ORIGINAL RESEARCH PAPER | General Surgery | Volume - 7 | Issue - 4 | April-2017 | ISSN - 2249-555X | IF : 4.894 | IC Value : 79.96

IS LAPAROSCOPIC CHOLECYSTECTOMY MORE CHALLENGING IN MALE PATIENTS?

KEYWORDS

Dr. Gaurav Mishra
Post Graduate Resident Department Of Surgery Teerthanker Mahaveer Medical College & Research Center , Moradabad-244001

Dr. Subhash Chandra Sharma
Assistant Professor Department of Surgery Teerthanker Mahaveer Medical College & Research Center , Moradabad-244001

Dr. Shankar Prasad Sinha
Professor and H.O.D Department Of Surgery Teerthanker Mahaveer Medical College & Research Center, Moradabad-244001

INTRODUCION

In era of minimal invasive surgery LC is a demanding procedure, owing to its superior outcome to open cholecystectomy , acknowledged as procedure of choice in modern world to deal with symptomatic cholelithiasis. In different studies[1,2,3] male gender was found to be the only statistically significant risk factor for conversion. Higher conversion rate among males was attributed to a greater incidence of gallbladder & biliary tree anatomic difficulties in males.[4] Other reason is that males pay less attention to their health problems & permit them to advance, & by the time these patients seek treatment the stage has been set for a difficult LC. Despite advancement in experience & technology, laparoscopic approach to cholecystectomy may not be possible in every patient. In these situations conversion to open procedure is required. Most common reasons requiring conversion are bleeding not controlled via laparoscopic approach, dense adhesions hindering dissection to the extent that either safety is risked or unintentional injury to surrounding structures like which may require conversion to open.

Various factors have been proposed by investigators around the globe, related to difficulty in dissection & conversion to open procedure. These include age, gender, obesity, co-morbid conditions, gall bladder wall thickness & inflammatory response[5,6]. These are the factors on which the difficulty encountered during laparoscopic procedure may be predicted.

Preoperative identification of difficult LC helps in better preparation of patient. Detailed discussion in the consent , regarding potential difficulties & possibility of conversion, longer hospital stay, morbidity & mortality [7,8-11] gender, age, investigations & ultrasonography may also help in the prediction of the difficulties [9,10] & referral of patients to more experienced surgeons and or specific centers of laparoscopic surgery [11,12]. There is also impression of male cholecystectomy being more difficult but there are no reports to date from our population to have in depth analysis of this perception.

The objective of our study was to analyze gender as predictor of conversion of laparoscopic to open cholecystectomy & also to find out other factors predicting conversion to open cholecystectomy.

OBJECTIVE

To assess the impact of male gender on outcome of LC by eliminating associated risk factors for conversion.

To achieve this aim we focused our study on these parameters:

- 1. Operating time
- 2. Decision to convert
- 3. Intra operative bleeding, post operative bile leakage.
- 4. Dense adhesions with difficult dissection at callot's triangle .
- 5. Gall bladder wall thickness
- 6. Dense fibrosis at liver bed
- 7. Musculature
- 8. Body mass index
- 9. Phobia of male Cholelithiasis

METHOD

It's a retrospective study conducted at Teerthanker Mahaveer Medical College & Research Center, Moradabad. Record of all patients who had undergone LC from Jan 2013 to Dec 2013 were retrieved & reviewed. 410 patients were included in study, out of which 316 were female & 94 were male subjected to LC on elective list.

RESULT

Out of 410 patients, 316 (77.07%) were female and 94 (22.92%) were male, mean age of female patients was 49+/- 14 and of male was 55+/- 12.(Table1)

SEX	NUMBER	MEAN AGE (years)
MALE	94(22.92%)	55
FEMALE	316(77.07%)	49

Mean duration of surgery was longer in male approx 55+/- 18min. & for females 35+/- 13min.

Difference in conversion rate between males & females undergoing LC.(Table2)

	MALE	FEMALE
CONVERSION	03(3.19%)	09(2.84%)
1.BLEEDING	01(33.33%)	03(33.33%)
2.DIFFICULTIES ENCOUNTERED IN DISSECTING THE CALLOT'STRIANGLE	02(66.66%)	06(66.66%)

So in our study there is no statistically significant difference between the 2 genders in terms of conversion.

In female group-9(2.84%) required conversion: 3 because of bleeding & 6 because of difficulties encountered in dissecting the Callot's triangle. In male group- 3(3.19%) required conversion: 1 because of bleeding & 2because of difficulties encountered in dissecting Callot's triangle.

