



WUNDERLICH SYNDROME IN A PATIENT ON HEMODIALYSIS- LAPAROSCOPIC MANAGEMENT.

Urology

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ABSTRACT

Spontaneous renal hemorrhage (Wunderlich syndrome) is a rare and life-threatening urological emergency. We report a case of a 73-year-old female with end-stage renal disease (ESRD) on hemodialysis, who presented with acute onset left flank pain and a palpable mass in the left hypochondriac region. A computed tomography scan revealed a large left renal hematoma. This was successfully managed with laparoscopic left nephrectomy. We report this case because of its rarity and significant association with the patient on hemodialysis (HD).

KEYWORDS

Wunderlich syndrome, hemodialysis (HD), spontaneous renal hemorrhage, end-stage renal disease (ESRD), nephrectomy.

INTRODUCTION:

Spontaneous peri-renal hemorrhage is a relatively rare and diagnostically challenging condition with a high rate of mortality. The congruent management of these patients is based on early and accurate diagnosis with the determination of the cause. Various aetiologies include acquired cystic kidney disease (ACKD) (20%), renal carcinoma (60%), vascular diseases (12%), renal infections (3%), haematological disorders (2%), and idiopathic (3%) [1].

We report an extremely rare case of spontaneous perirenal hemorrhage in a patient with end-stage renal disease on hemodialysis.

CASE REPORT:

A 73-year-old female presented to the emergency department with acute onset left lumbar region (anterior and posterior) pain, nausea, vomiting, and progressive abdominal distention for two days.

Past medical history indicated ESRD on bi-weekly hemodialysis for 10 years. There was no history of previous trauma to the abdomen. On admission, her vital signs were pulse rate 90/min, blood pressure (BP) 100/70 mm Hg, temperature 36.6-degree centigrade. Physical examination revealed abdominal distension, tenderness, a palpable mass in the left flank and an empty rectum. Laboratory findings were suggestive of low serum hemoglobin (Hb) concentration 8.0 g/dl, elevated urea 130 mg/dl, and creatinine 7.8 mg/dl.

Computed tomography scan (CT) of the abdomen revealed a large left renal subcapsular hematoma with a maximum length of 5.6 cm with perinephric fat stranding. Her abdominal symptoms started worsening progressively despite two days of conservative medical management. There was a significant drop in BP (from 100/70mm of Hg to 80/60mm of Hg), Hb (from 8g/dl to 5 g/dl), and worsening abdominal signs of peritonitis.

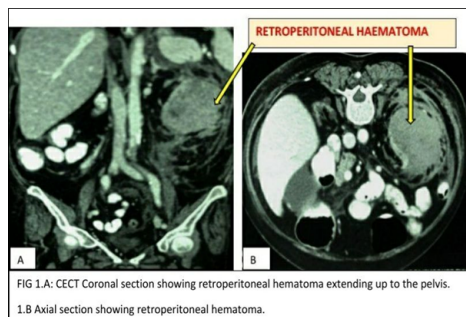


FIG 1A: CECT Coronal section showing retroperitoneal hematoma extending up to the pelvis.
1.B Axial section showing retroperitoneal hematoma.

Because of gradual deterioration, she was planned for surgery after initially stabilising her with intravenous fluid resuscitation and blood transfusion. At laparoscopy, a large retroperitoneal peri-renal hematoma was seen extending from the left hypochondrium to the pelvis. Laparoscopic left nephrectomy was performed in view of background advanced chronic renal disease. Selective arterial embolisation was considered as one of the therapeutic options. However, surgery was preferred as the definitive therapeutic option eventually in view of following reasons: 1. Pre-existing end stage renal disease – the futility of salvaging such a damaged kidney by a lesser invasive procedure (angio-embolisation), 2. High chances of infection in the peri-renal hematoma (which was removed en-masse with the specimen during surgery), which would have remained in situ, post arterial embolisation, 3. Contralateral damaged kidney would suffer more damage due to exposure to intravenous contrast (used during arterial embolisation) 4. Hemodynamic instability. The specimen was retrieved in a plastic bag by enlarging the lowermost trocarsite incision. Post-operative recovery was uneventful. Histopathology was suggestive of hematoma, chronic glomerulonephritis without any evidence of malignancy.

