Original Article

Laproscopic Hydrodissection in Empyema of Gall Blader

Empyema of Gall Blader

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ABSTRACT

Objective: To find out the safety profile of laparoscopic hydrodissection in empyema of gallbladder.
Study Design: Experimental study.
Place and Duration of Study: This study was conducted at the Department of Surgery at Idris Teaching Hospital Sialkot from June 2014 to July 2016.
Materials and Methods: One hundred and fifty patients of empyema of gallbladder were included in this study. All the patients were diagnosed with clinical, sonological and biochemical evidence of cholelithiasis with empyema were included in the study regardless of age and gender.
Laproscopic hydrodissection was done by standard 4- port technique of empyema of gallbladder was used in all cases. In this technique the adhesions of empyemic gallbladder were removed by throwing water with pressure instead of using scalpel knife in all of the 150 cases. The charts were reviewed, and age, sex, family history of the empyema of gallbladder, date of surgery, surgery type, duration of surgery, post operative complications, stay in the hospital, were recorded. Patients follow up is also recorded. The results were analyzed on SPSS version 10. A well informed written consent was taken from each patient prior to surgery.
Results: In our study the incidence of empyema of gallbladder disease was found maximum at the age of 30-35 years (58%) 87 cases and minimum at the age of 46-50 years (1.3%) 02 cases. Empyema of gallbladder disease was (59.3%) 89 cases in females as compared to male (40.7%) 61 cases. The disease was (42%-47.3%) 63-71 cases in middle and high gentry class as compared to low socio economic status (10.7%) 16 cases. The urban Population had (64.7%) 97 cases as compared to rural area (35.3%) 53 cases. In our study the incidence of the disease was (62%) 93 cases from diabetic patients as compared to non diabetic patients (38%) 57 cases.Fatty people had (79.3%) 119 cases of empyema gallbladder as compared to non fatty patients (20.7%) 31 cases. It was also observed that empyema of gallbladder was higher (59.3%) 89 cases in people taking fast food as compared to patients taking simple food (40.7%) 61 cases. Majority of the patients were operated between 65-95 minutes. The overall rate of post operative complications was (20%) 30 cases in successfully completed laparoscopic hydro dissection. Majority of the patients (80%) 120 cases with successful laparoscopic hydro dissection were discharged within 48-96 hours. In (10.5%) 7 patients, the stay in the hospital was extended 5-7 days.
Conclusion: Laparoscopic hydro dissection of empyema of gallbladder can be performed keeping in mind a slightly increased risk of complications even in the best hands. However the experience of the surgeon plays a key role in the overall outcome.
Keywords: Empyema gall bladder, laparoscopic hydrodissection, morbidity, safety

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INTRODUCTION

The laparoscopic cholecystectomy (LC) has dramatically changed the outlook of patients with symptomatic gallstone disease. Empyema of the gallbladder is a potentially fatal complication of gallstones. It is characterized by suppuration superimposed on acute cholecystitis. The clinical presentation of this disease is often difficult to distinguish from acute Cholecystitis[1]. Features suggesting diagnosis and seriousness of this disease are few[2]. It used to be a contraindication for LC because of fear of life-threatening complications [3-7]. It is also considered one of the commonest reasons for the conversion[8]. Increasing experience and technology in the field of laparoscopic surgery has brought a significant change and a number of studies have reported LC to be safe and effective option in acute cholecystitis and associated conditions like empyema of the gallbladder[9-13]. There can be various reasons and factors which can however, lead to conversion[14]. Obscured local anatomy, uncontrolled bleeding and damage to nearby vital structures are the common factors

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responsible for conversion[15]. Despite various encouraging reports, the role of laparoscopic surgery in such acute conditions is still under evaluation. This study aimed to find out safety and outcome of laparoscopic hydro dissection in empyema gallbladder.

MATERIALS AND METHODS

One hundred and fifty patients of empyema of gallbladder were included in this prospective experimental study in the department of surgery at Idris Teaching Hospital Sialkot during June 2014 to July 2016. All the patients were diagnosed with clinical, sonological and biochemical evidence of cholelithiasis with empyema were included in the study regardless of age and gender.

Laproscopic hydrodissection was done by standard 4- port technique of empyema of gallbladder was used in all cases. In this technique the adhesions of empyemic gallbladder were removed by throwing water with pressure instead of using scalpel knife in all of the 150 cases.

The charts were reviewed, and age, sex, family history of the empyema of gallbladder, date of surgery, surgery type, duration of surgery, post operative complications, stay in the hospital, were recorded. Patients follow up is also recorded. The results were analyzed on SPSS version 10. A well informed written consent was taken from each patient prior to surgery.

Inclusion criteria: All patients with clinical, sonological and biochemical evidence of cholelithiasis with empyema were included in the study regardless of age and gender.

Exclusion criteria: Patients with major medical problems in which pneumoperitoneum was thought to be unsafe and those with overwhelming sepsis were excluded from the study

RESULTS

In our study the incidence of empyema of gallbladder disease was found maximum at the age of 30-35 years (58%) 87 cases and minimum at the age of 46 and above years (1.3%) 02 cases as shown in the table 1.

