Reviewer’s report

Title: Percutaneous cholecystostomy in acute cholecystitis. A retrospective analysis of patients treated at a tertiary referral hospital

Version: 3
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Reviewer: Giuseppe Borzellino

Reviewer’s report:

This is a retrospective cases series the aim of which was to evaluate the role of percutaneous cholecystostomy as an alternative to cholecystectomy for acute cholecystitis. Data of patients submitted to percutaneous cholecystostomy were reviewed. In the result section the Authors report data on included patients, rate of feasibility and rate of complications of cholecystostomy, median time before removing cholecystostomy, evaluation of clinical effect on symptoms and on CRP and white blood cell counts, post-operative mortality, total hospital stay, and data on median follow up. In the discussion main results of the study are reported with an overview on cholecystostomy indication and a paragraph on Author policy. Three RCT and a review on cholecystostomy are cited. The conclusion is that cholecystostomy is valid alternative but it should be clarified in which cases laparoscopic cholecystectomy is a better treatment.

1. Is the question posed by the Authors important, original and well defined?

Major compulsory revisions:

The question is not defined with appropriate precision. In the abstract the declared aim was the evaluation of a possible benefit of cholecystostomy in patients with acute cholecystitis, in the introduction it appears that the subjects of study were only patients with moderate to severe acute cholecystitis, finally it appears that patients with all type of cholecystitis were enrolled as well as patients without a cholecystitis such as cholangitis, gallbladder stones…

Finally cholecystostomy seems to be proposed not to improve results of treatment of acute cholecystitis but as an alternative to the standard treatment which is difficult to perform because of limited resources. Limited resources have to be explained, are there limitation in instrumentation, experience of some surgeon, aviablility of operating room or else? In the series, patients with acute cholecystitis were less than 100, based on the data on associated diseases, those of them who may have benefit of urgent cholecystectomy were around 60 and this, during a study period of 6 years. Limited resources for 10 urgent intervention per year have to be clearly reported since they appear to be the main reason why proposing cholecystostomy

The Authors do not take into account the role of cholecystostomy in patients with associated diseases not fit for urgent surgery, such patients being in the current opinion those who may have a major benefit from cholecystostomy.

2. Are the methods appropriate and well described?
Major compulsory revisions:

Based on the aim of the study the method is not appropriate. A retrospective case series does not allow to compare an alternative method with the standard, a comparative study should have been necessary for such an evaluation of an alternative treatment for acute cholecystitis.

3. Are the data sound?

Minor revisions:

Results are reported with attention to details, however effect on white blood cell count is declared but results are not reported.

Results appears discouraging, high feasibility is reported but dislocation and complications of cholecystostomy are not negligible, post-operative mortality and mortality at 9 month of follow up is impressive. The results do not encourage to perform cholecystostomy in young healthy patients. It is intuitive that such results may be ascribed to those patients with severe associated diseases. A sub-group analysis of results in healthy patients and in patients with associated disease should therefore be reported.

Rates and percentage are calculated on the basis of 111 patients, while patients with acute cholecystitis were about 100. This should be the number of reference for the calculation of rates and percentages.

What do the Authors mean in table 2 with: “passage through the cystic duct at the time of drain insertion” Do they mean the passage of contrast? In patients section, it appears that contrast at the time of drain insertion was used only to verify correct positioning of the catheter.

About statistics; there is no categorical data in the results, Authors may avoid reporting chi square statistic in the patients section. About continuous variable, normal distribution of data needs to be assessed before using T-test. However only variations of CRP have been statistically evaluated. Data on CRP are reported as median, with median IQR at 25% and 75% is more appropriate measure rather than the range. Moreover calculation are reported as differences of the means, again normality of distribution have to be assessed for the evaluation of difference of means, otherwise median are good measure, just needs to be statistically evaluated by a non parametric test such as a Mann-Whitney test.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?

Major compulsory revisions:

Since the aim of the study was the evaluation of cholecystostomy in patients suffering acute cholecystitis, those with cholangitis, gallbladder stone and other diagnosis should be excluded. As well if the aim is evaluation of cholecystostomy in severe acute cholecystitis only patients with severe acute cholecystitis have to be included and reported in results.

Minor revision:
The manuscript lacks of a clear method section that allows understanding how the Authors have projected to evaluate the procedure. Which parameters they choose and which data have been extracted to demonstrate the validity of cholecystostomy, which quantitative approach. A series of parameters are directly reported in the results section.

5. Are the discussion and conclusions well balanced and adequately supported by the data?

Minor revisions:

Based on the aim of the study, data of the literature on urgent cholecystectomy should be reported. Stated parameter for evaluation of cholecystostomy should be discussed and compared with those reported on literature cholecystectomy. For example a total hospital stay of 10 days is reported this result should be discussed and compared with those reported after cholecystectomy.

Major compulsory revision:

Presented data do not allow to draw any conclusion on cholecystostomy, the Authors themselves conclude that it should be clarified which patients may have benefit from cholecystostomy and which from cholecystectomy.

6. Are limitations of the work clearly stated?

Major compulsory revision:

Limits are not clearly stated.

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished?

Major compulsory revisions:


8. Do the title and abstract accurately convey what has been found?

Title is sound but in the abstract the reported aim of the study was evaluation of cholecystostomy in patients with acute cholecystitis, non sub-group analysis is reported in section or result methods, yet abstract conclusion is that cholecystostomy is reliable in patients with severe cholecystitis.

9. Is the writing acceptable?

Writing is satisfactory.

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

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.
Declaration of competing interests:

I declare that I have no competing interests