The incidence of intra operative bleeding & post operative bile leakage in females was less than in males.(Table3)

COMPLICATION	MALE	FEMALE
INTRA OPERATIVE BLEEDING	01(1.06%)	03(0.94%)

Volume - 7 | Issue - 4 | April-2017 | ISSN - 2249-555X | IF : 4.894 | IC Value : 79.96

POST OPERATIVE BILE LEAKAGE	02(2.08%)	04(1.26%)

Moderate to severe adhesions were observed in majority of male patients making the dissection difficult specially at Callot's triangle .

In females the thickness of gall bladder was found to be =<4mm while in majority of males thickness was found to be =>6mm.

At laparoscopy more flimsy adhesions were identified in males compared to females & that to more at fundus of the gallbladder & made LC comparatively difficult in male.

The muscle mass was obviously more in males due to which LC was difficult in males.

BMI was higher in females (29.3+/- 4.5 kg/m2) than males (26.5 +/-3.5kg/m2), both genders had an equal length of post operative hospital stay .

On questioning several surgeons, they admitted the preoperative unknown phobia when they were going for male cholecystectomy.

DISCUSSION

In our study the mean time of LC was 55min. in men & 35min. in women which is comparable with the study[13] having longer mean time in men than in women (80.3 vs. 70.4 min).

In our study the overall rate of conversion was (2.92%) which is similar to a study conducted at tertiary community hospital (conversion rate was 4.9%)[14]. Another study conducted at Karachi had conversion rate of 6.5% [15].

Regarding gender difference, there are different ideas in literature; Gronroos et.al.[13], reported that women were at a higher risk for severe bile duct injuries during LC. While other authors have opposite ideas, most are claiming that gender is not a risk factor in difficulty of LC or conversion[16,17] only preoperative diagnosis correlates significantly with LC difficulty[13]. Whereas there are papers which insist on the effect of gender on the difficulty of LC [7,16,18] in view of difficulty & time consuming, and conversion to open surgery7 which is more in men than in women[19].

Conversion rate of our study is comparable with literature as in males[19,10,13,20]. In our study conversion rate in male is (3.19%) and (2.84%) in females which was in concordance with the study conducted by Hiwa Omar Ahmad et al. in Iraq.[21]while in study conducted at a community hospital it was found more in males (9.1%) as compared to females (3.5%)[14]. In a study conducted at teaching hospital, Karachi[15]; the ratio of male conversion was more again favoring our results. In a study at general teaching hospital conversion rate appeared to be significantly higher for men (20.4%) than women (9.2%) & they declared male gender as an independent predictive factor for conversion to open.[22]

There is more collagen & hydroxyl proline deposition seen in the inflammatory response exhibited by males & the decreased active estrogens within the male blood may partly contribute to the excessive inflammatory response generated[23]. Study[24] support the idea that estrogens may decrease the macrophage accumulation at the site of inflammation & resultant fibrosis may contribute to the more vigorous inflammatory response seen in males.

Others speculate that the difference in pain thresholds in both genders & anthropometric differences in body fat distribution & shielding of gall bladder by the liver from anterior abdominal wall may lead to inaccuracy in physical examination findings misleading the surgeon in estimating the severity & diagnosis in males.[25]

Obesity and BMI>= 40 have always been considered risks for conversion in LC.[26,27] In this study BMI was higher in females(29.3+/-4.5 kg/m2) than in males(26.5+/- 3.5.kg/m2).

CONCLUSION

Although the approach to gall bladder in male gender was difficult in many patients but had no impact on outcomes of LC. The duration of surgery was longer in males because of dense fibrous gall bladder & fibrosis in pericholecystic area & it lead to increase in conversion rate as compared to female.

Larger scale studies may disclose the factors for variation in operative time but still it was our view that preoperatively there is some unknown phobia among the surgeons that they are going for male cholecystectomy.

