

Non-Thrombotic Pulmonary Embolism Due to Catheter Fracture in a Case of Hemophilia

Hemofili Olgusunda Kateter Kırığına Bağlı Trombotik Olmayan Pulmoner Emboli

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Abstract

Central venous catheter complications are rare in patients with hemophilia, but should not be ignored. A 19-year-old male with hemophilia who presented with hemoptysis was found to have a 7 cm catheter fragment lodged in his pulmonary artery. Despite the chronic presence of this foreign object, no pulmonary hypertension developed over a 3-year follow-up. The conservative management option was selected due to the risks associated with invasive procedures in hemophilia. This report highlights the significance of long-term monitoring and individualized care in patients with retained intravascular foreign bodies.

Keywords: Hemophilia, Central Venous Catheter, Catheter Fracture, Pulmonary Embolism, Pulmonary Hypertension, Foreign Body.

Öz

Santral venöz kateter komplikasyonları hemofili hastalarında nadir ancak önemli sorunlardır. Bu olgu sunumunda, hemoptizi şikâyeti ile başvuran ve pulmoner arterde 7 cm uzunluğunda kateter parçası saptanan 19 yaşında bir erkek hasta sunulmaktadır. Bu yabancı cismin kronik varlığına rağmen, üç yıllık takip süresince pulmoner hipertansiyon gelişmemiştir. Hemofili tanısı olan hastada invazif prosedürlerin riskleri nedeni ile konservatif tedavi tercih edilmiştir. Bu olgu, intravasküler yabancı cisim bulunan hastalarda uzun süreli takip ve kişiselleştirilmiş bakımın önemini vurgulamaktadır.

Anahtar Kelimeler: Hemofili, Santral Venöz Kateter, Kateter Kırılması, Pulmoner Emboli, Pulmoner Hipertansiyon, Yabancı Cisim.

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Hemophilia is a genetic disorder characterized by a defect in the normal blood clotting mechanism that increases the tendency for spontaneous or traumatic bleeding in patients. Central venous catheter (CVC) use is common in patients with hemophilia due to the need for frequent intravenous therapy. However, CVCs can cause complications such as infection, thrombosis, embolism and, in rare cases, catheter fracture (1). The present study reports on a patient with hemophilia who presented with hemoptysis and a foreign body lodged in the pulmonary artery resulting from a CVC fracture.

CASE

A 19-year-old male patient was admitted to the chest diseases outpatient clinic with a complaint of blood coming from the mouth (hemoptysis). Chest radiography revealed a 7 cm linear opacity with a smooth border in the central zone of the right lung (Figure 1). An analysis of the patient's previous imaging records revealed that the opacity had been present for approximately 4 years, before which, the catheter opacity was kinked but was seen as a whole (Figure 2). It was learned from the patient's history that he had been followed up with a diagnosis of hemophilia and had been carrying a CVC for approximately 12 years. When the removal of the CVC was planned, it was found that the catheter was detached and a piece of it remained in the intravascular system. A thoracic CT scan with and without contrast revealed a 7 cm long foreign body in the pulmonary artery that was thought to be a catheter fragment (Figure 3). The patient was duly evaluated for pulmonary hypertension and a transthoracic echocardiography was performed, the results of which were within normal limits. An angiographic intervention was planned for the removal of the catheter fragment, but was abandoned due to its organization, the risk of embolization and the patient's hemophilia. The patient was subsequently followed up clinically and radiologically. Low-dose antithrombotic therapy was administered initially, but was discontinued after 3 months. The patient has been followed up in the pulmonary hypertension outpatient clinic for approximately 3 years without any clinical deterioration or pulmonary hypertension development.

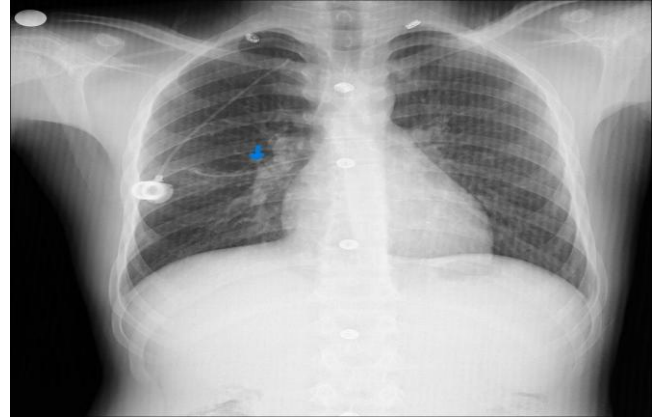


Figure 1: Chest radiography revealed a 7 cm linear opacity with a smooth border in the middle zone of the right lung

