Spontaneous Chemoport Fracture and Cardiac Migration

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Abstract Central venous access devices are routinely used in oncology for delivering chemotherapy of which implantable chemoports are the most common. Spontaneous breakage and migration of the catheters is a very rare but known complication of the procedure. Patients will usually present with cardiac manifestations in form of chest pain or arrhythmias. Herein we report a case of spontaneous breakage and cardiac migration in which the patient was asymptomatic. Patient was successfully managed by an interventional cardiologist.

Keywords Chemoport · Fracture · Migration

A 3 year old male child was diagnosed as having Hodgkins lymphoma and subsequently planned for chemotherapy in our hospital. A chemoport catheter (bard, 6.6f) was placed in the right internal jugular vein and port was placed in the chest wall for chemotherapy. After the procedure, a chest x ray revealed good placement of the chemoport. Then the child underwent 6 cycles of chemotherapy in next 6 months through this port and had a very good response. Patient was then planned for port removal. On examination it was found that the port was in situ but the catheter was not palpable in the subcutaneous tissue of the neck. A chest radiograph was performed due to suspicion of catheter migration secondary to spontaneous breakage (dislodgement) of chemoport catheter. It showed that the chemoport catheter had migrated from its original location up

to the right ventricle, travelling across the right atrium and right ventricle through pulmonary artery. (Fig. 1). Surprisingly the child was asymptomatic and there were no ECG changes as well. Patient was then referred to a cardiology department for a possible percutaneous retrieval of the migrated catheter. As the patient was asymptomatic and stable so an elective procedure was planned. On the next day patient was taken to cath lab and retrieval was done under fluoroscopic guidance under general anesthesia. The right femoral vein was punctured, and a 6Fr sheath was inserted. Percutaneous retrieval of migrated catheter was performed with a 6 Fr snare (peripheral snare, Cordis) (Fig. 2). Floating end of the migrated catheter in right atrium was snared and pulled down via inferior vena cava towards right femoral vein under fluoroscopic guidance and finally the port catheter fragment along with retrieval set were removed through right femoral vein (Fig. 1). The length of the migrated piece was 8cm, and no thrombus was observed at the tip (Fig. 1). No major complication occurred during and after the procedure and the patient was discharged on the next day. This is a unique case because spontaneous breakage of venous access devices is very rare and patients are usually symptomatic.

Discussion

Totally implantable venous devices have been used increasingly in cancer patients since the mid-1980s. TIVDs facilitate effective long-term chemotherapy as well as parenteral nutrition, fluid replacement, and frequent blood sampling.

However, TIVDs are not without complications. Early complications include incorrect position, improper anchoring of the reservoir, skin infection, sepsis, vascular perforation with hemothorax or hemorrhagic pericardial effusion, and pneumothorax. Late complications include drug extravasation, mechanical malfunction, venous thrombosis, or migration of the catheter. The total rate of complications is about 13%.

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Fig 1 Chest x-ray showing the migrated catheter and the retrieved catheter fragment and port after removal

Fig 2 Fluoroscopy image of catheter retrieval using “lasso” technique

Although rarely reported, catheter fractures and cardiac migration are potentially dangerous complications with estimated frequency of 0.1%. A search of reports in the literature revealed only one prospective study that specifically focused on catheter or catheter fragment embolism, in which 3672 catheter insertions in 3196 patients were followed for 3 years. There were four occurrences of this complication (1.2 per 1,000 patients). In a comprehensive review of reports in the literature, we found 27 catheter fractures and the reported site of fracture was at the clavicle and first rib area in 82% of cases. The other suggestive causes included high pressure infusion for de obstruction or direct catheter injury by guide wires or needles.

The above data is all related to subclavian placement of catheter and this makes our case more unique. Catheter fracture and migration after internal jugular vein placement is very rare. The possible cause as we feel is that as it was a paediatric patient it could have been due to excessive movement.