

August 7<sup>th</sup>, 2007

### Healing hands



**Dr Alejandro Badia reviews x-ray imagery with local doctors after a presentation at the Marriot, Invaders Bay. Photo by Mark Lyndersay. Inset images of a before and after case of ulnar drift courtesy of Dr Badia.**

“There is a nexus of different medical disciplines in the hand,” Dr Alejandro Badia explains to a group of medical professionals at the Marriott at a meeting two weeks ago.

The hand is a particularly complex arrangement of muscle, nerves, fine articulated bones and blood vessels that is all too easily damaged and is uniquely challenging to repair. Fusing, for instance, the abandonment of movement in a digit to control pain, remains a valid, if last ditch option in hand surgery.

For several of those in attendance, this is stuff they learned before they cut their first cadaver. For the few lay persons in attendance, it’s a revelation, as Badia leads the group through an explanation of his techniques.

It’s a surprisingly frank and open session.

Badia doesn’t hide the techniques he uses. In fact, part of his mission is to teach them—which he and a group of partners do at the Miami Hand Center—and to expand

the scope of those learning opportunities at the DaVinci Center, an 18,000 square foot facility under construction near South Beach in Miami.

### Fine motor skill

Badia works a very specific area of the human body, from the elbow to the fingertip, but the limb has very fine bones, easily damaged meeting points between articulated joints and the muscles that give us fine motor control.

The hand also happens to be responsible for much of what has enabled humans to innovate—the ability to grip and pull, and of course, type.

As I'm writing this, I'm glancing at my fingers tapping away at the keyboard and I remember some of the people that Dr Badia has worked with; people represented in his intriguing presentation by severed fingers, wrists broken open in terrifying ways and gaping bloody gashes of mangled tendon and bone that were presented to him in the hope that he could recreate a working hand.

These cases made for spectacular visuals, particularly those in which the good doctor was able to rescue motor skills from apparently mangled meat, but a great deal of his work happens in much smaller incidents, hands twisted by rheumatoid arthritis or just quietly crippled by carpal tunnel syndrome.

### Carpal tunnel syndrome

Carpal tunnel injuries are the most common ailments he sees and over time he has found that it affects women twice to three times as often as men.

"There is research on this, but I believe, and I say this with no research of my own, that the cause of most of these injuries is hormonal," Badia says. "Poor ergonomics can make these injuries worse, but I don't see repetitive stress as the starting point."

The injury results from the compression of the median nerve inside a bony canal of the wrist called the carpal tunnel.

Badia does much of his fine work with an arthroscope, a kind of endoscope, a fine tube managed by a grip that looks like a construction tool with fine instruments and a camera on its business end that are introduced to the area of injury through a small incision.

### Surgery through a slit

Arthroscopy became popular when it was used to repair the knee injuries of athletes. The minimally invasive surgical techniques offered faster recovery times for young men and women with a narrow window of professional viability.

In videos that show him at work, the subject hand is raised, one or more fingers pointing to the ceiling, held by what appears to be the medical version of a Chinese finger trap as the doctor makes practiced, vaguely wizardly movements with his hands while looking at a large screen.

On the monitor, the vague gestures are translated into delicate surgical procedures on a scale of millimetres.

In videos showing this fine work, muscles are debrided, bones are pinned and tendons are stitched together on a scale that is, to a casual observer, unimaginable.

Badia's a busy guy. He is the Chief of Hand Surgery at Baptist Hospital of Miami, a founding partner of the Miami Hand Center and shares his experience widely, particularly with colleagues in Latin America. Today, he's off to lecture in Guayaquil, Ecuador.

The Cuban-American specialist's visit was facilitated by Dr Godfrey Araujo, a local orthopaedic surgeon and Lisa Niles, a local physiotherapist who are hoping to forge links between the DaVinci Center and local surgeons. Minister of Health John Rahael slipped into the evening session at the Marriot, but made no announcements.

Links:

[www.drbadia.com](http://www.drbadia.com)

[www.davincicenter.com/davinci/](http://www.davincicenter.com/davinci/)

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