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Case Report

Laparoscopic resolution of Wünderlich syndrome as a primary treatment

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Abstract

Background: Spontaneous Retroperitoneal Hemorrhage, named Wünderlich Syndrome (WS) is usually managed by emergency surgeons with a conventional laparotomy. The aim is to report a patient with WS successfully treated by a laparoscopic approach avoiding open surgery.

Methods: A 50-year-old female was diagnosed with WS hemodynamic instability and flank pain. After a normal CT scan that discarded visceral injuries and stabilized, the patient underwent a laparoscopic renal exploration.

Results: Laparoscopic approach was as standard transperitoneal renal access. Fortunately, the hematoma was within Gerota fascia meaning a non-complex surgery. Due to the high R.E.N.A.L. score, it was necessary to complete a radical nephrectomy. Surgical time was 120 minutes without perioperative complications and the renal unit was retrieved using a Pfannenstiel incision. Estimate blood loss was not quantified. Finally, the hospital stay was 24 hrs.

Conclusion: Laparoscopic approach could be performed in selected patients with WS especially when are hemodynamic stabilized with no visceral injury associated. Immediately treatment could facilitate the procedure because it avoids adhesences or fibrosis due to hematoma. Experience in the laparoscopic approach is necessary.

Introduction

Carl Reinhold August Wünderlich described the first case of Spontaneous Retroperitoneal Bleeding in 1856 naming it "renal capsule apoplexy" [1] for the first time, adopting prosperously the definitive denomination of Wünderlich Syndrome (WS) by Coenen in 1910 [2].

This entity is completely rare and almost self-limited in every case; however, about 20% need medical intervention due to hemodynamic decompensation and eventually death in some cases [3,4].

The most frequent etiology is renal tumors such as angiomyolipoma as the first cause in almost 30% followed by Renal Cell Carcinoma (RCC) [5,6]. It is characterized by sudden

spontaneous bleeding within the retroperitoneum establishing the Lenk triad of abdominal mass, back pain, and hemodynamic alterations [7], nevertheless, it was a classic representing a quarter of patients [8]. Also, there have been described as a complication in patients with End-stage renal disease that are predisposed to bleeding diathesis in the setting of uremic platelet dysfunction and endothelial abnormalities [9].

The role of urologists depends fundamentally on the hemodynamic status because, in some circumstances, patients are unstable; therefore, general surgeons treat surgically these cases [10] performing a laparotomy and, when the renal unit is affected, radical nephrectomy finally is performed. Therefore, urologists are relegated losing the possibility of repair and even more save the renal unit.

Nevertheless, in selected cases when those patients are clinically stable, treatment options could be active surveillance or renal artery embolization. In cases not counting embolization and the patient continuous bleeding, surgery is obligatory. Currently, the most frequent approach is laparotomy or lumbotomy avoiding minimal invasive surgery that could be performed in selected cases. Infrequent cases or embolization may displace laparoscopy; therefore, the aim is to report a WS with hemodynamic instability that was solved by a laparoscopic approach as a first tool.

Clinical case

After the patient's consent respecting her identity and ethical approval by our Institution Committee, we were allowed to report this case. It was about a healthy 50-year-old woman that attended to the emergency room with nontraumatic sudden colic flank pain without other symptomatology. The physical examination demonstrated tachycardia with normal blood pressure. Abdomen examination was painful on the left side and the blood test showed 30% hematocrit, 9.2 hemoglobin with no blood in the urinary sample. A Computer Tomography (CT) scan demonstrated active bleeding inside the Gerota Fascia associated with a 4 cm pure endophytic renal mass (Figures 1A, and 1B, Figure 2). The patient was initially treated conservatively; hence, a few hours later blood pressure decreased suddenly consequently underwent a laparoscopic exploration.

Laparoscopic access was performed as a standard transperitoneal approach. Due to the high R.E.N.A.L. score [11], it was impossible to preserve the renal unit. Fortunately, the hematoma was inside the Gerota Fascia facilitated the procedure using conventional clips de Hemolok® (Weck Surgical Instruments, Teleflex Medical, Durham, North Carolina) to control the renal hilum. Surgical time was 120 minutes with no bleeding and the specimen retrieval was done using a Pfannenstiel incision (Figure 3). Hospital stay was 24 hs without blood transfusion and the final histopathological findings were 3.8 cm type 2 papillary RCC type.

Discussion

Wunderlich Syndrome (WS) is an interesting clinical condition characterized by the beginning of spontaneous,

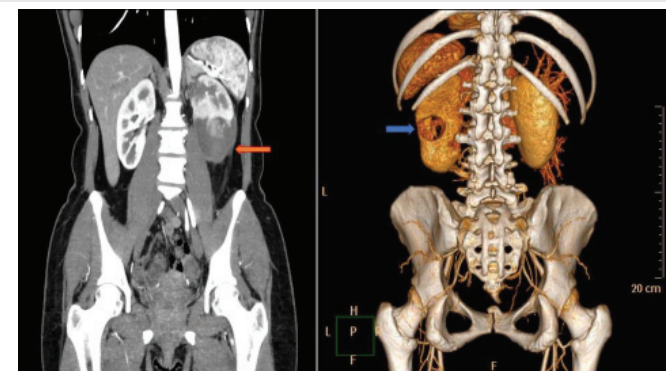


Figure 1: CT scan: Left: Hematoma within Gerota fascia. The red arrow shows hematoma. Right: 3D Posterior view. The blue arrow shows the tumor site.



Figure 2: Surgical specimen with the tumor completely inside.



Figure 3: Ports position and Pfannenstiel incision for renal retrieval.

non-traumatic renal hemorrhage in the sub-capsular and perirenal space. Almost all cases are self-limited needing only conservative management. Nevertheless, in some cases with active bleeding, vascular embolization is highly effective. Unfortunately, urologists do not have an active role in this setting above all when the patient is hemodynamically unstable being general surgeons that treat this pathology [10].

Most approaches are performed by a middle laparotomy to explore the whole abdominal cavity; however, in selected cases when the CT scan demonstrated only renal injury urologist could consider nephron-sparing surgery in a minimally invasive approach.

Even though the laparoscopic approach is considered the standard of care for tumor renal, there are few cases reported of this access for WS probably because of the infrequent cases, hemodynamic instability, or other visceral injured as well [12,13]. Besides, embolization by hemodynamics or general surgeons is those who treat this emergency when is necessary.

Although laparoscopic access for WS is not the standard approach it could be adopted for selective cases such as those hemodynamic stable and without any visceral injured. In the setting, Peña y cols. described 4 cases of WS treated with a deferred laparoscopic approach [12]. The authors remarked the difficult surgery due to intense fibrosis and adherence was probably secondary to having deferred the treatment. In our



case, no adherence was found as a conventional laparoscopic nephrectomy considering that surgery as soon as possible could be better. Escudero y Castillo described eight WS, half of them were treated laparoscopically with radical nephrectomy [6]. Recently, Bretterbauer et al. reported a laparoscopic resolution of a WS due to a 10 cm angiomyolipoma in active bleeding [13]. Finally, two cases have been publicized about laparoscopic robot-assisted being able to perform a nephron-sparing surgery in a different and acute setting; respectively [14,15].

Conclusion

Wunderlich Syndrome seems to be feasible and safely treated laparoscopically in selected patients such as no visceral injured associated, hemodynamically stable or stabilized, and, in our opinion, in an acute setting avoiding adherence and intense fibrosis. Therefore, immediate treatment should be considered.

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