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A New Technique Allows Surgeons to Operate on the Tiniest Patients

By Dr. Sanjay Gupta

Jayla Vargas might have had to wait six years until she was big enough for the operation that would allow her to breathe normally. But her surgeon had a better idea.

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When she was born, Jayla Vargas's jaw was no bigger than her mother's thumb – so small it pushed her tongue against her throat, preventing her from breathing or swallowing.

The normal practice with children born with this condition is to put a tube through the baby's throat, and leave it there for years until the child is big enough for surgery to reshape her jaw.

But Jayla was spared those years of waiting because of a new surgical technique in which doctors can plan a difficult surgery ahead of time on a 3-D model.

"The advantage of 3-D technology is that you can actually do surgery before you get to the operating room," said Oren Tepper, MD, Jayla's surgeon at the Montefiore Medical Center. "It not only allows you to plan the surgery but also pick up any problems that might happen during surgery."

For some surgeries, there is no road map to follow. That was the case with Jayla, who was not only tiny but whose jaw was misshapen. A surgeon would not have the usual landmarks to follow. He would be figuring it out as he went along.

Without a model to practice on, that would probably mean several exploratory surgeries before the final operation could be performed. No one would want to put an infant through that.

Thanks to the 3D model, Jayla had just one surgery, which worked perfectly to correct her breathing.

Her mother Diana said she bounced right back. "She didn't fuss or anything," Diana said. Today, "she's into everything. She's a normal little girl."

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