Bhutto AA, Shaihk GS, Jokhio A, Soomro Q. Spectrum of diseases in patients with non-traumatic acute abdomen. J Liaquat Uni Med Health Sci. 2008;7:180-3.
6. Rosen MP, Siewert B, Sands DZ, Bromberg R, Edlow J, Raptopoulos V. Value of the abdominal CT in the emergency department for patients with abdominal pain. Eur Radiol. 2003;13:418-24.
7. McConkey SJ. Case series of acute abdominal surgery in rural Sierrra Leone. World J Surg. 2002;26:509-13.
8. Ohene-Yeboah M. Acute surgical admissions for abdominal pain in adults in Kumari, Ghana. Aust. N Zealand J Surg. 2006;76:898-903.
9. Séréngbé BG, Gaudeuille A, Soumouk A, Gody JC, Yassibanda S, Mandaba JL. Acute abdominal pain in children at the Pediatric Hospital in Bangui (Central Africal Republic). Epidemiological, clinical therapeutic and evolutive aspects. Arch Pediatr. 2002;9:136-41.
10. Adesunkanmi ARK, Oseni SA, Adejuyigbe O, Agbakwuru EA. Acute generalized peritonitis in African children: assessment of severity of illness using modified APACHE II score. ANZ J Surg. 2003;73:275-9.
11. Ohene-Yeboah, M. Causes of acute peritonitis in 1188 consecutive adult patients in Ghana. Trop Doctor. 2005;35:84-5.

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