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Vamshi Vitla
MBBS, MD Consultant Physician, Department of Internal Medicine, Gleneagles Aware Hospital, Hyderabad, Telangana, India

Sreekhar Pentamsetty
MBBS, MD, DM Consultant Cardiologist, Department of Cardiology, Gleneagles Aware Hospital, Hyderabad, Telangana, India

Rajendra Vajrapu
MBBS, MD, FNB, EDIC Consultant Critical Care Medicine, Department of Critical Care Medicine, Gleneagles Aware Hospital, Hyderabad, Telangana, India

Praveen Reddy Kambalapally
MBBS, MS, Consultant General Surgery, Department of General Surgery, Gleneagles Aware Hospital, Hyderabad, Telangana, India

Corresponding Author:
Vamshi Vitla
MBBS, MD Consultant Physician, Department of Internal Medicine, Gleneagles Aware Hospital, Hyderabad, Telangana, India

Managing a challenging case of spontaneous massive retroperitoneal hematoma with sepsis in a case of double valve replacement on anticoagulation: A case report

Vamshi Vitla, Sreekhar Pentamsetty, Rajendra Vajrapu and Praveen Reddy Kambalapally

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Abstract
Bleeding into the posterior aspect of peritoneal space is termed as Retroperitoneal hematoma. Most of the cases of Retroperitoneal hematoma could not be identified in early stages because of lack of clear signs and symptoms. Clinical features usually appear only after a significant amount of bleeding has occurred. Based on the etiology of bleed it is broadly classified as Traumatic & Non traumatic. Based on the anatomical location of bleed it is classified into 3 Zones. Anticoagulation is a part of management in cases of Cardiac valve replacement. Anticoagulation if not properly monitored in regular intervals can lead to spontaneous bleeding manifestations. In this article we are presenting a case of Spontaneous retroperitoneal hematoma with Left lower zone Lung collapse with consolidation and Sepsis in a case of Double valve (Mitral& Aortic) replacement on oral warfarin with recent history of Right Hip Hemiarthroplasty. In this article we are emphasizing on Balancing Anticoagulation vs Preventing expansion of Hematoma and Containment of Sepsis in such difficult scenarios.

Keywords: Anticoagulation, hematoma, double valve replacement

Introduction
Retroperitoneal hematoma is the bleeding in posterior aspect of peritoneum. Patients are usually asymptomatic in cases of minor bleeding. Hemorrhagic shock will be earliest presenting complaint in case of massive retroperitoneal hematoma [1]. Depending on etiology of bleed it is broadly classified as Traumatic vs Non traumatic. Traumatic type is further sub divided into Penetrating and Blunt injury. Non traumatic type is further sub divided into Spontaneous and Iatrogenic. Organizational schema divides Retroperitoneal space into 3 Anatomical zones. Zone 1 which is in the central medial zone is between both psoas muscles and contains the abdominal aorta, inferior vena cava, pancreas, and midline duodenal structures. Zone 2 which is peri renal zone begins lateral to the psoas muscles on bilateral sides and contains the kidneys, ureters, and portions of the colon. Zone 3 also known as pelvic zone comprises the bladder and many vascular structures, including a robust network for presacral veins. Retroperitoneal space also contains s vital musculoskeletal structures, including the psoas muscles, vertebra, quadratus lumborum, and iliacus muscles, and houses connections to the diaphragm and bony pelvis [2]. Clinical features are based on the organs involved and extent of blood loss. Computed Tomography imaging is key in identifying the extent, cause and complications of hematoma. High index of suspicion should be kept especially in cases on Anticoagulation as signs & symptoms are limited at early stages. Advanced life support protocol should be in hand while assessing the case. Treatment modalities include observation, interventional radiology coiling and embolization, and surgical management for unstable patients [3, 4].

Case presentation
Index patient is a 69 years old male with comorbidities of Primary hypothyroidism, Essential Hypertension and Double Prosthetic valve (Mitral & Aortic) replacement on Levothyroxine,

ARB and Warfarin daily dosing. He had recent history Left foot ulcer and fall causing Basi cervical fracture neck of Right femur for which he underwent Right Uncemented Modular Bipolar Hemiarthroplasty surgery 2 weeks prior to present hospitalization. His investigations done at time of discharge showed Hemoglobin of 11.6 gm/dl, INR 1.17, Serum creatinine 1.3, SGOT 74IU/ml, Total Bilirubin 2.20mg/dl, Blood and Wound swab (Foot) cultures were sterile. He was in a bed ridden state post procedure.