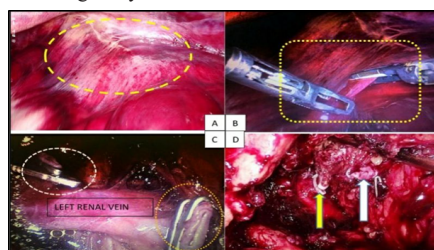


Fig 2A: A well-encapsulated retroperitoneal hematoma displacing oedematous bowel. Fig 2B: Left lateral fold division to enter the retroperitoneal region. Fig 2C: white and yellow circles indicate left adrenal and gonadal veins clipped and divided with skeletonised left renal artery before division. Fig 2D: Final view yellow and white arrows indicate clipped and divided left renal artery and vein.

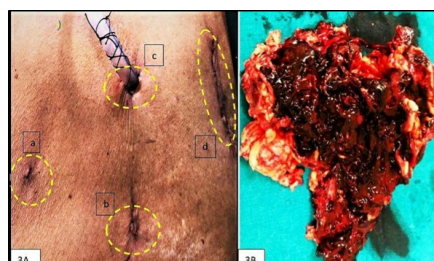


FIG 3A –patient in right lateral position b-optic port and a, c- working port site, d- assistant's 5mm port extended for specimen retrieval. FIG 3B – Postoperative specimen of the left kidney with hematoma.

DISCUSSION:

Spontaneous rupture of the kidney was first reported by Wunderlich in the year 1856. It involves atraumatic dissection of renal parenchyma resulting in bleeding into subcapsular and/or peri-renal spaces. In a patient on hemodialysis, the main causes of the acute abdomen are spontaneous peri-renal hemorrhage (20%) or mesenteric non-occlusive ischemia in 18% of the patients [2].

The patient with spontaneous renal hemorrhage (SRH) may present with the classical triad of Lenk [3]

- 1- Acute onset abdominal or flank pain
- 2- Palpable mass
- 3- Hypovolemic shock

However, they may present with non-specific symptoms with different degrees of hemodynamic compromise or instability.

Explicit diagnosis of SRH requires sound clinical knowledge and good radiological imaging. CT of the abdomen is the investigation of choice with 100% sensitivity in diagnosing retroperitoneal hemorrhage. Ultrasonography usually detects perinephric collection. However, it does not differentiate echogenic clotted blood from solid tissue. Angiography is used in a patient suspected to have vascular pathology, in anticipation of emergency embolization.

Management of SRH has always been controversial and may pose a dilemma.

The SRH patient can be managed with

- 1.Conservative approach
- 2-Minimal invasive approach (transcatheter embolization)
- 3-Surgical techniques with partial or total nephrectomy (Open or Laparoscopic)

The SRH in a hemodynamically stable patient can be managed conservatively with complete bed rest, intravenous fluids, blood transfusion, stopping the anticoagulants, and observation in ICU, only if CT does not show a renal tumor, peri-renal contrast leak or aneurysm.

Arterial angiography with trans catheter embolization for hemodynamically unstable patients requires experience in selective and hyper selective embolism with the presence of appropriate facilities in the emergency [4].

The surgical approach is adopted for the cases with progressive anemia, life-threatening hemorrhage, increasing size of the retroperitoneal hematoma, signs of peritonitis, and hemodynamic instability. We, therefore, considered nephrectomy in our patient as she was hemodynamically unstable.

In Kendall's series, it was observed that renal tumors were not detected in some of these SRH patients at the time of acute hemorrhage on CT scans [5].

CONCLUSION:

In conclusion, the clinicians must have a high index of suspicion for spontaneous renal hemorrhage (SRH) in a patient with acute abdominal symptoms who is on hemodialysis. Surgery was eventually the preferred treatment modality in our patient because of progressively worsening hemodynamic instability, the potential mortality associated with massive hematomas, and the frequency of unrevealed tumors on CT.

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REFERENCES:

1. Mubjeesh NJ, Matzkin H. Spontaneous subcapsular renal hematoma secondary to anticoagulant therapy. J Urol. 2001; 165:1201. [Google Scholar]
2. Etiology of spontaneous perirenal hemorrhage: a meta-analysis. Zhang JQ, Fielding JR, Zou KH J Urol. 2002 Apr; 167(4):1593-6. [PubMed]
3. Medda M, Picozzi SCM, Bozzini G, Carmignani L (2009) Wunderlich's syndrome and hemorrhagic shock. Emerg Trauma Shock 2:203–205 [PMC free article] [PubMed]
4. Sofocleous CT, Hinrichs C, Hubbi B. . Angiographic findings and embolotherapy in renal arterial trauma. Cardiovasc Intervent Radiol. 2005;28:39–47. [Google Scholar]
5. Spontaneous subcapsular renal hematoma: diagnosis and management.Kendall AR, Senay BA, Coll MEJ Urol. 1988 Feb; 139(2):246-50. [PubMed] [Ref list].