REFERENCES

1. Zhang WJ, Li JM, Wu GZ, Luo KL, Dong ZT.Risk factors affecting conversion in patients undergoing LC. Anz J Surg. 2008; 78:973–6.
2. Ballal M, David G, Willmott S, Corless DJ, Deakin M, Slavin JP. Conversion after LC in England. Surg Endosc. 2009; 23:2338–44.
3. Georgiades CP, Mavromatis TN, Kourlaba GC, Kapiris SA, Bairamides EG, Spyrou AM, et al. Is inflammation a significant predictor of bile duct injury during LC. Surg Endosc. 2008; 22:1959–64.
4. Serdar Yol, Adil Kartal, Celalettin Vatansev, Faruk Aksoy, and Hatice Toy, MD. Sex as a factor in conversion from LC to open surgery. JSLS. 2006; 10:359–363
5. Lein H-H, Huang C-S. Male gender: risk factor for severe symptomatic cholelithiasis. World journal of surgery.2002;26(5):598-601.
6. Atmaram DC, Lakshman K. Predictive factors for conversion of LC. Indian Journal of Surgery.73(6):423-6.
7. Arun Prasad, Preoperative Prediction Difficult L C, Indian J Surg (November–December 2010) 72(6):488 12.
8. Eddie Joe Reddick , Douglas Olsen, Albert Spaw, et al., safe performance of difficult laparoscopic cholecystectomies The American Journal of Surgery,Volume 161, Issue 3, March 1991, Pages 377-381.
9. Wagih Ghnnam, Jawid Malek, Emad Sheb,et al., Rate of conversion and complications of LC in a tertiary care center in Saudi Arabia, Annals of Saudi Medicine 2010 | Volume: 30., Issue: 2, Page: 145-148.
10. Kuldip Singh, Ashish Ohri, LC - Is there a need to convert? Journal of minimal acess surgery, 2005, Volume: 1, Issue: 2, Page: 59-62.
11. Abdulmohsen A Al-Mulhim, Male gender is not a risk factor for the outcome of LC: A single surgeon experience, Saudi J Gastroenterol, 2008;volume=14,Issue : 2 ,Page : 73-79.
12. Nachnani J, Supe A. Pre-operative prediction of difficult LC using clinical and ultrasonographic parameters. , Indian J Gastroenterol. 2005 Jan-Feb;24(1):16-8.
13. Serdar Yol, Adil Kartal, Celalettin Vatansev,et al.,. Sex as a Factor in Conversion From LC to Open Surgery JSLS. 2006 Jul–Sep; 10(3): 359–363.
14. Sujit Vijay Sakpal, MD, Supreet Singh Bindra, BA, and Ronald S. Chamberlain, MD, MPA. LC Conversion Rates Two Decades Later. JSLS. 2010. Oct-Dec; 14(4): 476–483.
15. Muhammad Shamim, Amjad Siraj Memon, Ashfaq Ahmed Bhutto, Mir Muhammad Dahri. Reasons of conversion of LC to open cholecystectomy in a tertiary care institution.JPMA july 2009 p.9
16. Simon E. Thesbjerg Kirstine M. Harboe, et al., Sex differences in LC , Surg Endosc (2010) 24:3068–3072
17. Sanjeev Kumar,SK Tiwary,Nikhil Agrawal , et al.,Predictive Factors for Difficult Surgery in LC for Chronic Cholecystitis, internet journal of surgery, volume,16,number 2, 2011.
18. Capizzi FD, Fogli L, Brulatti M, et al., Conversion rate in LC: evolution from 1993 and current state., J Laparoendosc Adv Surg Tech A. 2003 Apr;13(2):89-91.
19. Botaitis S, Polychronidis A, Pitiakoudis M, ea al., Does gender affect LC? , Surg Laparosc Endosc Percutan Tech. 2008 Apr;18(2):157-61.
20. Kamal I.A. Gharaibeh,; Fouad Ammari, ; Hussein Al-Heiss, et al., LC for gallstones: a comparison of outcome between acute and chronic cholecystitis, Annals of Saudi Medicine, Vol 21, Nos 5-6, 2001.
21. Hiwa Omer Ahmed et.al., Gender difference in elective LC for chronic cholecystitis, Bas J Surg, March, 18, 2012.
22. H. J. J. van der steeg, s. alexander, s. houterman, g. d. slooter, R. m. h. Roumen. Risk factors for conversion during LC – experiences from a general teaching hospital. Scandinavian Journal of Surgery 100: 169–173, 2011
23. Yol S, Kartal A, Vatansev C, Aksoy F, Toy H. Sex as a factor in conversion from LC to open surgery.JSLS: Journal of the Society of Laparoendoscopic Surgeons. 2006;10(3):359
24. Frazier-Jessen MR, Mott FJ, Witt e PL, Kovacs EJ. Estrogen suppression of connective tissue deposition in a murine model of peritoneal adhesion formation. The Journal of Immunology.1996;156(8):3036-42.
25. Russell JC, Walsh SJ, Reed-Fourquet L, Matt ie A, Lynch J. Symptomatic cholelithiasis: a different disease in men? Connecticut LC Registry. Annals of surgery. 1998;227(2):195.
26. Nachnani J, Supe A. Preoperative prediction of difficult LC using clinical and ultrasonographic parameters. Indian J Gastroenterol. 2005;24:16 –18.
27. Ibrahim S, Tay KH, Lim SH, et al. Risk factors for conversion to open surgery in patients undergoing LC. World J Surg. 2006;30:1698 –1704.