International Journal of Science and Research (IJSR)
ISSN: 2319-7064
Impact Factor 2024: 7.101

Comparative Study of Laparoscopic versus Open Surgery in Cases Hydatid Cysts of Liver

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Abstract: ***Hydatid disease, a zoonotic infection caused by Echinococcus granulosus, remains a global health concern, particularly in endemic regions. This study evaluates the effectiveness of laparoscopic surgery compared to traditional open surgery in the management of liver hydatid cysts, analyzing outcomes related to postoperative recovery, complications, and overall cost-effectiveness. It is evident that laparoscopic intervention offers several advantages, including reduced postoperative pain, shorter hospital stays, faster recovery, and superior cosmetic results. However, it requires meticulous surgical expertise to manage potential intraoperative bleeding and prolonged operative times. In my view, while open surgery remains a viable option, its association with higher morbidity, longer hospital stays, and increased financial burden makes laparoscopy the preferable choice in suitable cases. The findings suggest that minimally invasive techniques could become the standard approach, provided there is adequate surgical proficiency and preoperative planning. This research reinforces the growing shift toward laparoscopic management, highlighting its role in reducing patient discomfort while maintaining surgical efficacy.***

Keywords: liver hydatid cyst, laparoscopic surgery, open surgery, minimally invasive, surgical outcomes

1. Introduction

Hydatid disease is a zoonotic disease caused by the larval stage of Echinococcus Granulosus. The distribution of this disease is worldwide and the disease is endemic in certain areas. Hydatosis is the most common cause of liver cyst in the world has become a worldwide health problem as a result of increased travel and emigration. Treatment of hydatid liver cyst has to be considered mandatory in symptomatic cysts and recommended in viable cysts because of the risk of severe complications. Surgery is still the treatment of choice and can be performed by the conventional open surgery or laparoscopic approach. Laparoscopic surgery may be the better option as compared to open surgery due to less morbidity, better cosmetic outcome and overall cost effectiveness. This study compares the result between them in treatment of liver hydatid cyst.

2. Aims and Objectives

To study the demographic pattern of liver hydatid cysts. To study the merits and demerits of laparoscopy over that of open surgery in treatment of hydatid cysts of liver. To find out the morbidity or mortality rate in cases of liver hydatid cysts.

3. Material and Methods

This prospective observational study was carried out on 24 patient who diagnosed as a liver hydatid disease treated in Surgery Department, JLNMCH, Bhagalpur.

Inclusion Criteria

Able to freely give written informed consent to participate in the study and have signed the Informed Consent Form for the particular procedure. Patient completed with preoperative albendazole treatment as per protocol (mention below) and requiring surgery.

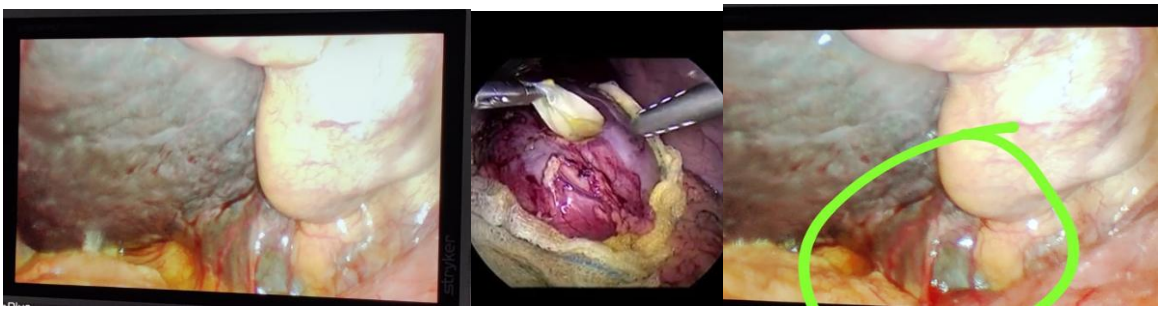
Exclusion Criteria

Patients with blood coagulation abnormalities. Patients with presence of extra - hepatic hydatid cyst. Patients who were pregnant. Patients with liver hydatid cysts having thick and calcified wall.

