GODDARD PRODUCT DEVELOPMENT | Arthrex®

CASE STUDY

MIS Hip Distractor System

The Challenge

Arthrex's minimally invasive hip distractor was a workhorse of anterior hip replacement, a procedure prized for reducing tissue damage and shortening recovery. But the legacy system was undermining the very outcomes it was meant to enable. Surgeons reported awkward controls that broke their focus mid-procedure. Operating room teams struggled with inconsistent setup. Most critically, patients were sustaining preventable injuries tied to the device's restraint mechanism.

Arthrex needed more than incremental fixes. They needed a redesign that would protect patients, restore surgeon confidence, and scale cleanly into manufacturing without losing the brand presence that had earned the system its place in their orthopedic suite.

The Approach

Goddard Product Development began where the problems lived: in the operating room. Over two years, Goddard's engineers and industrial designers embedded with Arthrex's clinical team, scrubbing into procedures and observing the full surgical workflow alongside surgeons and supporting staff. Watching the device fail in real time and watching teams work around those failures surfaced the root causes that bench testing alone could never expose.

Three insights drove the redesign.

Patient restraint was a safety problem, not a setup problem.

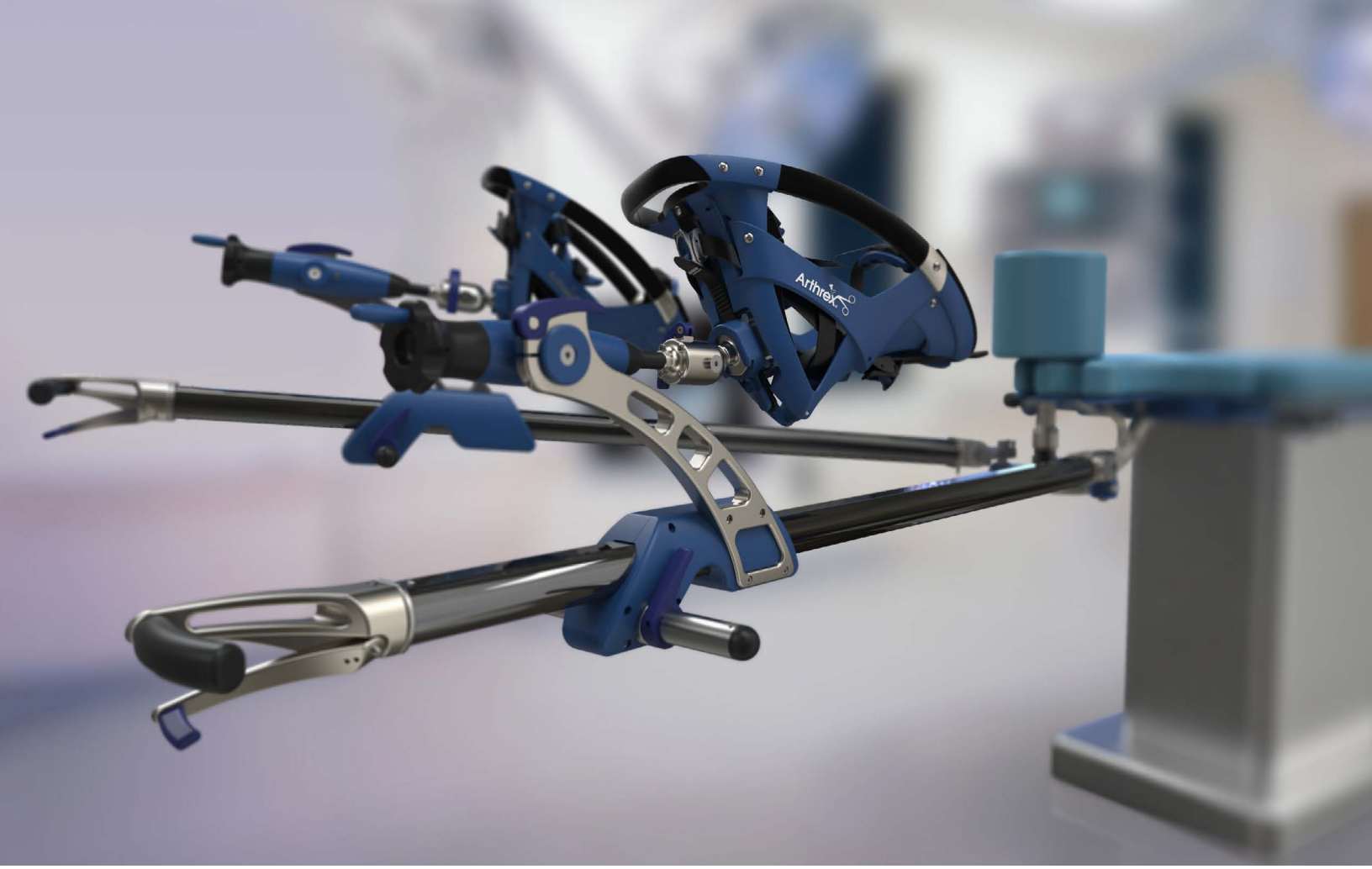
The legacy strapping system depended on consistent application by busy OR teams. Goddard reframed it as an engineering problem and developed a new restraint system that secured patients reliably regardless of who set it up, eliminating a core injury risk built into the original design.

Surgeon focus is the scarcest resource in the OR.

Every two-handed adjustment was a moment of divided attention during a procedure that demands complete concentration. Goddard engineered a one-handed locking control that let surgeons make adjustments without lifting their focus from the patient, paired with fine rotational adjusters and an integrated safety lock for precise, reliable distraction.

Form had to earn its place alongside function.

Goddard's industrial design team shaped every contour and interface to feel intuitive under gloves and stress, while aligning visually with Arthrex's broader surgical suite as a recognizable, premium presence in the OR.



From Engineering to Production

With the design validated, Goddard Product Development applied design for manufacturing and value engineering principles to optimize the system for scale. The result was a device that performed reliably in surgery, manufactured efficiently at volume, and held its cost structure through commercial launch.

The Outcome

The redesigned MIS hip distractor enabled the anterior surgical approach to operate the way it was meant to: with reduced tissue dissection, improved recovery, and the surgical precision the technique requires. Surgeons adopted it quickly. It became the best-selling hip distraction system in its class and remains a flagship product in Arthrex's orthopedic portfolio.

The work demonstrates what becomes possible when product development starts in the operating room rather than the conference room, and when engineering, industrial design, and manufacturing strategy are treated as a single discipline.