Patient presented with complaints of Sudden onset breathlessness and fever which was gradually progressive and was taken to a nearby hospital where he had severe respiratory distress for which he was intubated and airway was secured. HRCT Chest was done which showed Left Lung Lower zone consolidation with collapse & mild pleural effusion. Patient was referred to a higher center for further evaluation.

Patient vital signs in our Emergency Room were BP 70mmHg systolic, Pulse rate of 100/min, SpO2 100% on Ventilator support. GCS was E_2V_tM4. Ionotropic support was initiated. ABG analysis showed Mixed Respiratory & Metabolic acidosis with increased Lactates. 2D echocardiography showed Ejection fraction 58 with Mild MR/TR and Moderate PAH. 3 D CT Pulmonary Angiogram was done in suspicion of Pulmonary thromboembolism, which was negative for pulmonary thrombus, It revealed Mucus plug causing obliteration of Left Lung Lower lobe segmental bronchus with resultant Atelectasis of entire Left lower lobe along with Pleural effusion (Fig-1), Retroperitoneal hematoma on Left side. The corresponding Chest Xray image is shown in (Fig-2). CT Brain was done which did not show any signs of active bleeding. CT Abdominal Angiography was done which showed Massive Retroperitoneal hematoma on Left side of size of size 110 x 57mm predominantly involving Anatomical zone2 with extension into zone1&3 extending along Left paracolic gutter into pelvis as seen in (Fig-3,4,5,6), Eccentrically located plaque was noted along Left common iliac artery with stenosis of around 60-70%, No obvious extravasation of contrast was seen.

Fig 1: CECT Axial sections of Chest reveals Collapse of Left basal Lung segments with Mild pleural effusion. Cardiomegaly is noted

Fig 2: Chest Radiograph reveals Cardiomegaly with Left ventricular enlargement, Homogenous Radio opacity in Left lower zone representing Effusion with Atelectasis

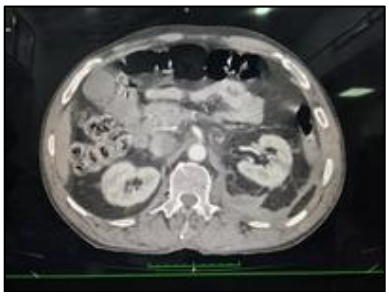

Fig 3: CECT Abdomen Axial sections reveal Anterior displacement of Left Kidney with perinephric collection

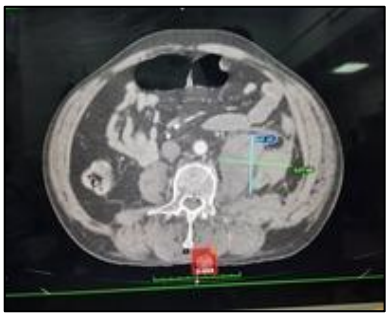

Fig 4: Axial sections

Fig 5: Coronal sections

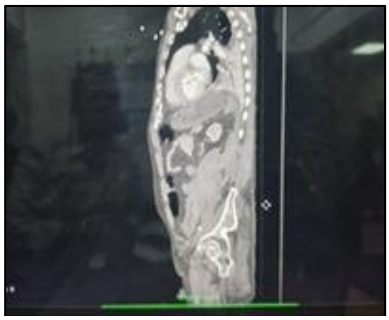

Fig 6: Sagittal sections

Fig 4,5,6 Axial, coronal and sagittal sections of CECT Abdomen reveals large lobulated non enhancing Left Retroperitoneal hematoma extending into Psoas displacing left kidney anteriorly

