

Chest Mass Mimicking an Implanted Port

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K.N. is a 66-year-old man with stage IV non-small cell lung cancer. He was admitted with a fractured right hip that was caused by a fall. His appearance was older than his stated age, he was cachectic and debilitated, and his gait was unsteady. He smelled strongly of tobacco and reported smoking three to four packs of cigarettes each day for years. In addition, he stated that he used alcohol for many years and reported that he drank a fifth of whiskey every day, including the day of his fall. K.N. was pleasant and cooperative but did not seem to understand complex questions. He was provided an around-the-clock observer from the first day of his admission because the nurses deemed it unsafe for him to be alone.

The physician's admitting orders included IV fluids. Knowing that K.N. had cancer, the RN assessed him for a port. When asked, K.N. indicated that he had a port. His frame was thin and his ribs were visible. Positioned over the right subclavicular area in the midclavicular line was what appeared to be a port. It was palpated and found to be firm and mobile with a fluctuant anterior face. It was prepped and cannulated with a Huber needle. The needle entered the fluctuant area but proceeded deeper than expected. The RN did not feel the firm back of the port. Blood return was negative. She removed the needle and called the IV team RN to access the port. After experiencing the same results, the IV team RN reported the port as nonfunctioning to the advanced practice nurse (APN) and noted that she could not find a record of the port insertion in the medical records of the facility.

The APN reviewed K.N.'s radiographic records and found no mention of a port in any of the films that included the chest. She then examined the films, but no port was visible on any of the x-rays or computed tomography (CT) scans. However, on the CT scans, a mass that was not described on the CT report was evident in the exact area of the presumed port. A radiologist was called, and the mass was characterized as being bunched pectoralis muscle, with a fluid-filled sebaceous cyst measuring 1.6 cm overlying the muscle (see Figure 1).

Procedure-Related Risk Factors

Pneumothorax

Pneumothorax is a risk with any puncture of the chest wall. When placing subclavian lines, the risk ranges from 1%–6% and may not develop for 48–72 hours after the procedure (Shapiro & Angood, 2005).

Determining whether K.N.'s risk was higher than the expected range for an approved procedure is difficult. The mass or lesion that was being punctured by the needle was somewhat lower on the chest wall than the usual subclavian approach. The usual landmark for subclavian catheter placement is just below the clavicle, placing the puncture above the first rib (Gomella & Haist, 2007).

The mass or lesion was slightly lower on the chest wall between the first and second ribs, meaning that the puncture was in closer proximity to the dome of the right lung. The length of the needle was one inch; given the patient's cachectic condition, the needle could have entered the pleural cavity.

Hematoma

The risk of hematoma is associated primarily with arterial puncture during central venous catheter insertion, which carries a risk as high as 15% with subclavian line insertion (Shapiro & Angood, 2005). The risk of hematoma with arterial nicking occurs because of the relative noncompressibility of any vascular structures behind the chest wall (McConville & Kress, 2005). A remote possibility of arterial puncture exists. In K.N.'s case, he had the added risk of possible hepatic-induced coagulopathy secondary to his long-term alcohol use (Handin, 2005).

Infection

The risk of infection with central venous access devices arises from the interruption of the skin barrier and the introduction of the catheter portal for bacterial invasion (McConville & Kress, 2005). In a study of 67 women with pelvic cancers, 70 catheters were placed successfully and only two ports

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