



### Virchow's Node and Carcinoma of Unknown Primary

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A 45-year-old woman presents late one afternoon to a walk-in clinic seeking antibiotics for an infection she says she has had for a few weeks. Her concern is a sore neck and a swollen, non-tender lymph node. She has no significant medical conditions and is not currently taking any regular medications. She denies any fever, cough, weight loss, changes in her appetite, or bowel habits. She looks and feels well aside from reports of mild fatigue that she attributes to a busy schedule and a stiff neck, which has negatively affected her sleep. She is a well-groomed, affluent, married mother of two who works part-time as a physiotherapist. Her family history is noncontributory, and she drinks alcohol socially and is a lifelong nonsmoker. Her physical examination is essentially unremarkable: vital signs are stable, skin is dry and intact, chest is clear on auscultation, and abdomen is soft with no distention or ascites. However, a solitary lymph node is visible, measuring 3 cm to the left supraclavicular area, which has been enlarged for a few weeks. She also has small, palpable lymph nodes in her left axilla. She is wearing a scarf to cover her neck because friends keep asking her about "the lump," which she finds annoying. The patient says she has been meaning to see her family doctor but is busy and keeps forgetting to make an appointment. She was driving by the clinic and, because it didn't look busy, she thought she would stop in and "get some antibiotics to clear it up."

After the initial assessment, the nurse practitioner (NP) requests blood work and a chest x-ray. The patient is becoming increasingly anxious to get her antibiotics and go home. She does not understand why she needs these tests and continues to tell the nurse that she does not have time for "all this fuss." Her complete

blood count (CBC) and electrolyte results come back within normal limits, and her chest x-ray shows no obvious signs of infection and appears normal; however, a small shadow is seen at the base of the left lung. The NP requests for a radiologist to review the film before discharge, but the patient is increasingly impatient and agitated about having to wait. Instead, she says to forget the antibiotics and that she will see her own doctor when she has time. Despite a waiting room that is quickly filling up, the NP is determined to keep the patient there until radiology reviews her film. As she begins to leave, the NP asks her again to reconsider. She is concerned that, despite a lack of obvious symptomology, that the woman has cancer.

#### Signal Nodes

Virchow's node is the enlargement of the left supraclavicular lymph node and is considered by clinicians to be a strong indicator of metastatic abdominal malignancy (Frank-Stromberg & Cohen, 2005). First described in the literature by German pathologist Rudolf Virchow, MD, in 1848 as an enlarged gland that was associated with gastric cancers, it has come to be known as a signal node, signaling the presence of an underlying cancer from a primary lesion in the upper abdomen (Bickley, 2009). Although strongly associated with the presence of gastric carcinomas, case reports in the literature link Virchow's node with primary breast, lung, intestine, pancreas, testicular, and bladder carcinomas, as well as lymphoma (Anastassiades & Poterucha, 2006; Cervin, Silverman, Loggie, & Geisinger, 1995; Hemalatha, Batra, Ramah, & Shashikumar, 2013; Komala, 2014). In contrast, the enlargement of the right supraclavicular lymph node is more often associated with Hodgkin and non-

Hodgkin lymphoma, as well as lung and esophageal cancers (Cervin et al., 1995).

Limited information exists in the literature on Virchow's node but, in a retrospective review of 152 fine-needle aspirate samples of supraclavicular lymphadenopathy, Cervin et al. (1995) found 96 (63%) to be positive for malignancy (58 in left-sided nodes and 38 in right-sided nodes). Pelvic and abdominal malignancies were more likely to metastasize to the left supraclavicular node, with 16 of 19 pelvic tumors metastasizing to the left, and all six primary abdominal malignancies spreading to the left node rather than the right. Cervin et al. (1995) concluded that right- and left-sided supraclavicular lymphadenopathy are indicative of distinctly different primary tumors with thoracic, breast, and head and neck cancers showing no difference in metastatic patterns.

Virchow's node is located medially and is a deep-seeded node, making it difficult to assess in a healthy individual. Asking patients to engage in the Valsalva maneuver causes the node to rise, allowing for easier palpation on physical examination (Frank-Stromberg & Cohen, 2005). The enlargement of the left supraclavicular lymph node in the presence of metastatic abdominal disease is related to location and drainage patterns of the lymphatic system. Virchow's node is the end node of the supraclavicular chain of lymph nodes and is located at the thoracic duct near the jugulo-subclavian venous junction where incoming lymph is introduced back into the venous circulation through the subclavian vein; therefore, any malignancies rising from the thorax or abdomen can be responsible for the enlargement of the supraclavicular node.

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