



## ORIGINAL ARTICLE

# Complications associated with laparoscopic adrenalectomy: Description and standardized assessment<sup>☆</sup>



O.A. Castillo<sup>a,b,\*</sup>, A. Rodríguez-Carlin<sup>a</sup>, J. López-Vallejo<sup>a</sup>, V. Borgna<sup>b</sup>

<sup>a</sup> Departamento de Urología, Clínica INDISA, Santiago, Chile

<sup>b</sup> Facultad de Medicina, Universidad Andrés Bello, Santiago, Chile

Received 26 October 2013; accepted 1 December 2013

Available online 30 April 2014

## KEYWORDS

Adrenalectomy;  
Laparoscopic;  
Complications

## Abstract

**Objective:** Laparoscopic adrenalectomy (LA) is the procedure of choice for surgical management of the adrenal masses. Our objective is to show a standardized assessment of perioperative complications in one LA series.

**Materials and methods:** 322 LA were performed consecutively between June of 1993 and September of 2012 in patients diagnosed with suprarenal tumor. In order to evaluate perioperative complications, data were collected prospectively and analyzed retrospectively. Intraoperative complications were defined using Satava classification and Clavien–Dindo classification of postoperative complications.

**Results:** Twenty five LA showed perioperative complications (7.3%); 11 (3.2%) were intraoperative complications, most of them vascular diaphragmatic lesions (Satava Grade 2); and 14 (4.1%) were postoperative complications. Six patients showed complications requiring surgery (Clavien IIIa/IIIb) and/or support in Intensive Care Unit (Clavien IV). Conversion to open surgery was necessary in one case (0.3%). Despite all appropriate preoperative endocrine measures were taken, an uncontrolled hypertensive crisis and cardio-respiratory arrest recovered were developed during surgery in one patient carrier of pheochromocytoma who died from massive cerebral infarction at 5 days (Clavien V).

**Conclusions:** Standardized criteria of surgical complications are necessary. Standardization is possible by combined application of two tools. We believe that this evaluation concept of the surgery morbidity must be used systematically in order to achieve a new standard refined, concise and comparative for reports of adverse perioperative events.

© 2013 AEU. Published by Elsevier España, S.L. All rights reserved.

<sup>☆</sup> Please cite this article as: Castillo O, Rodríguez-Carlin A, López-Vallejo J, Borgna V. Descripción y evaluación estandarizada de complicaciones asociadas a adrenalectomía laparoscópica. Actas Urol Esp. 2014;38:445–450.

\* Corresponding author.

E-mail address: [octavio.castillo@indisa.cl](mailto:octavio.castillo@indisa.cl) (O.A. Castillo).

**PALABRAS CLAVE**

Adrenalectomía;  
Laparoscopia;  
Complicaciones

## Descripción y evaluación estandarizada de complicaciones asociadas a adrenalectomía laparoscópica

**Resumen**

**Objetivo:** La adrenalectomía laparoscópica (AL) es el procedimiento de elección para el manejo quirúrgico de las masas adrenales. Nuestro objetivo es presentar una evaluación estandarizada de las complicaciones perioperatorias en una serie de AL.

**Material y métodos:** Entre los meses de junio de 1993 a septiembre de 2012 se realizaron 344 AL en pacientes con diagnóstico de tumor suprarrenal, de forma consecutiva. Los datos fueron recolectados de forma prospectiva y analizados retrospectivamente para evaluar las complicaciones perioperatorias. Las complicaciones intraoperatorias se definieron utilizando la clasificación de Satava y las complicaciones postoperatorias según la clasificación de Clavien-Dindo.

**Resultados:** Veinticinco AL presentaron complicaciones perioperatorias (7,3%), 11 fueron intraoperatorias (3,2%), siendo en su mayoría lesiones vasculares y del diafragma (Satava grado 2) y 14 postoperatorias (4,1%). Seis pacientes presentaron complicaciones que precisaron intervención quirúrgica (Clavien IIIa/IIIb) y/o soporte en la unidad de cuidados intensivos (Clavien IV). Hubo una conversión a cirugía abierta (0,3%). A pesar de que se tomaron todas las medidas endocrinológicas preoperatorias adecuadas, un paciente portador de un feocromocitoma desarrolló en el intraoperatorio una crisis hipertensiva incontrolable y paro cardiorrespiratorio recuperado, falleciendo a los 5 días por un infarto cerebral masivo (Clavien V).

**Conclusiones:** Las complicaciones quirúrgicas necesitan de un criterio común de estandarización mediante la aplicación combinada de 2 herramientas. Creemos que este concepto de evaluación de la morbilidad de la cirugía debe ser aplicado de forma sistemática, y de esta manera permitir a los cirujanos lograr un nuevo estándar de informes de eventos adversos perioperatorios refinado, conciso y comparativo.

© 2013 AEU. Publicado por Elsevier España, S.L. Todos los derechos reservados.

## Introduction

Since its description in 1992, laparoscopic adrenalectomy (LA) has increased its indication as the procedure of choice for adrenal tumors.<sup>1-3</sup> In fact, the criteria for its application have been extended to include pheochromocytomas, big masses, and even oncologic surgery.<sup>4-6</sup>

Tumors of the adrenal gland are rare, so there are few publications with a sufficient number of patients, and in many centers the LA is still an exceptional surgical procedure. The overall complication rate of the reported LA is approximately 10%.<sup>7</sup> Despite the acceptance of the need for a standardized classification system for surgical complications, we have not yet been able to reach a consensus on this issue.

In 1992, Clavien et al. published a classification system for surgical complications,<sup>8</sup> which provides a new approach for their categorization. This system was developed with the aim of achieving uniformity of information, providing a means for better comparison among the different medical centers and different surgical techniques. The scoring system was modified in 2004 to include the complications associated with increased risk of death and permanent disability.<sup>9</sup> However, this classification system does not include intraoperative complications. In 2005 Satava suggested a simple classification to evaluate surgical errors during laparoscopic surgery.<sup>10</sup>

This study seeks to characterize and describe perioperative complications in a series of 344 LAs, conducted in the same urological center over a period of 19 years.

We rely on the combined application of two tools: the Satava classification<sup>10</sup> of intraoperative complications, along with the modified Clavien classification<sup>9</sup> of postoperative complications.

## Materials and methods

Between June 1993 and September 2012 344 LAs were performed in patients with a diagnosis of adrenal tumor, consecutively. The data were collected prospectively and analyzed retrospectively to evaluate perioperative complications.

In all cases, we used computed tomography (CT) and/or magnetic resonance imaging (MRI) as the study of choice for the diagnosis, location, and characterization of adrenal masses. Endocrinological evaluation was conducted in all patients that included basal aldosterone, serum cortisol, free cortisol, renin and potassium levels, and catecholamines and metanephrines in urine over 24 h to identify functioning masses of the adrenal cortex and medulla. In the case of functioning masses, specific preoperative management or postoperative hormonal replacement was done when necessary. Our surgical technique has been described previously, using the transperitoneal pathway in all cases.<sup>2</sup>

Demographics, intraoperative and postoperative variables were analyzed, including operative time, tumor side and size, estimated blood loss (EBL), complications, hospital stay, and histological type of the tumor.

Perioperative complications were classified into intraoperative and postoperative. Intraoperative complications

Download English Version:

<https://daneshyari.com/en/article/3845458>

Download Persian Version:

<https://daneshyari.com/article/3845458>

[Daneshyari.com](https://daneshyari.com)