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Discussion to: Robotic Sympathetic Trunk Reconstruction for Compensatory Sweating after Thoracic Sympathectomy

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Disclosures: None

Unidentified Speaker 1:

So, the discussion for this paper will be Dr. Dan Miller from Augusta University. We've got four minutes.

Dr. Daniel Miller (Marietta, GA):

Perfect. I'd like to thank the Association for allowing me to discuss this paper. An outstanding presentation and outstanding results, early results. My question is, and in your algorithm for workup of compensatory sweating, how do you decide-- I mean, obviously the man who had the sweat and the boot. I thought there was going to be fish coming out of there. But how do you decide on which patients and how to go early? Because your patients were 20 years out on average. So how do you put this into the algorithm at the present time?

Dr. Yin-Kai Chao (Taoyuan, Taiwan):

So, we got referrals from all over the world, not only locally. So, these patients, they all treated by different kinds of methods before. So, these patients all have very severe symptoms. And before surgery, we need the patient to see many different doctors like the psychiatrist and the cardiovascular physicians, because we need to make sure that his symptom is related to ETFs and that we can make sure that we can do a good reconstruction and a good result, yes. So that's what our algorithm. Yes.

Dr. Miller:
And also too, you use thermography, which is not a technique that's used-- anybody use thermography in here to evaluate your patient? I mean, you all do that a lot. And I think it's an incredible technique, but how do you work that into your algorithm for this?

Dr. Chao:

So, we face a very difficult time during the COVID-19 because no patient wanted to come to us to do the thermography. So, not every patient has the thermography. And thermography was the concept during COVID because when the patient entered the hospital, they will be checked by the temperature. So yes, so we got the machine from the hospital. And then we take the patient to some nearby hotel. I mean, the [sauna?]. And then they are willing to share with us their progress. So that's the reason we can get this image. And we are also quite excited because that's the only objective measure we can do so far.

Dr. Miller:

And also, eight and a half hours. I mean, does the robot have a cup holder now? I don't know if y'all have that on or not.

Dr. Chao:

So actually, the surgery time is not that long. It is like we are cooking the fish, one side and the other side. So that's quite a long time. But the surgery itself takes-- each side is around two and a half hours. You see the fine sutures. So, it's about 40 sutures, each chest.

Dr. Miller:

Because you didn't show, but they reconnect each intercostal—

Dr. Chao:

Yes.

Dr. Miller:

--level. Which is, I mean, that's an incredible amount of-- I mean, just congratulations. And also, until you proved what we were talking about on the first case, that at 24 months, your results were better than at 6 months because
of continued growth of the nerve and so just outstanding job. I think this should be a landmark paper and also a landmark technique.

Dr. Chao:

Thank you very much. Thank you.

Unidentified Speaker 1:

We have time for one more question.

Unidentified Speaker 2:

A quick question. Thank you very much. So about 22 years ago, I had a patient who had compensatory sweating and wanted his sympathectomy reversed. And I changed my practice and instead of cutting the nerve, I started clipping the nerve. And then we found, actually, about 50% of people with facial flushing, who got a sympathectomy, wanted it reversed because they couldn't stand having dry hands. And so, before the robot, I would just go in and pull the clips off, and then their dermatomes would reinnervate slowly over the next year and a half. I wonder your thoughts about clipping the nerve instead of cutting it.

Dr. Chao:

So, there's some animal experiments that if you clip nerve, you need to take it off before six weeks. After six weeks there are induced some irreversible changes of the nerve. But I believe maybe some patients will have still some viable nerve fibers running through.

Unidentified Speaker 2:

The nerve dies distally.

Dr. Chao:

Yeah.

Unidentified Speaker 2:

But your nerve is not alive distally. It's dead. That's why it takes so long for the results to show reinnervation.
Dr. Chao:

Yes. So, we operate on several patients. They have multiple clippings. So sometimes they will clip. They treat the hyperhidrosis. I mean, compensatory for further clipping. So, the patient will clip from T2 to T8. And so, we would need to take out all the clips and then we reconstruct the nerve. So, we are facing a lot of extreme conditions. But I think the outcome is reproducible.

Unidentified Speaker 2:

Thank you.