

Factors influencing patient's choice of type of surgery: Laparoscopic vs Open

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ABSTRACT

Aim: To evaluate the preference of patients presenting to a government sector hospital in Lahore regarding type of gall bladder surgery.

Methodology: A cross sectional observation study was conducted at the Department of General Surgery, Services Hospital, Lahore from 1st January 2020 to 30th June 2021. A simple questionnaire to collect and analyze the data of the patients admitted for cholecystectomy. The content of the questionnaire included socio-demographic characteristics and lists of factors for making choice regarding type of surgery by the patient. Data was entered and analyzed using EXCEL 2013. Frequencies and Percentages were calculated as descriptive statistics whereas Fisher's exact test was conducted as inferential statistics.

Results: The results of our study showed that the age ($p=0.0001$) of patient and cost ($p=0.0427$) of surgery played the most significant role in patient's decision regarding the type of surgery.

Conclusion: Age of the patient and financial constraints are important factors when patients decide about the type of surgery they want have. Despite advantages of laparoscopic surgery many patients chose open surgery due to poor financial status.

Keywords: Cholecystectomy, type of surgery, patient's choice, factors

INTRODUCTION

Gallstones are hard deposits that form in the gall bladder due to various factors. The size, shape and constitution of these stones may vary.¹ Gallstones are a common phenomenon in the modern age². But they have been troubling humans since the start of written history^{3,4}. Some geographical variations in gallstone prevalence have been seen⁵. Incidence of gallstones increases with age⁶ and women are much more likely to develop them⁷. Most of the cases are asymptomatic. Only 10% of the patients develop symptoms^{8,9}. In the western world almost 10–15% of the population is believed to suffer from the condition¹⁰. Each year 1–2% of patients develop symptoms or complications.¹¹ Studies from Pakistan also reveal a similar trend with almost 10-20% of the population showing the presence of gall stones^{12,13,14}.

Cholecystectomy is performed for the removal of the gall bladder. There are many indications for the removal of the gall bladder with gall bladder stones being one of the most common ones. Gall bladder removal may be undertaken via open or laparoscopic approach. Laparoscopic cholecystectomy is a minimally invasive surgical procedure for removal of gallbladder. It was introduced in the early 1990s and has since almost replaced the open technique¹⁵. A large number of studies have compared these two approaches^{16,17,18,19}. Although the complication rate for both the approaches are similar it has been shown that the laparoscopic approach is

associated with less operative blood loss, less post-operative pain, less post-operative infections, a shorter hospital stay and early return to routine life²⁰.

With the introduction of laparoscopic techniques in the western world, laparoscopic cholecystectomy was also introduced in Pakistan in the early 1990's. Since then it has gradually been adopted by most of the general surgeons and is now one of the most commonly performed elective procedures²¹. As the benefits of laparoscopic surgery outweigh those of open surgery the decision for surgeon and patient to make regarding type of surgery is straightforward²².

The health care system of our country and specifically Punjab may be considered to have two sectors. Government based free surgeries are offered for all but there may be a considerable waiting time. Private based surgeries whose cost may vary widely but offer early surgery with hardly any waiting times^{23,24}.

We were curious as to how the patients chose their surgeries and if the patient was to bear the cost himself would monetary issues be a factor that influenced the decision? In this regard we carried out this study to evaluate the reasons for patient's choice of surgery.

The objective of the study was to evaluate the preference of patients presenting to a government sector hospital in Lahore regarding type of gall bladder surgery.

MATERIAL AND METHODS

We carried out a cross-sectional observation study at the Department of General Surgery, Services Hospital, Lahore from 1st January 2020 to 30th June 2020. We recruited patients by Non-probability, consecutive sampling. All

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patients of either gender and of any age who had been admitted for cholecystectomy were included in the study. Patients who refused to give consent for inclusion in study were excluded from the study. Informed consent for inclusion was taken from all participants. Approval from the hospital Ethical committee was also taken before the start of the study.