Fig 7: Follow up Chest Radiograph reveals Normal aerated Left lower lung fields

Blood investigations revealed Raised INR-4.16 with Low Hemoglobin (5 gm/dl) and Increased TLC 32900 cells/microliter. NT-pro BNP levels were elevated (26482 pg/ml) for which Diuretics were given and fluid was restricted. Cardiology opinion was taken and Anticoagulants were withheld and PRBC & FFP transfusions were given. INR and Hemoglobin levels were closely monitored. Broad spectrum Antibiotics were initiated as per Sepsis guidelines after sending appropriate cultures. Vasopressor and Ventilator support was gradually weaned off and patient was extubated on Day4 after admission. Repeat chest imaging showed improvement in Aeration of Left lung lower zone (Fig-7). Once there was no further Hemoglobin drop and decrease of vasopressor support Anticoagulation was reinitiated with close monitoring of INR and hemoglobin. ABG also showed improvement in parameters and Oxygen support tapered off. Blood Cultures showed growth of Streptococcus mitis. Surgical site showed collection of serosanguinous fluid and its culture showed growth of Acinetobacter baumannii. Antibiotics were changed according to sensitivity pattern. Patient TLC counts were decreasing with No febrile episodes.

Orthopedic opinion was taken for infected wound and suspected infected implant, Plan was to remove implant and do a revision surgery after making wound free from sepsis. Patient was discharged on Day8. Patient had requested to follow up under previous Orthopedic surgeon to undergo Revision surgery.

Discussion

In this article we will primarily focus on Non-Traumatic type and specifically on Spontaneous Retroperitoneal hematoma. Iatrogenic subtype of Non-Traumatic hematoma are predominantly seen after percutaneous interventions and endovascular procedures. Because of recent technological advances the incidence of Iatrogenic Retroperitoneal hematomas is decreasing. Despite decrease in incidence however there was 3.5 fold increase in 30 day mortality. Risk factors for retroperitoneal hematoma following percutaneous interventions appear to be arterial puncture above the level of the inguinal ligament, female sex, and being treated with GP IIb/IIIa inhibitors or warfarin [5-7].

Incidence of Spontaneous Retroperitoneal hematoma is 0.6%, this data is largely based on case reports, case reports and small retrospective cohorts [8]. Most of these cases are seen associated with Old age, patients on Anticoagulation or in cases with underlying coagulopathy. Spontaneous retroperitoneal hematoma can occur in background of rupture of parenchymal lesions such as angiomyolipomas, cysts, and renal carcinomas or underlying vascular malformations such as aneurysm or pseudoaneurysm of any number of retroperitoneal vessels. Vessels documented in case reports include the superior gluteal artery, various lumbar arteries, renal arteries, and pancreaticoduodenal arteries [9]. One single-center retrospective study identified only 89 patients over 7 years. The observed mortality of that cohort was 5.6% during the first week and 19.1% at 6 months. Forty percent of that cohort required intensive care unit monitoring [4]. Presentation signs and symptoms are often vague and nonspecific in Spontaneous Retroperitoneal hematomas. Findings related to Hypovolemia and Anemia like Tachycardia, hypotension and poor peripheral perfusion is noted. Abdominal pain and tenderness, Femoral nerve palsy can be seen sometimes.

Contrast Enhanced Computed tomography is the preferred diagnostic modality which reveals both Anatomical details like size, location, extension and also source of bleed in case of active extravasation. Intravenous contrast extravasation is an independent predictor of the need for interventional radiology or surgical intervention [9, 10]. Laboratory studies include Complete hemogram, Metabolic profile including renal and liver parameters, coagulation studies in cases on Anticoagulants or suspected cases of coagulopathy.

Treatment approach is Multifaceted, requires interprofessional opinions. In cases where patients on Anticoagulants or having Coagulopathy withholding Anticoagulants and reversal of coagulopathy is warranted to prevent further increase in bleeding. Blood products also should be used as per levels of Hemoglobin. As per available data much of these cases generally improve with supportive care and blood transfusion. Interventions like Embolization of Blood vessel or Surgical exploration depends on extravasation of contrast in CECT scan. The prognosis of spontaneous retroperitoneal hematoma is relatively poor. A significant factor for this is that older patients with multiple comorbidities make up the majority of patients diagnosed with spontaneous retroperitoneal hematoma. One retrospective study found a mortality of 10% at 30 days, with 40% of patients requiring intensive care. This suggests that nearly half of spontaneous retroperitoneal hematomas are critical. Complications include Infection, Symptomatic anemia, Urinary obstruction and Abdominal compartment syndrome.