Method

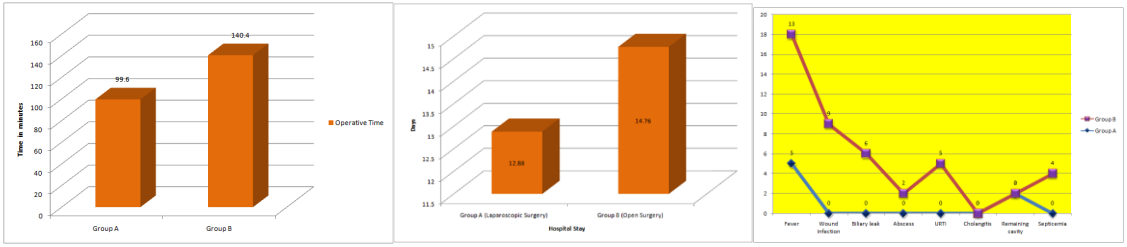
Preoperative investigations were done. Treatment modalities were planned once the definitive diagnosis of liver hydatid disease is made. All 24 Patients were randomly divided into two groups (Group A = Laparoscopic surgery and Group B = Open Surgery), either undergoing laparoscopic or open surgery. Informed written consent for surgery and for the study were taken.

Laparoscopic Surgery



Open Surgery

4. Result



5. Discussion

The disease affected females (56%) more than males (44%). The most common age group involved was <50 years (90%). The most common organ involved was liver (76.66%). Low socioeconomic status and occupation with history of contact with animals were the risk factors of the disease. Majority of cases had no history of contact with pets (62%). Thus absence of history of contact with pets doesn't rule out the possibility of disease. Mass per abdomen was the most common presenting symptom in liver hydatid. USG abdomen was a very helpful diagnostic tool for liver hydatid. Commonest operative procedure used was enucleation with external tube drainage for liver hydatid and excision for omental, mesenteric, peritoneal hydatid. Omentoplasty and capitonnage are other effective procedures to deal with residual cavity. Infection of the residual cavity and biliary fistula were the common complications both of which can be managed successfully with expectant treatment. There was no recurrence seen in the operated cases which were followed up for a period of 3 months. No mortality in the study group.

6. Summary

Laparoscopic surgery is better compared to open surgery in management of liver hydatid cyst due to less postoperative pain and analgesic requirement, early removal of ryles tube and abdominal drain, and early mobilization of patient, early return of bowel activity so early resumption to liquid diet and soft diet, less duration of postoperative hospital stay, less chance of wound infection, biliary fistula formation, last but not the least, patients had better cosmetic benefit and overall cost effective.

Patient with open surgery had large laparotomy incision scar mark, more postoperative pain and analgesia requirement, delayed oral intake late mobilization, more postoperative wound infection may lead large incisional hernia which may require further surgical treatment in future, more duration of hospital stay.

So overall open surgery gives more burden to patient in terms of money and time.

7. Conclusion

In present study suggest that patient of liver hydatid cyst treated by laparoscopy had less postoperative pain with minimal requirement of analgesia, early resumption of diet and daily routine activity, short hospital stay, least or no postoperative complications compared to open surgery.

It is overall cost effective and last but not the least is better cosmetic outcome. The laparoscopic management offers a better alternative to conventional open surgery for the

management of liver hydatid cysts and is worthy to be considered for suitable situations.

Treatment with laparoscopy require preoperative perfect diagnosis and location of liver hydatid cyst.

Intra operative bleeding and slightly more operative time can be overcome by experienced surgeon with expert team in laparoscopy.

However, encouraging results of our present study expand the role of minimal invasive surgery in management of liver hydatid cyst with less morbidity and mortality.

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