We designed a simple questionnaire to collect and analyze the data of the patients. All patients were interviewed using the questionnaire. Information regarding both types of procedures was provided to the patients. Bio data of patients and their responses to the questions were recorded. All data was entered into EXCEL and analyzed. Quantitative variables like age and education level are presented as mean and standard deviation while frequency and percentages are used for gender and choice of type of surgery. Analysis of the reason for their choice was done. Post-stratification Fisher's exact test used and p value equal or less than 0.05 taken as significant.

RESULTS

A total of 200 patients were included in our study. Out of them 15% (30) were male while 85%(170) were female. The mean age of the patients was 42.46 years. 24.5% (49) patients were illiterate while the rest were literate. When stratification of variables was done to evaluate the reason of choice of surgery it was seen that the age of patient and cost of surgery played the most significant role. Older patients were more likely to opt for open surgery. Similarly, when patients were asked regarding their choice of surgery if they had to pay themselves for the surgeries a significant portion opted for open surgery. Results are summarized in Table 1.

Table 1: Summary of results

Age of patients			
42.46 years			
Gender distribution			
Male	30	15%	
Female	170	85%	
Education			
Illiterate	49	24.5%	
Literate	151	75.5%	
Stratification of decision regarding surgery			
	Free(Govt)	Self	Fisher's exact test
Laparooscopy	164	79	The two-tailed P value equals 0.0427
Open	36	121	
	Female	Male	Fisher's exact test
Laparooscopy	151	21	The two-tailed P value equals 0.2820
Open	29	7	
	Illiterate	Literate	Fisher's exact test
Laparooscopy	37	127	The two-tailed P value equals 0.2001
Open	12	24	
	< 40 years	>40 years	Fisher's exact test
Laparooscopy	96	68	The two-tailed P value is less than 0.0001
Open	7	29	

DISCUSSION

A total of 200 patients who were admitted with gall bladder stones were interviewed by us. A majority of them were women (85%). This is in line with the fact that gallstones are especially common in women. Furthermore, the

average age of our patient was 42.26 years. The same has been demonstrated all over the world that the gall bladder stones are more common after middle age.^{10,25}

When asked for their choice of surgery the majority of patients wished to get laparoscopic surgery (82%). This is largely due the fact that the advantages of laparoscopic surgery are not just documented in the various academic studies but also known to the general population as well. Similar findings were also noted by other researchers.^{26,27,28}

When we stratified the data for variables effecting the decision of the patients regarding the type of surgery they wanted it was seen that there was no significant relationship between gender or education of the patient and decision regarding surgery. Age of the patient was however significantly co-related to the decision. Older patients(>40years) were much more likely to opt for open surgery as compared to the younger patients. (<40 years). Age of the patient has been shown to effect the decision making of the physicians^{29,30} and it has also been reported to effect the patient's own decision making.^{31,32,33}

Similarly, the cost of surgery also played a significant impact on the type of surgery opted by the patient. Although the majority of patients wished to have laparoscopic when offered with free surgery the decision changed dramatically when they were asked to consider their options if they had to pay for their own surgery. Despite the many advantages of laparoscopic surgery due to the involved disposables and gadgetry the cost of laparoscopic surgery as compared to open is higher. This difference was enough to dissuade the majority of the patients from laparoscopic surgery. Similar tradeoffs have also been reported in studies conducted in other parts of the world when patients had to decide between financial resources and healthcare^{34,35,36}

Our study has a number of limitation. It is a single center study. It has a small study population with the majority of patients belonging to lower and lower- middle class. Perhaps if patients belonging to upper class were also to be included the results might be different. Furthermore, we questioned our participants only regarding an elective procedure, perhaps similar study about emergency procedure may yield different results.

CONCLUSION

On the basis of our results, we conclude that the age of the patient and the financial constraints are important factors when patients decide about the type of surgery they want have. Despite advantages of laparoscopic surgery many patients chose open surgery due to poor financial status.

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