

# SUPRACLAVICULAR LYMPH NODE INVOLVEMENT IN LUNG CANCER

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A major question for physicians and patients alike with lung cancer is what happens when the supraclavicular lymph nodes are involved by metastatic cancer. Supraclavicular lymph nodes are located just above the clavicle or so-called collarbone. They usually are detected by palpation or deep-feeling of an enlarged mass where none should be. A recent study by Machtay in the International Journal of Radiation Oncology Biology and Physics attempted to answer the question about treatment of lung cancer patients when their node appears to be infiltrated by cancer.

Many have interpreted cancerous supraclavicular lymph node involvement as a sign of distant or systemic disease. For a lung cancer to travel to this site means it has the power of aggression to leave the lung and metastasize or spread. If physicians believe that supraclavicular adenopathy is a sign of distant disease then chemotherapy is most commonly used rather than radiation. Radiation may have more beneficial, yet local effects. However, most all physicians feel if local control is improved, then there are greater changes of cure. The question is if treatment is effective and did the disease get detected in time.

However, there have been a series of studies including patients with supraclavicular adenopathy included in what is considered Stage III lung cancer as long as there is no cancer in the fluid around the lung and the patient remains in reasonably good condition with adequate performance activity. Also, there should be no distant disease known beyond this site.

In this published study patients with Stage IIIB disease were analyzed whether supraclavicular lymph nodes were involved or not involved. If involved, radiation fields would be extended to include the site of disease. Biopsy of the supraclavicular lymph node was not necessary as part of the evaluation.

Supraclavicular lymph nodes are those lymph nodes located above or behind the clavicle and are usually felt or palpated by the physician examining the patient but sometimes are detected by CT scanning of the area. In this study there were 256 lung cancer patients, 47 were supraclavicular lymph node positive while 209 were supraclavicular lymph node negative for purposes of evaluation and study.

Interestingly there was no overall survival difference in patients who had supraclavicular lymph nodes involved versus absent supraclavicular nodes. In fact, the four year survival was 21% supraclavicular positive and 16% for supraclavicular negative patients. That would support their present made no difference or even may have been protective for unknown reasons. Perhaps they were treated more aggressively since they were felt to have been advanced malignancies and that this more aggressive treatment led to a better outcome.

Even at two years the survival rates were better if supraclavicular nodes were involved being 39% versus 33%. The progression free survival means that the cancer does not appear in any new spots.

The progression free survival rates were no different between those who had supraclavicular nodes present or absent. In fact, median progression free survival was 14.5 months with lymph node involvement versus 13.6 median with it absent.

At four years progression free survival was 19% for supraclavicular lymph node positive, versus 14% supraclavicular lymph node negative. This data might well suggest more aggressive treatment for patients since it appears the more extensively treated patients did better.

Where was there a difference between supraclavicular positive and negative nodes? It was in distant metastases as the first site of failure. This means the cancer travels beyond the local-regional areas. There was a slight increased rate of distant metastases as the first site in those patients who had supraclavicular lymph node positive versus not positive.

There was no difference in the development of brain metastases based on supraclavicular lymph nodes. Brain metastases are tumor cells that have traveled through the blood stream to enter the brain. It is usually best diagnosed by MRI scanning using contrast. It occurred in 12% of supraclavicular lymph node negative patients and 11% of lymph node positive patients.

Brain metastases did occur more commonly in non-squamous cancers compared to squamous cancers. It was 17% of non-squamous and 5% squamous cancers manifesting as subsequent brain metastases or cancer that had spread to the brain. Treatment of brain metastases centers around radiation although in select cases surgery is used to decrease the pressure on the brain or debulk a large mass quickly.

Currently randomized studies comparing chemotherapy radiation versus chemotherapy alone for unresectable Stage III lung cancer showed dramatically improved three year survival rates when chemotherapy and radiation are given.

At three years for lymph node involved lung cancer patients, the survival using chemotherapy and radiation together was 29% versus 3% when chemotherapy alone is given. Authors concluded that, "combined chemotherapy and radiotherapy is appropriate therapy for patients with Stage IIIB non-small cell lung cancer regardless of whether or not supraclavicular nodal metastases are present."

This data is the basis for administering both chemotherapy and radiation for locally advanced cancer. To increase survival ten-fold over three years certainly suggests benefit to patients with lung cancer. Ongoing studies will determine the best ways of delivering chemotherapy. New techniques to boost radiation dose should have a beneficial effect on local control and survival.

Some patients currently have PET scans to detect subtle areas of metastasis. These patients may qualify for more extensive treatment as well - perhaps yielding similarly improved outcome from treatment. Perhaps in the past patients with ominous prognosis were limited in outcome by having treatments that were similarly poor in outlook. Hopefully, updated medical information and technology should produce better results for those with cancer.