

# Laparoscopic Adrenalectomy in an Achondroplastic Obese Patient

Neşet KÖKSAL, Ediz ALTINLI, Aziz SÜMER

Haydarpaşa Numune Training & Research Hospital  
Department of General Surgery, 2nd General Surgery Unit, Istanbul.

## Abstract

In this article, we report a unique obese achondroplastic Cushing's syndrome case successfully treated by laparoscopic approach, which has not been published in the literature.

A 40-year-old female dwarf patient having Cushing's syndrome with BMI:33 had treated by laparoscopic transperitoneal adrenalectomy by inferio-lateral insertion of trochars than the conventional laparoscopic approach (Fig.1).

The post-operative period was uneventful and the patient was discharged at the fourth post-operative day. The patient does not have any complaint after a follow up of 16 months and her BMI was decreased to 25, 9 (Fig.2).

The case is the first reported laparoscopic treatment in obese and achondroplastic patient for Cushing's syndrome. Laparoscopic approach can be recommended and also being performed safely in dwarf patients. Their small body habitus and additional structural deformities are not contraindications for laparoscopic interventions.

**Key Words:** Cushing's syndrome, achondroplasia, laparoscopic adrenalectomy.

---

### Yazışma Adresi:

Doç. Dr. Ediz ALTINLI  
Fahrettin Kerim Gökay Cad.  
Emin Sağlam Apt No:5 Göztepe/İstanbul  
E-mail: dredizaltinli@yahoo.co.uk  
Fax:0216 3850427

---

## Introduction

The laparoscopic approach to the adrenal gland was first reported by Gagner in 1992 (1). Since that time due to advantages of minimally invasive surgery such as lower complication rates, less blood loss, less painful incisions, earlier return to activity and diet, shorter hospital stays and lower overall costs, laparoscopic adrenalectomy has become the standard method for removal of most adrenal masses (2,3).

Dwarfism and rhizomelic shortening of upper and lower limbs are characteristics of achondroplasia. Neurologic and orthopedic problems are common in achondroplastic patients (4). In our case a mild obesity also accompanies the other problems.

In this article, we report a unique case, which has not been published in the literature, an obese and achondroplastic patient having Cushing's syndrome which is successfully treated by laparoscopic approach.

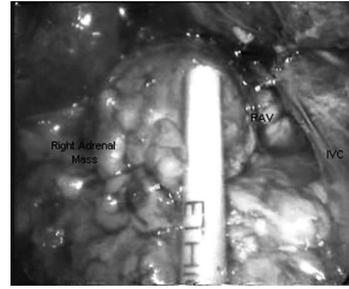
## Case

A 40-year-old female was admitted to our clinic with weight gaining. Height of the patient was 133 centimeter (cm) and weight was



**Figure 1**

Post-operative lateral view of the patient



**Figure 2**

Intra-operative laparoscopic view of adrenal mass, right adrenal vein (RAV) and inferior vena cava (IVC)

59 kilogram (kg), and the BMI was 33. Buffalo hump, moon face, truncal obesity, abdominal striae, achondroplastic appearance and hypertension were detected on physical examination. According to these signs, investigation was done for Cushing syndrome. Blood cortisol level was high. High dexamethazone suppression test was negative and blood ACTH level was normal. Abdominal CT revealed that three cm. solid mass at right adrenal. Following preoperative assessments, laparoscopic adrenalectomy was planned.

Laparoscopic transperitoneal adrenalectomy was performed by insertion of the trocars two-three cm inferio-lateral to the standard conventional sites. The post-operative period was uneventful and the patient was discharged at the fourth post-operative day. The patient does not have any complaint after a follow up of 16 months and her BMI was decreased to 25, 9.

## Discussion

There are multiple adult series for laparoscopic adrenalectomy, but few reports have described the outcome of this technique in pediatric patients. This delay is due to small

patient body habitus and the nature of most common adrenal pathology (5).

Some authors suggest the retroperitoneal approach but others claim that there were no difference between retroperitoneal and transperitoneal approach (6). The choice of the transperitoneal approach in our case is based on several logical reasons. Even in obese patients it is easier to locate adrenal vein, which is the first and most important step of the operation by transperitoneal technique and besides it provides wide working space especially in the event of bleeding.

Miller et al (7). reported that laparoscopic adrenalectomy could be performed safely and effectively with a short hospital stay and minimal blood loss in pediatric patients, but there is no case which explains laparoscopic adrenalectomy in an achondroplastic patient in the literature.

Dwarfism is defined as failure to achieve a height of 148 cm by adulthood. Commonest form of this rare condition is achondroplastic dwarfism. The usual appearance includes large head, saddle nose, short limbs and normally proportional trunk, often associated with marked kyphoscoliosis and lumbar lordosis (8). Limited neck extension has been reported as a cause difficult intubation in two cases, but not all authors encountered similar difficulties such as in our case.

However achondroplastic patients have normally proportional trunk, they have relatively small operation field for laparoscopic adrenalectomy compared to normal adults. Also additional lumbar lordosis and kyphoscoliosis may results in difficult positioning for transperitoneal lateral approach such as in our case (8).

In conclusion laparoscopic adrenalectomy can be recommended and also performed sa-

fely in achondroplastic patients. Their small body habitus and additional structural deformities are not contraindications for laparoscopic interventions.

## References

1. Gagner M, Lacroix A, Bolte E. Laparoscopic adrenalectomy in Cushing syndrome and Pheochromocytoma. *N Engl J Med* 1992; 327:1033.
2. Guazzoni G, Cestari A, Montorsi F, Lanzi R, Nava L, Centemero A, Rigatti P. Eight-year experience with transperitoneal laparoscopic adrenal surgery. *J Urol* 2001; 166:820-4.
3. Zeh HJ, Udelsman R. One hundred laparoscopic adrenalectomies: a single surgeon's experience. *Ann Surg Oncol* 2003;10:1012-7.
4. Park HW, Kim HS, Hahn SB, Yang KH, Choi CH, Park JO, Jung SH. Correction of lumbosacral hyperlordosis in achondroplasia. *Clin Orthop* 2003; 414:242-9.
5. Castilho LN, Castillo OA, Denes FT, Mitre AI, Arap S. Laparoscopic adrenal surgery in children. *J Urol* 2002;168:221-4.
6. Naya Y, Nagata M, Ichikawa T, Amakasu M, Omura M, Nishikawa T, Yamaguchi K, Ito H. Laparoscopic adrenalectomy: comparison of transperitoneal and retroperitoneal approaches. *BJU Int* 2002 ;90:199-204.
7. Miller KA, Albanese C, Harrison M, Farmer D, Ostlie DJ, Gittes G, Holcomb GW. Experience with laparoscopic adrenalectomy in pediatric patients. *J Pediatr Surg* 2002; 37:979-82.
8. Morrow MJ, Black IH. Epidural anaesthesia for caesarean section in an achondroplastic dwarf. *Br J Anaesth* 1998; 81:619-21.