Bail out Strategies and outcomes for Difficult Laparoscopic Cholecystectomy
Experience from a Tertiary Care Hospital

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Background

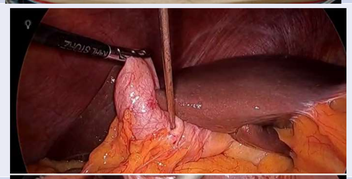
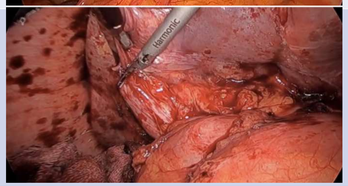
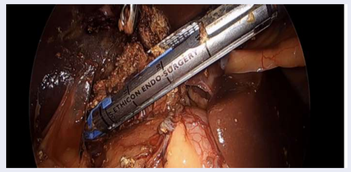
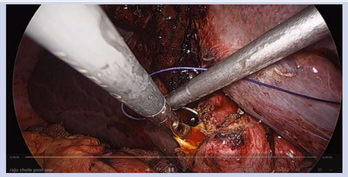
- To overcome the difficulties encountered during the laparoscopic cholecystectomy various "bail out strategies have been described.
- We categorized the difficulties encountered and the bail out strategies used for each situation.
- We describe our experience of difficult laparoscopic cholecystectomy over last two decades with various bail out strategies and short term and long term outcomes.

Materials and Methods

- Retrospective analysis of prospectively maintained database between Jan 2004 to Dec 2020
- Perioperative and follow up data of all these patients was obtained from electronic database

Results

- Lap Cholecystectomy 3726
  - Difficult 649 (17.4%)
- With various bail out strategies in Difficult Lap Chole
  - Conversion rate 4.9%
  - Bile duct injury rate 0.1%
  - Overall morbidity 8%

Difficulty category	Bail out strategy	Outcomes
❖ Difficult initial access		Palmer's point 88 Open method 6
❖ Difficulty in retraction of gall bladder /liver / bowel		Veress decompression 316 Additional port 27
❖ Difficulty due to ❖ Dense omental or visceral adhesions ❖ Cholecysto-enteric fistula		GB wall left with viscera 27 Additional ports 138
❖ Difficulty due to ❖ frozen Calot's triangle		Near total cholecystectomy 125 Conversions 24
❖ stones impacted in cystic duct ❖ Mirrizi's syndrome ❖ short wide cystic duct		Opening of GB & transfixation 56 Intracorporeal suturing 32 Hemolock clips 23 Conversions 6
❖ Small contracted (thimble/sessile) gall bladder	GB opened at fundus , stones removed, part of GB removed and sent HPE followed by stump closure	Stone removal & suture transfixation 22

Results

Demographic and clinical profile N=649

Age	18-65 years
Female	450 (69.3%)
H/o Ac Chole	217 (33.43%)
H/o Ac Panc	99 (15.25%)
Post ERCP	239 (36.82%)

Intra op and Post op Outcomes

Visceral injury	20 (3.1%)
BDI	1 (0.1%)
Conversions	32 (4.9%)
Morbidity	52 (8%)
Avg hospital stay	1.8d (1-28 d)

Significant Pre Op Factors on Univariate Regression Analysis

Parameter	CVS defined	CVS not defined (Bail out strategy)	P value
Age			
>60yrs	37	182	<0.001
<60yrs	218	212	0.546
Gender			
Male	75	124	0.002
Female	293	237	0.128
H/o Ac chole	58	159	0.03
Post ERCP	38	201	<0.001
H/o Post Panc	54	45	0.236

Significant Post op Univariate regression analysis

Parameter	Complications without bail out strategies	Complications with Bail out strategies	P value
Age			
>60yrs	13%	10%	0.7
<60yrs	13%	15%	0.82
Gender			
Male	20%	24.2%	0.62
Female	4%	11.8%	0.56
Ac Chole	17%	17.6%	0.9
Post ERCP	18.4%	17.4%	0.59
Post Panc	9%	15.5%	0.66

Conclusion

- Good outcomes in Difficult Lap Chole with "Bail out strategies"
- Low conversion and overall morbidity
- BDI can be prevented