

An Audit of Laparoscopic Cholecystectomy in Renal Transplant Patients

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Abstract

Background: Cholelithiasis, in patients with renal transplantation, carries high risk of complications. We, at our institute, perform prophylactic cholecystectomy for asymptomatic gallstones in patients with renal transplantation. **Aim:** To present our experience of laparoscopic cholecystectomy in patients with kidney transplantation. **Subjects and Methods:** Data, in the form of, demographics, medications used, indication of transplantation, manifestation of gallstones, operative findings, duration of hospitalization, and post-operative complications were obtained and results were analyzed. briefly summarize details of statistics including the soft ware used. **Results:** Twenty patients have undergone laparoscopic cholecystectomy. All patients were admitted on the day of surgery. Immunosuppression regimen was not modified during hospitalization. Indications of cholecystectomy were biliary colic (8/20 patients, 40%), acute cholecystitis (8/20 patients, 40%), asymptomatic gallstones (3/20 patients, 15%), and obstructive jaundice (1/20 patients, 5%). Laparoscopic cholecystectomy was uneventful in all cases. Post-operative complications were nausea and vomiting in two patients and port site infection in one patient. **Conclusion:** Laparoscopic cholecystectomy, when performed in renal transplant patients, is a safe procedure.

Keywords: Gallstones, Laparoscopic cholecystectomy, Renal transplantation

Introduction

We, at our institute, advocate prophylactic laparoscopic cholecystectomy when gallstones are detected during ultrasonographic examination for renal transplant waiting patients. Such an approach is justified in view of high incidence of complications including renal allograft loss when cholecystectomy is performed in transplanted patients with calculus cholecystitis. Still, many kidney transplant patients are identified with the multiple mobile gall stones. Main reason behind this is that there is persistently increased risk of gallstone formation in transplant patients because of reasons such as immunosuppressive drugs, obesity, hyperlipidemia, and diabetes mellitus.^[1] Laparoscopic

cholecystectomy, when performed in this group of patients, has been reported to have similar morbidity and mortality as in non-transplant patients.^[1] Here, we describe our experience of laparoscopic cholecystectomy in renal transplant patients.

Subjects and Methods

The records of all 350 patients who had undergone kidney transplantation from January, 2010 to December, 2011 were reviewed. The study protocol of all transplanted patients who underwent laparoscopic cholecystectomy for cholelithiasis was analyzed. Following data were collected and analyzed: Demographics, medications including immunosuppression, indication of transplant, manifestations of gallstone disease, duration of hospitalization at the time of cholecystectomy, operative findings, and post-operative complications. Constant communication was maintained between transplant team and surgeon before, during and after hospital admission for cholecystectomy. This study was approved by ethics committee of our institution. Non-categorical data are expressed as mean (standard deviation) and categorical data are expressed as proportions. Statistical

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Package for Social studies (SPSS 10.1) is used for purpose of analysis.

Results

A total twenty kidney allograft recipients underwent laparoscopic cholecystectomy after renal transplantation. Among these, 60% were male and 40% were female with a mean (sd) age of 47.33 (10.04) years (range 30-65). Indications of kidney transplantation were: Hypertension (9/20, 45%), diabetes mellitus (6/20, 30%), glomerulonephritis (4/20, 20%), and polycystic kidney disease (1/20, 5%). All patients were receiving cyclosporine, azathioprine, and steroids as part of immunosuppression regimen. All patients were having normal renal function with mean (sd) serum creatinine of 1.38 (0.33) mg/dl (range 0.8-1.8) at the time of cholecystectomy. Clinical presentation of gall stone disease was biliary colic (8/20, 40%), acute cholecystitis (8/20, 40%) and asymptomatic multiple gallstones (3/20, 15%). One patient (5%) was having jaundice because of presence of stone in the common bile duct. Presence of gallstones was confirmed by ultrasonography. Patient with jaundice had undergone endoscopic removal of common bile duct stone prior to cholecystectomy. A single dose antibiotic (ceftriaxone 1 g) was given at the time of induction. Patients were admitted on the day of surgery. Laparoscopic cholecystectomy was performed under general anesthesia using the standard four trocar techniques. Surgery was uneventful in all cases. Patients were allowed to take liquid diet same evening and switched over to a normal diet gradually. Immunosuppression regimen was not changed during the period of hospitalization. The mean (sd) interval time between transplantation and cholecystectomy was 2.48 (0.87) years (range 1.5 -4). Mean (sd) operative time was 60 (16.38) min (range 45-90). Drain was not kept in any of the 20 patients. Conversion to open cholecystectomy was not required. Mean (sd) hospital stay was 3.35 (1.46) days (range 2-8). Two patients experienced nausea and vomiting in immediate post-operative period. One patient developed an infection at epigastric port from which gallbladder was removed; however, he was successfully treated with oral antibiotic treatment and daily dressing. No other significant post-operative complications were noticed during the follow-up period of 3 months.

