Disconnection of a Venous Port-A-Cath Followed by Embolization After Saline Flush: Rare Case Report

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A 77-year-old man presented with painful swelling of his Port-A-Cath insertion site soon after flushing with normal saline. No discomfort or abnormality was found during the saline flush. A chest roentgenogram showed that the disconnected catheter had separated from the disc and was absent from its original location. The disconnected catheter was found embolized, by chest roentgenogram and CT scan, to the right atrium and hepatic vein. The patient was treated successfully with an X-ray guided extraction of the catheter. The possibility of catheter disconnection with embolization should be considered and a chest roentgenogram performed immediately in cases of rapid swelling of subcutaneous tissue around the port chamber after fluid infusion.

Key words: chemotherapy – complication – embolization – port catheter systems

INTRODUCTION

Fully implantable catheters open up the possibility of frequent, multiple and long-term intravenous infusions of drugs in oncology patients. They are also very useful for drugs likely to result in phlebitis, such as adriamycin and vinorelbine.

CASE REPORT

A 77-year-old male presented with tender swelling of his Port-A-Cath insertion site after flushing the system with 10 ml of normal saline. He was a case of squamous cell carcinoma, left lower lobe of the lung, with right supraclavicular lymph node metastases. An initial chest roentgenogram showed a mass lesion over the left lower lobe (Fig. 1). Bronchoscopic biopsy revealed squamous cell carcinoma. After staging, a stage IIIB squamous cell carcinoma of the lung was ascertained. As treatment, he received chemotherapy with cisplatin, gemcitabine and ifosfamide with a Port-A-Cath implantation over his upper left chest wall.

The patient was admitted for his third course of chemotherapy on January 4, 1999. Physical examination showed no abnormality. However, a painful, subcutaneous swelling measuring 4 cm in diameter was noted at the Port-A-Cath insertion site soon after completion of a 10 ml normal saline flush of the port system. There was no pain or swelling during injection of the normal saline. A chest roentgenogram was ordered immediately, which showed that the port A catheter was disconnected from from the disc. A migration of the catheter to the
right atrium was just barely visible. Marked shrinkage of the tumor mass was also noted. This patient underwent a chest CT scan to monitor the effect of chemotherapy on the tumor mass and also to locate the disconnected catheter (Figs 2 and 3). It was found that the catheter had migrated from the left brachiocephalic vein into the inferior vena cava, with one end lodged in the right hepatic vein and the other in the right atrium. With the radiologist's help, retrieval of the port A catheter fragment was performed successfully, using a basket catheter via the right femoral vein approach, on the third day. The port A chamber was removed surgically on the fourth day and a hematoma was found around the disc insertion site. The patient received chemotherapy on the fifth day and was discharged uneventfully.

DISCUSSION

A rare complication of Port-A-Cath disconnection after flushing with normal saline is reported. Complications following venous port implantation have frequently been found, including operational complications, dislocations, infections, thrombosis, obstructions, leakages and extravasation (1). Most of these complications, however, can be avoided by a careful approach to implantation and subsequent handling (2). This is supported by the observation that the complication rate decreases as experience with the technique is gained (2). A recent report of 1500 patients receiving a subcutaneously implanted venous access system revealed that only 13% had implant-related complications (3).

To ensure an accurate adjustment of the catheter length, a two-part port system is available, consisting of a separate catheter and a fixed chamber. However, the use of such an apparatus entails the risk of disconnection and subsequent catheter embolism. Disconnection between the catheter and the port is most likely to result from the patient's body movement (4). The worst scenario is embolization of the catheter fragment. Disconnection has been reported by Lokich et al. in approximately 2% of cases (5). Disconnection of the catheter from the chamber, followed by catheter embolization, is even rarer. Catheter infections and thrombosis were the most frequent complications in a study involving 1500 patients who received implanted central venous port systems. In this collection of cases, catheter disconnection was rarely found and no embolization due to a dislodged catheter was reported (3). A high mortality rate following catheter embolization into the heart has been documented, with death in 50% of the cases (6). Since X-ray guided extraction is a relatively safe procedure and causes little discomfort to the patient, it should be used to remove the catheter in these cases as soon as possible, if the patient's condition allows.

Since the efficacy of chemotherapy in treating lung cancer has been established, the use of subcutaneous central venous access ports has been increasing to ensure venous access. With such widespread use of this system, we should keep in mind all potential complications of the port system. Should complications occur, early diagnosis to document accurately the problem and a timely resolution of the complication will help to restore the smooth functioning of the catheter system, and, in our case, to avert severe complications or mortality. The
possibility of catheter disconnection should always be consid­ered and a chest roentgenogram performed immediately upon finding rapid swelling of the subcutaneous tissue around the port chamber.

References