Alexandra L. Bartholomew
L3
LSU Health Sciences Center, New Orleans, LA

Mentor: Dr. Jon Kiev, MD
CHI Saint Joseph Hospital

"Development of Small Cell Lung Cancer Following Gunshot Wound to Chest"

Small cell lung cancer (SCLC) is an aggressive malignancy that comprises about 15% of diagnosed lung cancer cases in the United States. This type of lung cancer is notorious for its rapid growth and early metastasis, resulting in advanced staging for over two-thirds of newly-presenting patients. Furthermore, nearly all patients report history of or current tobacco smoking. Additionally, a well-documented relationship exists between sites of trauma, including gunshot wounds, and subsequent cancer development, possibly as a result of inflammation, scarring, or even medical treatment. However, a direct causal relationship has not been proven definitively, and the development of SCLC in particular has not been well studied.

We report a case of a patient who presented with biopsy-proven SCLC of the left lung, 45 years following a gunshot wound to the left chest. While the patient did have a history of tobacco use (one to two packs per day for 25 years), he quit smoking 30 years prior to diagnosis. Because SCLC often presents with advanced disease, it is frequently treated with chemoradiation therapy rather than surgery. However, in this case, the tumor was a solitary mass clinically confined to the left upper lobe. Therefore, surgical resection was offered and successfully performed by an academic surgeon at a private practice, followed by postoperative adjuvant chemoradiation therapy. At a 36-month follow-up, the patient has continued to do well without evidence of recurrence.

We discuss the potential relationship between tumor development and the foreign body of the metallic object, fragments of which remained in situ following his injury and at the time of his cancer diagnosis. We will also briefly consider the implications of a clinically apparent early-stage SCLC without metastasis.