Discussion

Patients with kidney transplantation present unique problems in operative and post-operative management to maintain satisfactory function of the transplanted organ and to avoid morbidity associated with immunosuppression drugs. Although the true prevalence of gallstones in the transplant population is not known, this rate is somewhat higher than the normal population.^[2] Although the exact mechanism of increased incidence of gallstone formation after transplantation is not known, the main risk factor is considered to be use of immunosuppressive drugs mainly cyclosporine. The most

prominent theory is that cyclosporine induces cholestasis leading to gallstone formation. However, others have suggested that increased excretion of cyclosporine in to bile making it more lithogenic.

In the general population, presence of asymptomatic gallstones is not considered as an indication of cholecystectomy. Immunosuppressed transplant recipients may be an exception because asymptomatic gallstones can cause considerable morbidity in this group of patients. In addition, most common presentation of cholelithiasis in transplant recipients is cholecystitis. Further, immunosuppression may mask signs of inflammation and cause delay in diagnosis of cholecystitis.^[3] Complications of gallstones are associated with the high morbidity and mortality in solid organ transplant recipients. Concomitant diseases like diabetes mellitus may affect complication rate.^[4] Morbidity of laparoscopic cholecystectomy when used in uncomplicated cholecystitis is low. However, laparoscopic cholecystectomy is extremely difficult to perform in patients with complicated cholecystitis.^[5] These are the reasons why most transplant centers recommend laparoscopic cholecystectomy when diagnosis of gallstones is established. Laparoscopic cholecystectomy was first performed in kidney transplant patient in 1991.^[6]

It is still controversial to subject such patients to prophylactic cholecystectomy. Review of previous literature reveals reports of laparoscopic cholecystectomy being performed in both before and after kidney transplantation.^[7,8] There is one report of two cases of laparoscopic cholecystectomy performed simultaneously with kidney transplantation.^[9] However, some authors maintain that routine prophylactic cholecystectomy is not justified because only a small number of patients with asymptomatic gallstones develop symptoms after transplantation.^[10,11]

Laparoscopic cholecystectomy is now the gold standard treatment for gallbladder disease. Its' minimally invasive nature is more appropriate than the conventional method for transplant patients, because of its low morbidity rate.^[12] It offers significant advantages over conventional cholecystectomy with regard to post-operative morbidity and convalescence, shorter period of hospital stay and early resumption to oral immunosuppression than after conventional cholecystectomy. In our study, all patients were having stable graft function at the time of cholecystectomy. Surgery was uneventful in all cases. One patient required longer stay of 8 days because of port site infection. Two patients with vomiting were kept admitted for observation and to supervise their renal allograft function.

A policy of pre-transplantation screening using an ultrasound of gallbladder with prophylactic cholecystectomy is being performed at our institute for all renal transplant candidates. Still, it is important to recognize that, in spite of careful pre transplantation screening, there is persistently increased risk of gall stone formation in patients receiving cyclosporine.

Therefore, all renal transplant recipients should be screened for the presence of gallstones and laparoscopic cholecystectomy should be performed for symptomatic gall stone disease.

Conclusion

Laparoscopic cholecystectomy, when performed in the renal transplant patients, is a safe procedure.

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