

A Rare Case of Port-a-Cath Migration into the Mediastinum

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ABSTRACT

Port-a-cath is commonly used in patients who require frequent administration of intravenous medications. We describe a rare case of port-a-cath migration into the mediastinum 16 months after its insertion.

Keywords: Implantable venous access device, mediastinum, port-a-cath

Un Caso Raro de Migración de un Catéter Port-a-Cath al Mediastino

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RESUMEN

El catéter Port-a-Cath se utiliza comúnmente en los pacientes que requieren administración frecuente de medicamentos intravenosos. Describimos un caso raro de migración de un Port-a-Cath al mediastino, 16 meses después de su inserción.

Palabras claves: Dispositivo de acceso venoso implantable, mediastino, Port-a-Cath

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INTRODUCTION

Port-a-cath, also known as totally implantable venous access device, is used in patients who require continuous or frequent administration of intravenous substances. It is the preferred means of administering chemotherapeutic agents in cancer patients, as once it is surgically inserted, it can be used multiple times conveniently (1, 2). We report a rare case of port-a-cath migration into the mediastinum 16 months after its insertion.

CASE REPORT

A 69-year old Caucasian woman was diagnosed with stage IV follicular lymphoma. She underwent a port-a-cath placement in her left subclavian vein. She received treatment with six cycles of RCHOP (rituximab, cyclophosphamide, doxorubicin hydrochloride, oncovin, prednisone) with excellent response. She is currently on maintenance treatment with eight weekly rituximab. She presented to the clinic for regular follow-up prior to her seventh cycle of maintenance rituximab treatment. She denied any new complaints. Her vitals were stable with blood pressure 113/75 mmHg, pulse 94/minute, respiratory rate 18/minute, temperature 98.3 °F,

oxygen saturation 95%. Port-a-cath site examination did not reveal any abnormalities. Systemic physical examination was negative. Blood tests for haematological parameters and complete metabolic profile were within normal limits.

During port-a-cath flush prior to rituximab administration, the patient complained of chest pain. Blood could not be drawn through the catheter either. The patient was sent to radiology for dye study. During dye study, flow of contrast was impaired (Fig. 1). It was inconclusive as to whether this

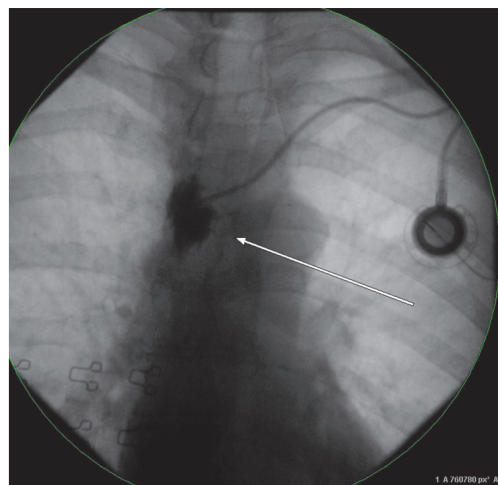


Fig. 1: Extravasated contrast shown during dye study.

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was due to a large fibrin sheath thrombus or because the tip of the catheter was out of the blood vessel. Therefore, a computed tomography (CT) scan of the chest was performed. It showed the protrusion of the tip of the port-a-cath through the innominate vein (Fig. 2). The contrast injected for dye study was found in the mediastinum.

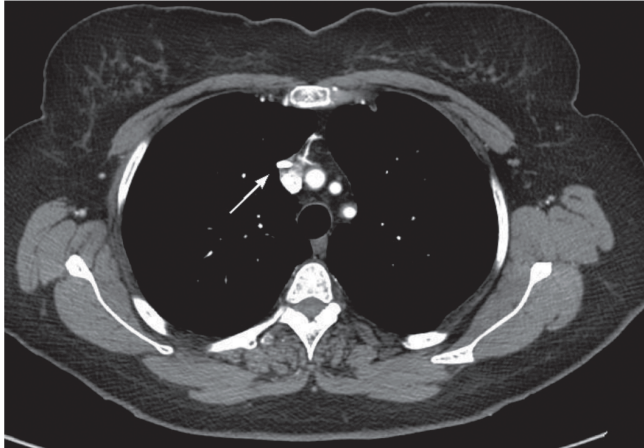


Fig. 2: Computed tomography scan of the chest shows protrusion of the tip of the port-a-cath through the innominate vein.

Under ultrasound guidance, the port-a-cath was removed by a guidewire placed across the innominate vein. The post-procedure period was uneventful.

DISCUSSION

Port-a-cath is considered relatively safe with few complications (3). Complications are more common immediately after the port-a-cath is placed (4). Early complications may include arterial punctures, malpositions and pneumothorax (4).

Late complications are uncommon and may include venous thrombosis, pocket infection, port-related bacteraemia, catheter rupture and embolization (2, 4). Extravascular migration of port-a-cath is rare. Poorter *et al* retrospectively studied the complications arising from the implantation of 169 port-a-cath venous access devices over a six-year period. Only three patients experienced extravascular migration of the catheter (3). Port-a-cath has been reported to cause perforation of the innominate vein (5, 6), azygos vein (1), left pericardiophrenic vein (7), right atrium (7), right ventricle (7, 8) or the left atrium through the patent foramen ovale (7), and migrate into the extravascular space. Although unclear, the perforation of the vessel wall may be caused by the large size and poor flexibility of the port-a-cath or from the catheter tip abutting the vessel wall, causing intimal damage of the blood vessel with mechanical and chemical irritant forces promoting vessel erosion (9). Chemotherapy administered at the same point of the vessel for a prolonged time can lead to microscopic ulcerations promoting perforation (1).

Time from catheter insertion to vascular perforation is variable. Duntley *et al* reported that the median time from catheter insertion to vascular perforation was two days with a range of one to 60 days (5). Kulvatunyou *et al* reported a case of superior vena caval perforation from a port-a-cath occurring three months after the insertion of the device (9). Our patient had port-a-cath migration into the mediastinum after 16 months of insertion. Therefore, it is crucial to check patency of the catheter before administration of medications in every case.

Administration of chemotherapeutic agents has the potential to cause catastrophic consequences such as tracheal necrosis (1), thoracic empyema (1), cardiac tamponade (8), mediastinal haematoma (6) and even death (8). Therefore, it is extremely important to assess the patency of the catheter and its migration before every chemotherapy administration. The absence of blood reflux in the puncture chamber and/or chest pain resulting from saline infusion should be investigated with dye study and, occasionally, CT scan of the chest (1).

CONCLUSION

Extravascular migration of port-a-cath is a rare complication. Port-a-cath patency and position should be checked every time prior to administration of medications. There should be a low threshold for performing dye study in case of doubt.

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