

CYBERKNIFE® EXPERIENCE: INOPERABLE LUNG CANCER

This case study demonstrates the versatility of the CyberKnife® Treatment Delivery System enabling treatment to be delivered to complex and challenging cases.

WHO/WHERE

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Epic Care, Walnut Creek, CA

ABOUT EPIC CARE

Epic Care began as a physician practice in San Leandro, CA and grew into a multi-specialty, multi-site practice which offers outpatient infusion, radiation therapy, lab and diagnostic imaging services across the San Francisco Bay area.

TECHNOLOGY SOLUTIONS

Accuray's CyberKnife® Treatment

CHALLENGE

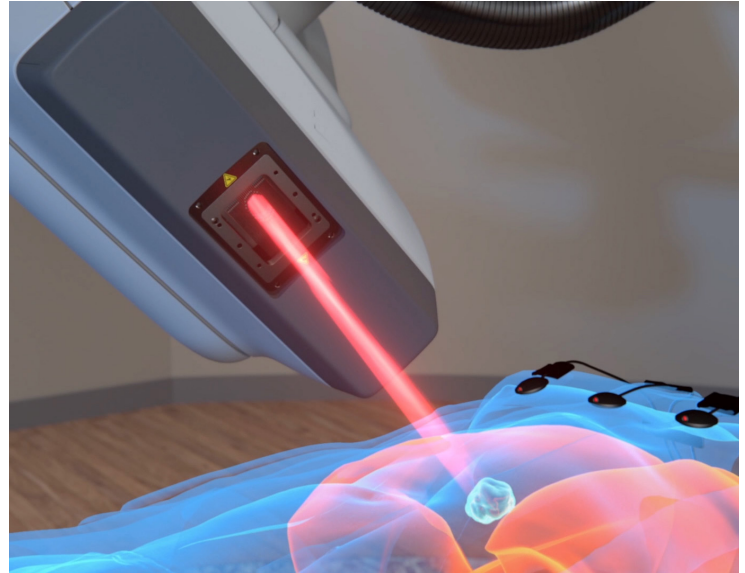
Provide non-invasive treatment of an elderly patient who was referred for percutaneous biopsy but deferred due to risk of pneumothorax.

WHAT IS THE CYBERKNIFE SYSTEM:

The CyberKnife System is a non-invasive treatment for cancerous and non-cancerous tumors and other conditions where radiation therapy is indicated. It is used to treat conditions throughout the body, including the prostate, lung, brain, spine, head and neck, liver, pancreas and kidney, and can be an alternative to surgery or for patients who have inoperable or surgically complex tumors. CyberKnife treatments are typically performed in 1 to 5 sessions. The CyberKnife System has more than two decades of clinical proof and has helped thousands of cancer patients.

WHY WE CHOSE TO TREAT WITH THE CYBERKNIFE SYSTEM:

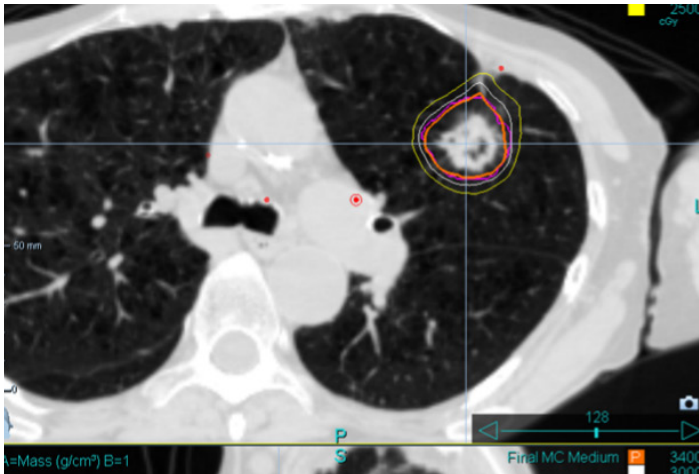
Epic Care is a multi-specialty practice with five community cancer centers, each with its own linac. We have broad and deep experience with linac-based stereotactic radiosurgery. We needed our ablative platform to have the following features:



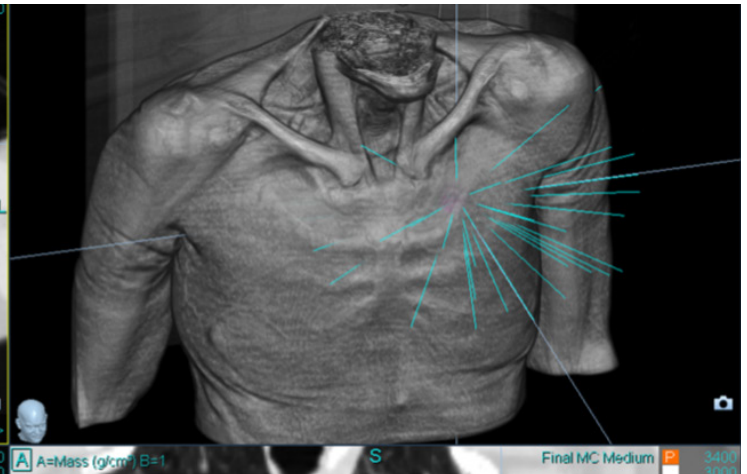
- Able to treat the entire body
- Was not just a linac with added SRS capability
- Minimize clinical overlap and cannibalization of our existing linacs
- Have marketing cachet and bring in self-referred patients
- Technology with regional market distinction

CLINICAL HISTORY:

An elderly female with a history of smoking was found to have a highly suspicious mass localized in her left lung. It was highly FDG-avid on PET without evidence of regional or distant disease. Percutaneous biopsy was recommended but ultimately deferred due to the risk of pneumothorax. The patient lived alone in a major city with limited social support and requested to be treated with a single fraction of radiation.



Treatment plan isodoses



Beam geometry for CyberKnife

	CYBERKNIFE®	CONVENTIONAL RADIATION
Position	Arms down, relaxed	Arms up, immobilized
Padding	4-inch thick memory foam	None
Breathing	Free breathing	Breath hold or abdominal compression
CT Resolution	1.5 millimeter cuts	3.0 millimeter cuts

TREATMENT PLANNING AND DELIVERY:

Patient was positioned for treatment supine, arms down with head support and lying on a thick foam pad, which reduced her discomfort from arthritis pain. Treatment was delivered with the patient comfortably free breathing without need for breath-hold or gating techniques.

- 33 robotically delivered non-coplanar beams
- The tumor was tracked during treatment to ensure accuracy using Synchrony®
- 34 Gy delivered in one fraction
- Patient reported no side effects



Patient in treatment position

Important Safety Information

Most side effects of radiotherapy, including radiotherapy delivered with Accuray systems, are mild and temporary, often involving fatigue, nausea, and skin irritation. Side effects can be severe, however, leading to pain, alterations in normal body functions (for example, urinary or salivary function), deterioration of quality of life, permanent injury, and even death. Side effects can occur during or shortly after radiation treatment or in the months and years following radiation. The nature and severity of side effects depend on many factors, including the size and location of the treated tumor, the treatment technique (for example, the radiation dose), and the patient's general medical condition, to name a few. For more details about the side effects of your radiation therapy, and to see if treatment with an Accuray product is right for you, ask your doctor. Accuray Incorporated as a medical device manufacturer cannot and does not recommend specific treatment approaches. Individual results may vary.

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