

RADIOSURGERY TO NEW ZEALAND

So what's beyond the equator, beyond the International Date Line and 18 hour time zones ahead of New York where information about radiosurgery is going to be presented? It's New Zealand. This relatively young country located about 18 hours flying time from the East Coast is my current destination. I was invited to give national lectures in its major cities and am bringing along our current fractionated radiosurgery data. One might justifiably ask why I am here. Certainly my family has asked that.

I have many patients from Asia and the South Pacific. Recently I was asked to present data to New Zealand physicians at our shared patients' request. Patients who have become enthusiastic supporters of fractionated radiosurgery wanted our New York data to be presented in the South Pacific. The trip was to take place in the American spring but was postponed for technical reasons to what would be the New Zealand late spring or summer.

Preparations for the trip are more difficult than most since the 18 hour time zone difference meant that it would be difficult to connect up by voice – therefore, there was much internet communication.

The idea of exchanging information is good. The technological age is advancing rapidly and sometimes more rapidly than many would like. Sophisticated technology is expensive, time consuming and often difficult to implement. Yet, the rationale of new technology like fractionated radiosurgery means that benign and malignant tumors in the head can be attacked often with great success (cessation of growth, shrinkage or disappearance of the tumor in the treated area) and the amount of radiation to the healthy tissues can be lessened or minimized. This means in general less side effects and more efficacy of treatment.

Fractionated radiosurgery uses precise methods of targeting more so than standard radiation. In certain cancers this technology is used to escalate the dose while in other conditions like acoustic neuromas, we actually de-escalate the dose to minimize unwarranted and seemingly unnecessary side effects to the healthy adjacent nerves.

So, it's off to New Zealand via Continental and then Air New Zealand.

Crossing the equator is hard to feel in the airplane. That's a matter of arriving and seeing the long days and the warm weather while New Zealanders prepare for the Christmas and holiday season.

The first day is in Auckland. Auckland is the largest city with a population of about one and a quarter million people. The entire population of New Zealand is less than four million so Auckland comprises one of its major cities. It's a day to try and catch up on lost sleep, see a few sights including the spectacular Sky Tower which is the tallest structure in the southern hemisphere, (actually taller than the Eiffel Tower) and dominating the skyline of this New Zealand City. Bungee - the act of leaping off a cliff attached to an elastic band - was born in New Zealand. Now it's even done off the sky tower in Auckland.

The ride to the top is accomplished within minutes and the view is spectacular. Auckland was formed with its multiple jutting protrusions into the South Pacific Ocean via volcanoes over hundreds of thousands of years. The volcano sights are still visibly erupting and making hills from otherwise flat lands. These volcanoes have given a rugged, irregular contour to the coastline.

There are ferry connections between Auckland and the adjacent islands including one and I was advised to travel to Davenport. Davenport is a quaint picturesque town also with hills, small shops and a quieter way of life.

The food in Auckland is very international reflecting the population which comes from the four corners of the world. Originally the population was the Maori people. It is said that the Maori people arrived in canoes led by the Polynesians settling about a thousand years ago. Some have called the Maori's the Viking's of the Pacific since they settled in such extraordinary distance away from home.

The next to emigrate were the English. Currently, there are many English descendants, but in fact, large European and Asiatic immigrations have given Auckland its international feel. The cuisine reflects this with everything from turkey, schwarma to sushi and Chinese food.

I was told by my driver to Auckland that all four seasons of the year can be represented in one day here and sometimes even twice again. That seems true enough with sun, rain, clouds, blue skies or warmth and coolness all evident in just one day.

Of the four million inhabitants about 14% are of Maori descent. The capital is Wellington but the largest city is Auckland and then Christchurch. Auckland is in the North Island and Christchurch in the South Island.

The Dutch explorer Abel Tasman was the first European who sighted this land in 1642 and then Captain James Cook in 1769 circumnavigated the country and mapped the coast with Europeans following in his footsteps.

New Zealand is known for many things one of which is that in 1893, New Zealand women were the first to be allowed to vote in the world.

So, what was medical about the trip? Nine flights, four major cities, medical schools, departments and innumerable patients discussed – that was the week in New Zealand.

The first stop was Dunedin. There are two major islands of New Zealand, the North Island and the South Island. Many New Zealanders laugh how descriptive but non-creative the names are. Dunedin is on the South East coast of the South Island. It is a beautiful university town that is dominated by the university and medical school.

It was there that my host Dr. Graham Stevens met me and took me first on a beautiful tour of the area before getting down to work. The tour included one of the only main land home for albatross. These incredible birds mate, hatch eggs in Dunedin and at times fly away for years coming back home to mate again. They have been tracked flying for thousands of miles at a time using geographic navigation systems attached to their feathers. There are penguins and sea lions around. The scenes are spectacular. The town of Dunedin is quaint and reminiscent of America in the 1950's with unlocked doors and innocence of a time long past.

In Dunedin Hospital I attended the brain tumor meeting and discussed our New York treatment approach. We have had years of experience with thousands of patients treated. This information was highly sought by our colleagues and we discussed many cases including arteriovenous malformations, which are entangled blood vessels in the brain as well as recurrent meningiomas and pituitary tumors. The brain tumor group was an interesting array of physicians including neurosurgeons, neuro-radiologists and radiation oncologists.

The system in New Zealand is government-dominated and in many ways government-limited. Funding, technology and experience therefore are modest. Of course, the staff and doctors are highly intelligent and motivated and form a great core group. Many expressed interest in coming to New York to visit us and learn about our experience.

Another day - another flight. On to Wellington which is in the south east corner of the North Island. Wellington is the capital of New Zealand and is dominated by the government and

governmental agencies. Its new government building is called the “Beehive” aptly named because of its appearance resembling a beehive. Approaching the government buildings there are open doors in the front, back and sides - with no police or armed guards. Again it’s a throwback to decades before.

Nearly all of the cities of New Zealand are on the ocean - the ocean being the Pacific. The Tasment is located to the west and separates New Zealand from its big brother, Australia. New Zealand is nearly the size of Great Britain but it has only four million inhabitants compared to more than sixty million in the UK.

The lecture at Wellington Hospital was dominated by a great interest in acoustic neuromas. One of the senior physicians there has a wife with an acoustic neuroma resected by surgery which unfortunately resulted in deafness and facial paralysis. She had recurrence after surgery and stereotactic radiosurgery was used for salvage. It was evident head and neck and ENT surgeons were interested in fractionated radiosurgery for acoustic neuromas. We have the largest experience worldwide using fractionated radiosurgery for acoustic neuromas. This information gathered great interest there as well as at other cities. Generally our approach for this disease is very different using non-invasive fractionated stereotactic radiosurgery only – avoiding surgery.

One of the ear doctors has a friend who is 35 with metastatic melanoma and we also discussed body radiosurgery which is radiosurgery beyond the brain and its role in treating metastatic lesions secondary to this malignant skin cancer.

From Wellington it was on to Christchurch. Christchurch is a beautiful English-type city on the South Island. Christchurch is the second largest city in New Zealand and the largest center of the south island. It was planned by the Church of England as a model English settlement in the South Pacific. To the locals it is known as the Garden City because of its many parks and gardens. It does indeed have beautiful parks.

There we were met by a full amphitheater of physicians eager to hear about radiation. Their physicians certainly have traveled well and one radiation oncologist had spent the last three years in Singapore before returning to his native New Zealand. There was a great deal of interest in radiosurgery versus surgical treatment of acoustic neuromas and a large amount of discussion about the likelihood of facial nerve and facial dysfunction after surgery compared to the impeccable record of our fractionated radiosurgery approach.

As well, cost issues between open surgery for brain tumors versus fractionated radiosurgery were discussed. Most analysis shows markedly less expense as well as less toxicity with fractionated radiosurgery than open surgery. The country certainly has a frugal approach to health expenditures with about 5% of the gross domestic product being spent on health compared to about 14% in the United States. For standard radiation often patients wait 12 weeks to commence a course of radiation, which is unheard of in our facility. Access to other ancillary care such as MRI and CT scans often can be time-consuming compared to the typical patient treated with us.

The final lecture was in the main city of New Zealand, Auckland. So, then we flew again. It is a hustle n' bustle business-type community with traffic jams. It also has beautiful scenery and a port heading east to the Pacific and west to Australia.

Auckland is the home of the National War Museum which houses artifacts from the history of New Zealand as well as military battles and the country's participation in wars from the Boar War to WWI, WWII, and peace keeping missions around the world. Currently, the country's military is involved in peace keeping in various global hot spots.

In each site and in every locale, there is much discussion about the Maori people. The Maori people were the native people here when the French and British so-called first found New

Zealand about 250 years ago. The Maori people, by legend, came on 7 boats from the Hawaii area to New Zealand a thousand years ago and settled. The Maori have strong traditions and culture. The British negotiated a treaty with the Maori people and the treaty is still under constant discussion centuries later. By that treaty, the Maoris were to be protected and given British citizenship in exchange for Great Britain controlling these beautiful South Pacific Islands.

The situation is similar to that between the United States Government and the American Indians or Native People. Many countries have similar issues with the people who first settled the land. In Australia, the Aborigines are well-known having preceded the Europeans by thousands of years. The War Memorial Museum in Auckland as well as the museums in Wellington documents the history of the Maori people. Beautiful replicas of the boats are on display, which brought hundreds of people thousands of miles to New Zealand. This voyage still remains almost a miraculous journey. The music, art, culture of the Maori people is remarkable. The national war Memorial Museum in Auckland is a wonderful place to start learning about the history and culture.

Auckland Hospital was the site of the conference on radiosurgery where I presented our brain and body data. There was great enthusiasm about our updated material for brain as well as body. Doctors from radiation oncology as well as neurosurgery were especially interested in the brain work while head and neck and ENT surgeons wanted to hear about our acoustic neuroma and head and neck cancer results.

We have one of the largest experiences world wide using fractionated radiosurgery for re-treatment for head and neck cancer including those in the nasopharynx, paranasal sinus, salivary glands and other locations around the mouth, throat and neck area. Also presented was our body radiosurgery data with control rates of the primary and metastatic cancers outside the brain.

There was a discussion on setting up a national radiosurgery education day to be held on an annual basis. The education level of the physicians I met is superb and the interest was remarkable.

My week in New Zealand was marked by the speed in which the time passed, the close relations between New Zealand and American people with a great deal of traveling between the two countries despite the formidable distance. The eagerness for gaining insight into new treatment technology, even when limited by government regulation and funding was remarkable. The New Zealand countryside with its high mountains – called the Southern Alps on the South Island – is extraordinarily beautiful. Exotic animals include the wallaby, which resembles the kangaroo in miniature; the Kiwi - unique to New Zealand - is a flightless bird that is on the endangered species as well as insects such as the Weta, which resembles a giant cockroach. New Zealanders are proud to say there is nothing dangerous in the wilderness and anyone can sleep outside without fearing the presence of dangerous animals or even snakes.

All in all it is a delightful country to visit. Most say the best months are January through April with great weather. Many Europeans fly in during the July and August months for ski holidays.

So while I started the flight with trepidation because of the long duration and great distance, the time went exceedingly fast with new relationships formed that I hope will be forever close. I am indebted to Mr. Robert Sintes whose family member was diagnosed with an acoustic neuroma, and this stimulated interest in our radiosurgery program and resulted in my travel and lecture tour of New Zealand. I am also indebted to Graham Stevens from Dunedin who remained with me for much of the week and served as my host at every medical conference.

I look forward to returning perhaps bringing my family to this country line that is so friendly, warm and quaint. In any event, it is likely that more will be heard of New Zealand and stereotactic radiosurgery in the future.