Empyema of gallbladder disease was (59.3%) 89 cases in females as compared to male (40.7%) 61 cases as shown in table no.2. The disease was (42%-47.3%) 63-71 cases in middle and high gentry class as compared to low socio economic status (10.7%) 16 cases as shown in table no.3. The urban Population had (64.7%) 97 cases as compared to rural area (35.3%) 53 cases as shown in the table no.4. In our study the incidence of the disease was (62%) 93 cases from diabetic patients as compared to non diabetic patients (38%) 57 cases as shown in table no.5.Fatty people had (79.3%) 119 cases of empyema gallbladder as compared to non fatty patients (20.7%) 31 cases as shown in table no.6. It was also observed that empyema of gallbladder was higher (59.3%) 89 cases in people taking fast food as compared to patients taking simple food (40.7%) 61 cases as shown in table 7.

Table No. 1: Age distribution in laproscopic hydro dissection in Empyema of Gall Bladder

Sr. No.	Age	Cases	Percentage
01	30-35	87	58
02	36-40	36	24
03	41-45	25	16.7
04	46 and above	02	1.3
	Total	150	100

Table No 2: Sex distribution in laproscopic hydro dissection in Empyema of Gall Bladder

Sr. No	Sex	Cases	Percentage
01	Male	61	40.7
02	Female	89	59.3
	Total	150	100

Table No 3: Socio economic status distribution in laparoscopic hydro dissection in Empyema of Gall Bladder

Sr. No.	Socio economic status	Cases	Percentage
01	High	71	47.3
02	Middle	63	42
03	Low	16	10.7
	Total	150	100

Table No.4: Area distribution in laparoscopic hydro dissection in Empyema of Gall Bladder

Sr. No.	Area	Cases	Percentage
01	Urban	97	64.7
02	Rural	53	35.3
	Total	150	100

Table No.5: Diabetic/Non Diabetic distribution in laparoscopic hydro dissection in Empyema of Gall Bladder

Sr. No.	Diabetic/Non Diabetic	Cases	Percentage
01	Diabetic	93	62
02	Non Diabetic	57	38
	Total	150	100

Table No.6: Fatty/ Non Fatty Patients distribution in laparoscopic hydro dissection in Empyema of Gall Bladder

Sr. No	Fatty/ Non Fatty	Cases	Percentage
01	Fatty	119	79.3
02	Non Fatty	31	20.7
	Total	150	100

Majority of the patients were operated between 65-95 minutes. The overall rate of post operative complications was (20%) 30 cases in successfully

completed laparoscopic hydro dissection. Majority of the patients (80%) 120 cases with successful laparoscopic hydro dissection were discharged within 48-96 hours. In (10.5%) 7 patients, the stay in the hospital was extended 5-7 days.

Table No.7: Fast Food/ Simple Food distribution in laparoscopic hydro dissection in Empyema of Gall Bladder

Sr. No.	Fast Food/ Simple Food	Cases	Percentage
01	Fast Food	89	59.3
02	Simple Food	61	40.7
	Total	150	100

DISCUSSION

Laparoscopic cholecystectomy (LC) has become a preferred and acceptable choice even in the most difficult situations associated with complicated gallstone disease[18]. The earlier arguments[19] as to its safety and efficacyare being answered by a number of encouraging reports[9-17] and more and more laparoscopic surgeons are persuaded to perform LC in acute cholecystitis as suggested by Hunter[20] "to get it while its Hot". Very few reports have specifically assessed safety of LC in empyema of the gallbladder. This study presents the details of 150 laparoscopic hydro dissection performed in empyema gallbladder within 24h of the admission to asses the safety and suitability of laparoscopic hydro dissection approach in this condition. The difficulties that we encountered in dissection in the area of Calot's triangle are more or less the same as mentioned by other similar studies[14]. The nature of the study population must also be known as suggested by Gouma[21]. The study population in this report is mainly from high and middle socio-economic background, coming from urban areas of Sialkot as shown in table 4 .The ratio of disease was double in diabetic patients as compared to non diabetic patients as shown in table 5. The operation was technically difficult due to fibrosis and firm adhesions. These are the common factors producing distortion of local anatomy[22-23] clear display and identification of the anatomy of Calot's triangle before cutting or applying clips. The laparoscopic hydro dissection was preceded with extreme caution and gentle separation of the adhesion was done. Duodenum was identified and be gently pushed down to avoid injury. The use of diathermy was minimal to ensure patients safety. We decompressed the distended gallbladder before proceeding to Calot's triangle to facilitate dissection. Tseng et al[24]. have also favored this procedure to make surgery safe and easier. Another way of handling such life threatening situations is to perform subtotal cholecystectomy after removal of all the stones to ensure safety of patients life instead of continuing dissection in the frozen Calot's triangle with totally obscured anatomy. The rate of major complications is not significant in current study as to preclude the laparoscopic hydro dissection approach in this condition but there should always be a word of caution while operating on such difficult conditions. This is consistent with the findings of Hobbs et al[25] claiming that increased risk of complications with LC has stabilized. There is always a risk of common bile duct (CBD) injury if the operating surgeon is impatient and anatomy of the field is not clearly displayed before clipping and cutting. Undue use of diathermy is also a major factor in causing CBD injury and should be avoided in the area of Calot's triangle. Both did well in the postoperative period. Laparoscopic hydro dissection in empyema has shown less morbidity and no mortality in our study. The analysis of our study and literature review has shown that this procedure was associated with less intraoperative blood loss, shorter hospital stay, less wound infection and less postoperative pain.

CONCLUSION

Laparoscopic hydro dissection is a safe and acceptable option in empyema of gallbladder. There are, however, significant technical difficulties due to edema, adhesions and distorted anatomy in the area of Calot's triangle. The experience of the surgeon plays a vital role.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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