Reviewer's report

Title: High APACHE 2 score and long length of bowel resection impair the outcomes in patients with necrotic bowel induced hepatic portal venous gas

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Reviewer: ABDULZAHRA HUSSAIN

Reviewer's report:

Dear Authors;
I read with great interest your article. You have posed that APACHE score II and the resected segment of the bowel are predicting factors for the outcome of the HPVG.

I appreciate that great efforts have been put in the article, however the paper need further revision to improve the quality and put more insights and knowledge in the subject.

Please address these comments carefully;

INTRODUCTION:
1. You have mentioned the largest reported series up to date is 7 patients. That is not true, several papers in the literature are reporting more than this number. I am attaching one reference, please check: Paran H, Epstein T, Gutman M, Shapiro Feinberg M, Zissin R. Mesenteric and portal vein gas: computerized tomography findings and clinical significance. Dig Surg. 2003;20(2):127-132.
2. The pathophysiology of HPVG can be explained by
   a. mucosal damage and lumenal gas escape to the portal system via portal microvenule.
   b. Septic embolization or abscess that rupture through the small portal venules.

Other less important factors are increased lumenal pressure such as during colonoscopy or large bowel enema which are associated with HPVG.

PATIENTS AND METHODS:
1. Diagnosis is depending on the clinical presentation of septic shock and peritoneal signs and also on the CT demonstration of poor enhancement:

   Although this statement is generally true, however sepsis and peritoneal signs are not specific for bowel ischemia and other abdominal catastrophes can present similarly. Therefore taking this as a proof of diagnosis is not completeley trus.

   Again CT scan specificity for bowel ischemia is not 100% as we all know it is radiologist dependent as in all other cross sectional studies. The final diagnosis is made in theatre. Therefore the 6 patients who have been diagnosed on clinical
and perhaps radiological bases should be excluded from this study.

2. Why end stoma has been performed for every patients. Double barrel stoma can be very helpful to assess the proximal and distal bowel in borderline cases.

3. Second look laparoscopy rather than laparotomy may be indicated in some cases.

THE RESULTS:

1. No data are mentioned on the type of procedure? small bowel resection, right hemicolectomy, total colectomy, etc.

2. No thing mentioned about vascular involvement; some of the patients need revascularization if the SMA critical narrowing is confirmed as the cause of ischemia. The issue is very important for patients who need extensive resection as revascularization may keep the patient with more than 110 cms of small bowel that safe him nutritional support.

3. Nothing mentioned about the extreme cases that surgeon do nothing but to close the abdomen. How many of these have been encountered?

4. How many patients have small bowel remnant less than 110 cms after resection? and how may subjected to nutritional support as intestinal failure cases.

DISCUSSION:

1. The author should also consider benign causes of HPVG and should clarify that it is not ominous sign in all patients as the course in benign cases is complete recovery.

2. Other tests as arterial blood gas and lactate level should be mentioned as supportive especially in unconscious patients [intubated ITU] patients for example.

**Level of interest:** An article of limited interest

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests