

Laparoscopic cholecystectomy in Ile-Ife, Nigeria

AO Adisa, OO Lawal, OA Arowolo and DO Akinola

Department of Surgery, Obafemi Awolowo University,
Ile-Ife, Nigeria.

Summary

Background: Laparoscopic cholecystectomy is not yet routinely performed in most public tertiary hospitals in Nigeria.

Objectives: To assess the feasibility and early outcome of laparoscopic cholecystectomy in Ile-Ife, Nigeria.

Method: Consecutive patients who were selected for the procedure from June 2009 through December 2010 at the Ife State Hospital of the Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife were prospectively studied.

Results: Eighteen female (75%) and six male patients had laparoscopic cholecystectomy within the study period. They were aged 19-83 years with a mean age of 33.4 years. Six (25%) patients had acute calculous cholecystitis while the rest presented with chronic calculous cholecystitis. Their Body Mass Indices ranged from 21 to 32 kg/m². Operation time ranged from 65 to 105 minutes. One procedure (4%) was converted to open due to bleeding from the gallbladder bed. Another patient who had a minor common bile duct injury presented with generalized dull abdominal pain on the sixth postoperative day. She had open repair of the injury over a T-tube. Three patients (12.5%) were discharged on the first postoperative day while 15 (62.5%) others were discharged on the second postoperative day. No mortality was recorded.

Conclusion: Laparoscopic cholecystectomy is feasible in our setting with outcome comparable to previous pioneering experiences in other African countries centre in spite of resource limitations.

Keywords: *Laparoscopic surgery, cholecystectomy, Nigeria.*

Résumé

La cholécystectomie laparoscopique n'est pas faite de façon routinière dans la plupart des centres hospitaliers tertiaires publiques au Nigeria. Les patients étaient sélectionnés de façon consécutive dans cette procédure de Juin 2009 à Décembre 2010 au Complexe du centre universitaire d'Obafemi Awolowo, Ile-Ife pour évaluer la faisabilité et les

résultats anticipés de routine cholécystectomie laparoscopique dans notre milieu. Dix-huit femmes (75%) et six patients mâles étaient la cholécystectomie laparoscopique entre la période de l'étude. Ils étaient âgés de 19-83 ans avec une moyenne d'âge de 33.4 ans. Six (25%) patients avaient une cholécystite aiguë tandis que le reste souffrait de la cholécystite chronique. Les indexes de masse corporelle variaient de 21 à 32 kg/m². Le temps de l'opération variait de 65 à 105 minutes. Une procédure (4%) était convertie au ouvrir du au saignement de la vessie biliaire. Un autre patient qui avait une blessure sur la voie biliaire communément mineur se présentait ayant des douleurs abdominales après le 6ième jour de l'opération. Elle avait ouvert la réparation sur un tube en T. Trois patients (12.5%) étaient déchargés après une journée lorsque les 15 (62.5%) autres cas étaient ont été déchargé au deuxième jour. Aucun cas de mortalité n'était enregistré. Nous avons observé que les résultats dans notre centre était comparable à d'autres expériences antérieures dans certains pays africain et concluait que la routine cholécystectomie laparoscopique était faisable dans notre centre bien que avec des ressources limitées.

Introduction

Laparoscopic cholecystectomy [LC], is the popular treatment of choice for symptomatic cholelithiasis in many centres in developed and developing countries [1-4]. Since its introduction and popularization over the past two decades, LC has been shown to be associated with many advantages peculiar to the laparoscopic approach including less postoperative pain, fewer incidences of postoperative wound infection and shorter duration of hospital stay [2-4]. The initial hesitation towards the procedure due to high incidence of bile duct injuries reduced just as the injuries did with growing experiences across the world [3].

Whereas LC is increasingly being advocated to be performed as a day case procedure and other forms of cholecystectomy such as mini-incision, single trocar, robotic, and natural orifice transluminal procedures are evolving elsewhere [5-10], open cholecystectomy remains the common surgical treatment for cholelithiasis in most hospitals in

Nigeria. The relatively low incidence of gallbladder disease in Nigeria and the high cost of setting up laparoscopy are perhaps some of the reasons why LC is infrequently employed in many public hospitals in the country.

We present an initial experience with a consistent deployment of laparoscopic cholecystectomy at the Obafemi Awolowo University Teaching Hospitals Complex [OAUTHC], Ile-Ife, Nigeria in the treatment of gallstone diseases.

Methodology

Patients

Patients with symptomatic gallstone disease seen over a nineteen month period of June 2009 to December 2010 at the Ife Hospital Unit of OAUTHC were the subjects of this study. All the patients had ultrasonographic confirmation of a clinical diagnosis of acute or chronic calculous cholecystitis and other routine preoperative investigations were carried out. One patient who had preoperative imaging report of dilated common bile duct was counselled for open cholecystectomy and common bile duct exploration and was excluded from the study. Three patients declined surgery after adequate counselling and were subsequently lost to follow-up.

Procedure

General anaesthesia with orotracheal intubation was routinely deployed and all patients had nasogastric intubation. Carbon dioxide was used for insufflation and pneumoperitoneum was achieved following which a four trocar access was employed. Adhesions were released when encountered and thereafter dissection was carried out in the Calot's triangle. Generally, the isolated cystic ducts and cystic arteries were clipped after a critical field of view was achieved. In one patient however, due to the severe inflammation of the gallbladder up to the cystic duct, an extracorporeal suture ligation with vicryl suture was used. To facilitate extraction, gallbladder was usually aspirated first, dragged into a 10mm trocar and then removed through the epigastric port. On two occasions when unusually large gallstones were encountered, retrieval was achieved by widening the umbilical ports. No drain was usually left in the gallbladder bed. All patients were operated by the same surgeon with different assistants.

Results

Twenty four patients including 18 females and 6 male patients aged 19-83 years with a mean age of 33years and Body Mass Index ranging from 21 to 32kg/m²

had LC during the study period. Three had acute calculous cholecystitis and were operated on within a week of presentation while the remaining presented with chronic calculous diseases. Three were known sickle cell anaemia patients, one had renal transplantation 6 months earlier and an 83year old lady developed acute cholecystitis while on admission for congestive cardiac failure.

Operation time ranged from 45 to 105minutes with a mean of 63.2(±18.2)minutes. A patient each had a very short cystic duct and an accessory bile duct connecting to the Hartman's pouch. In two instances, a rent was inadvertently made in the gallbladder wall during its mobilization which were then closed with clips after aspirating the contents. Two cases of gallbladder empyema, one of which had perforated, were encountered intraoperatively. In one case where the gallbladder was densely adherent to the liver, excessive bleeding from the gallbladder bed was encountered with limitation of vision and the procedure was then converted to open. In another patient with empyema, a subhepatic drain left after surgery was noticed to have collected about 200mls of blood at 6 hours after surgery. She had laparotomy and open coagulation of an aberrant artery on the gallbladder bed. Three patients (12.5%) were discharged on the first postoperative day, 15(62.5%) were discharged on the second postoperative day while the remaining 6(25%) stayed for 3 days after operation. A female patient presented with generalised dull abdominal pain on the sixth postoperative day and abdominal ultrasound confirmed intra-abdominal collection. She had open exploration at which a minor common bile duct diathermy injury found was repaired over a T-tube. She did well subsequently. No mortality was recorded.

Discussion

Laparoscopic surgery is gradually being introduced into general surgical practice in Nigeria. The high cost of setting up and maintaining a minimally invasive surgery unit has largely limited its availability in many Nigerian hospitals. In a developing economy where basic infrastructures such as electricity supply is not guaranteed in many public hospitals, many surgeons have continued to question the need for the routine use of such a technologically driven procedure [11]. In recent years however, there has been a new enthusiasm to introduce laparoscopic surgery into our surgical practice with many hospitals inviting foreign surgeons to perform and teach the procedures. The need for improvisations and local adaptations of equipments have however hindered a smooth take-

off in some centres. We faced similar challenges in the attempt to set this up in our hospital [12].

Many centres in Nigeria have reported a relatively low incidence of gallstones with few open cholecystectomies being performed annually in many tertiary hospitals [13,14]. Consistent therapeutic laparoscopic surgery is just evolving in our centre and many patients are not yet informed about it. These, coupled with the fact that a few cases are still performed in the open method in our centre perhaps account for the limited number of patients in this series.

Our learning curve in this preliminary experience is captured in the duration of operation which reduced from 105 minutes in the first patient to between 45 minutes and one hour from the fifth patient onward. The initial length of time relates to the need for local adaptations at some points in the operation, with reduction in time as we got used to our set-up. The need to train and re-train the surgeon's assistants and the nursing staff equally lengthened the initial procedures. The only bile duct injury we recorded occurred in the fourth patient while the only conversion to open procedure was the sixth operation performed. Previous reports of early experiences with LC had highlighted similar challenges along the learning curve [15,16].

Nowadays, LC is performed as a day case procedure for selected patients in some developed centres [7,8]. In our setting, we decided to observe the patients until the first or second postoperative day due to the challenges of early discharge and patients' access to the hospital in our setting. This also afforded us the opportunity to reassure the patients and improve the acceptance of the procedure among the hospital workers. We however had difficulty recognising the bile duct injury which occurred in the third patient as she presented with low abdominal pain and nausea on the sixth postoperative day. A tiny common bile duct puncture wound which we suspected to be diathermy injury was noticed at exploratory laparotomy.

We successfully performed LC on a number of patients with comorbidities. Three known Haemoglobin SS patients were referred from Haematology with recurrent acute calculous cholecystitis. None of them had any form of crisis in the perioperative period. We also operated upon an 83-year old woman with recurrent congestive cardiac failure and another 50-year old man who is on immunosuppressive drugs following renal transplantation six months earlier. No complication was recorded in any of these patients.

We believe that the outcome of this preliminary experience compares favourably to that reported in

similar initial experiences in other African countries [15-17]. We therefore conclude that consistent laparoscopic cholecystectomy is feasible in our setting and we advocate that the procedure should be further embraced and performed routinely in Nigerian hospitals.

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