Conclusion

Spontaneous Retroperitoneal hematomas itself is a rare clinical entity. Much of the cases are in the background of usage of Anticoagulants or coagulopathies. Predominantly seen in the elderly with Multiple comorbidities. Symptoms are generally nonspecific and vague. High index of clinical suspicion with good history taking and physical examination helps in early detection. CECT remains preferred diagnostic modality for both knowing the anatomical extend and identifying source of bleed. In cases where extravasation of contrast is seen it helps in planning Interventions like Embolization and Surgical intervention. Much of these cases generally require Blood transfusion, Reversal of Anticoagulation and follow up. ICU admission and care is needed in most of the cases. Adequate Sepsis protocols need to be followed. Long term complication includes Infection, Symptomatic anemia and Obstructive uropathy and Abdominal compartment syndrome. As this condition is predominantly seen in elderly with multiple comorbidities the overall prognosis remains poor with high 30 day mortality rates.

Declarations

- **Abbreviations:** NT-pro BNP= N terminal pro Brain natriuretic peptide, PRBC= Packed Red Blood Cells, FFP= Fresh Frozen Plasma. CECT= Contrast Enhanced Computed Tomography.
- **Ethics Approval and Consent to participate:** N/A.
- **Consent for Publication:** Informed Consent was obtained from the subject.
- **Availability of Data and Materials:** Data is contained within the article.
- **Conflict of Interest:** Authors declare no conflict of interest.
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References

1. Kasotakis G. Retroperitoneal and rectus sheath hematomas. Surg Clin North Am. 2014 Feb;94(1):71-76. [PubMed: 24267499]
2. Daly KP, Ho CP, Persson DL, Gay SB. Traumatic Retroperitoneal Injuries: Review of Multidetector CT Findings. Radiographics. 2008 Oct;28(6):1571-1590. [PubMed: 18936022]
3. Feliciano DV. Management of traumatic retroperitoneal hematoma. Ann Surg. 1990 Feb;211(2):109-123. [PMC free article: PMC1357953] [PubMed: 2405790]
4. Sunga KL, Bellolio MF, Gilmore RM, Cabrera D. Spontaneous retroperitoneal hematoma: etiology, characteristics, management, and outcome. J Emerg Med. 2012 Aug;43(2):e157-161. [PubMed: 21911282]
5. Kwok CS, Kontopantelis E, Kinnaird T, Potts J, Rashid M, Shoaib A, *et al*., British Cardiovascular Intervention Society (BCIS) and National Institute of Cardiovascular Outcomes Research (NICOR). Retroperitoneal Hemorrhage After Percutaneous Coronary Intervention: Incidence, Determinants, and Outcomes as Recorded by the British Cardiovascular Intervention Society. Circ Cardiovasc Interv. 2018 Feb;11(2):e005866. [PubMed: 29445000]
6. Maluenda G, Mitulescu L, Ben-Dor I, A Gaglia M, Weissman G, Torguson R, *et al*. Retroperitoneal hemorrhage after percutaneous coronary intervention in the current practice era: clinical outcomes and prognostic value of abdominal/pelvic computed tomography. Catheter Cardiovasc Interv. 2012 Jul 01;80(1):29-36. [PubMed: 21735521]
7. Farouque HM, Tremmel JA, Raissi Shabari F, Aggarwal M, Fearon WF, Ng MK, *et al*. Risk factors for the development of retroperitoneal hematoma after percutaneous coronary intervention in the era of glycoprotein IIb/IIIa inhibitors and vascular closure devices. J Am Coll Cardiol. 2005 Feb 01;45(3):363-8. [PubMed: 15680713]
8. Lukies M, Gipson J, Tan SY, Clements W. Spontaneous Retroperitoneal Haemorrhage: Efficacy of Conservative Management and Embolisation. Cardiovasc Intervent Radiol. 2023 Apr;46(4):488-495. [PMC free article: PMC9888734] [PubMed: 36720738]
9. Caleo O, Bocchini G, Paoletta S, Ierardi AM, Scionti A, Tonerini M, *et al*. Spontaneous non-aortic retroperitoneal hemorrhage: etiology, imaging characterization and impact of MDCT on management. A multicentric study. Radiol Med. 2015 Jan;120(1):133-48. [PubMed: 25572538]
10. Baekgaard JS, Eskesen TG, Lee JM, Yeh DD, Kaafarani HMA, Fagenholz PJ, *et al*. Spontaneous Retroperitoneal and Rectus Sheath Hemorrhage-Management, Risk Factors and Outcomes. World J Surg. 2019 Aug;43(8):1890-1897. [PubMed: 30963204]

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