DISCUSSION

Central venous catheters are vital for patients with chronic intravenous therapy needs, such as those with hemophilia; however, risks such as mechanical complications, infection and thrombosis may occur with prolonged catheter use. Non-thrombotic pulmonary embolism associated with catheter fracture is a rare but potentially serious condition, and although surgical or endovascular intervention is usually recommended in such cases, follow-up was preferred in the presented case due to his coagulopathy. A foreign body in the pulmonary artery may organize over time, leading to chronic pulmonary embolism or pulmonary hypertension. Previous studies have reported an association between foreign body embolization and pulmonary hypertension, with inflammation, fibrosis and increased vascular resistance in the pulmonary vessel wall (2). El-Heis et al. (3) reported a remarkable case in which a fractured catheter fragment remained lodged in the pulmonary artery for 16 years before detection and clinical evaluation.



Figure 2: Four years earlier, the catheter opacity was kinked but could be seen as a whole

This highlights the potential for long-term retention of catheter fragments without immediate life-threatening complications, although such cases still carry significant risk of pulmonary hypertension, hemoptysis or embolic phenomena. Similar cases have been reported in the literature. Thanigaraj et al. (4) described a patient in whom a peripherally inserted central catheter (PICC) fragment embolized to the pulmonary artery and remained there for 11 years before successful retrieval. Likewise, Dell'Amore et al. (5) reported a case of peripheral venous catheter fracture with pulmonary artery embolization that was retrieved surgically. These reports highlight the diverse management strategies that may be employed when dealing with embolized catheter fragments. Shrestha et al. (6) successfully removed a catheter fragment from a pulmonary artery using an endovascular method. In our case, the organization of the catheter fragment led to a decision for conservative follow-up, given the high risk of invasive intervention in patients with hemophilia. In this respect, our case differs from other cases in terms of management preference, and emphasizes the importance of an individualized approach when dealing with patients with concomitant bleeding diatheses such as hemophilia.

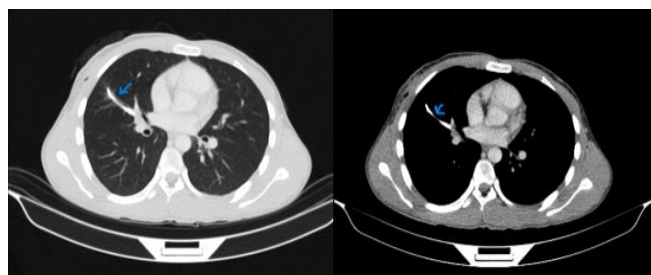


Figure 3: Thoracic CT scan without contrast showed a 7 cm long foreign body in the pulmonary artery, which was thought to be a catheter fragment

CONCLUSION

Foreign body embolization due to CVC fracture is a rare condition and can be difficult to manage in certain patient groups, such as those with hemophilia. While pulmonary hypertension and bleeding complications have been observed in similar cases reported in the literature, no such complications developed in our case, which may be attributable to patient-based variables and differences in the organization of the foreign body. The present case can be considered remarkable due to the non-thrombotic pulmonary embolism, and highlights the importance of

long-term follow-up, the early detection of complications and individualized treatment approaches. Invasive intervention decisions in cases of foreign body embolization should be evaluated with a multidisciplinary approach, taking into account the patient's general condition, comorbidities and bleeding risk.

CONFLICTS OF INTEREST

None declared.

AUTHOR CONTRIBUTIONS

Concept - E.E.D., S.A., M.A., R.B.O.; Planning and Design - E.E.D., S.A., M.A., R.B.O.; Supervision - E.E.D., S.A., M.A., R.B.O.; Funding - E.E.D., S.A., M.A., R.B.O.; Materials - E.E.D., S.A.; Data Collection and/or Processing - E.E.D., S.A., M.A.; Analysis and/or Interpretation - E.E.D., S.A., M.A.; Literature Review - E.E.D., S.A., M.A.; Writing - E.E.D., S.A., M.A.; Critical Review - E.E.D., S.A., M.A.

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