Unusual Port Complication Resulting in Port Rotation and Inability to Access

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Introduction
We report a rare case of inability to access a Port-A-Cath (PAC) due to a rotated port with the back of the port facing anterior. A PAC is a central venous access device (CVAD) implanted under the skin. During PAC placement, a pocket is created under the subcutaneous fat on top of the pectoralis fascia where the port is inserted. PAC placement has significantly increased throughout the years for oncological pediatric patients, due to its ability to provide safe and reliable vascular access to facilitate treatment and reduce the need for peripheral cannulation and venipuncture. The use of CVADs in pediatric patients can result in complications such as local site infections, bloodstream infections, pericardial effusion, tamponade, thrombus formation, migration of the catheter tip, kinking, and twisting. 1, 2

Case Report
3 y/o patient, 15.1 kg, with a history of ganglioglioma and VP shunt, presented to CT scan for simulation for initiation of radiation therapy. Preoperatively, the patient had a right subclavian PAC which terminated in the distal superior vena cava. The patient’s preop vital signs were WNL. Upon attempted access, it was noted the 20 gauge Huber needle was audibly scraping against metal resulting in the inability to access the PAC. A peripheral IV was started, standard ASA monitors were applied and the patient was induced and a propofol infusion was started. The CT scan initiated following simulation showed that the port was rotated with the septum of the PAC facing posterior. It was determined that the patient would need a port revision before initiating radiation therapy treatment. The PAC was placed approximately one month prior to the simulation at an outside hospital. During that time frame, the patient’s PAC was accessed for scheduled medication and lab draws. However, the PAC rotated some time prior to access for simulation. During revision, the surgeon found the placement of the port was in a pocket that was too large, which resulted in the port rotating.

Fig. 2 X-ray of patient’s port correctly facing anterior, taken one day prior to attempted PAC access

Fig. 3 CT scan of patient’s port facing posterior on the day of attempted PAC access

Recommendations
Although a inverted PAC is a rare occurrence, future consideration should be geared toward best practices for anchoring PACs in the correct pocket to reduce this incidence. The pocket should be large enough to accept the port without causing tension on the skin. However, it should not be too large because it would increase the risk of mobility. The rate of rotation can be reduced when the base of the port is sutured down to the subcutaneous pocket. 4 In this case, the pocket was too large, and even though it was sutured at the base, the PAC still rotated. A rotated or inverted port should be suspected when the expected loss of resistance is not obtained during port access. A chest x-ray should be considered before multiple access attempts are made.

Conclusion
This case of a rotated PAC adds to the literature because its occurrence is a rare complication of PACs in situ. A 2015 systematic review of failed CVADs in pediatric patients found that totally implanted devices, such as PACs, had the lowest rate of failure per 1000 catheter days compared to the other types of CVADs. The most common reasons for twisting are direct trauma, a large pocket, excessive loose fat in the pocket and non-suturing of the port to the base.

References

