

## BroadcastMed | Cryoablation closed captions

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So cryoablation is a technology that's been available for probably over a decade now, but it's really taken off in the pediatric surgery community for patients with pectus excavatum repairs.

The advantage of this technology is that it's applied through a probe that's a sterile single-use instrument.

And it doesn't require any additional surgical care to use.

So the probe gets inserted during thoracoscopy.

And when the probe is applied to the intercostal nerve, it will actually cryoablate the outer surface of the nerve, leaving the inner part intact.

And so what that achieves is a temporary pain relief.

But it doesn't completely destroy the nerve axons.

Then, the axon will regenerate in a period of four to five weeks or so.

So we can specifically target those intercostal nerves that we're using for pectus excavatum repair, which in our practice, is nurse 2 through 7.

And that'll offer the patient analgesia in the region in which we're operating.

So the traditional pain control model for pectus excavatum surgery has been either/or a thoracic epidural in combination with numerous different analgesics.

So these patients typically were in the hospital from five to seven days, they had a transition from epidural pain control to oral.

And it was a rough transition at times.

However, with cryoablation, these patients have long-term pain control that allows them to leave the hospital typically within postoperative day three.

And when they do leave the hospital, we're finding that their narcotic utilization is lower and that their reliance on multimodal therapy is much more effective.

So not only does it save them an additional procedure, i.e.

the epidural, it also shortens length of stay and overall increases patient satisfaction, without any additional surgical procedure involved.

The benefit will last the patients anywhere from three to six weeks, just depending on nerve regeneration.

I think from a surgical perspective, the important part of cryotherapy actually is having adequate surgical exposure and preventing damage to adjacent organs.

So for example, when we do a pectus excavatum repair, we found it to be incredibly important to have lung isolation.

So we work very closely with our pediatric anesthesia colleagues.

And we're actually using a new technology called the EZ-Blocker, which allows us to avoid using a double-lumen endotracheal tube, but simply placing this EZ-Blocker down a smaller-sized pediatric endotracheal tube.

And we can use that for lung isolation.

That way, when we're applying the cryoprobe and the freeze is in place, we have much less chance of accidentally or inadvertently hitting lung parenchyma.

So we've used this cryotherapy now in other types of thoracic procedures, either minimally invasive or open, such as lobectomy or re-operative chest surgery.

And I do think it could also be applied to re-operative or even primarily operative cardiac surgery.

So MUSC is the first in our area to use it.

However, it's a technology that's sound and proven and is widely available across the United States.

However, its application into the world of pediatric surgery is fairly new, and we're excited to offer that technology here.