Cataract Surgery | Inside the OR

(0:07 - 0:20)

Hi, I'm Surendra Basti. I'm the director of the cataract service at the Department of Ophthalmology, Northwestern Medicine. Today, we're going to perform femtosecond laser-assisted cataract surgery.

(0:21 - 0:55)

And Northwestern Medicine was among the first academic departments in the nation to adopt this exciting technology. So today, join me for this edition of Inside UR. Today's procedure is expected to take us less than an hour.

(0:56 - 1:19)

The first part is done with a femtosecond laser, where the patient is very much awake, but the eye is fully anaesthetized. And the second part of surgery is done in the operating room, and that's expected to take about 30 minutes. So the laser takes an image of the eye and then takes a cross-section of the eye.

(1:20 - 1:45)

And the measurements permitted to programme the laser so that it can accurately do the surgical steps. The laser just opened the cataract, and it's now dividing the cataract into six pieces. And in just a moment, it will create the incision in the eye.

(1:48 - 1:57)

So the laser part's done. What we're going to do is mark the eye before we go to the next room. Your eye is anaesthetized, so you're not going to feel this.

(1:57 - 2:11)

I'm just coming next to the eye to make what we call reference marks. So the rest of the surgery we'll do in the operating room, and we're ready to head there now. So inside the eye, all of us have a structure called the lens.

(2:12 - 2:29)

And when the lens begins to get cloudy, that's what we call a cataract. So cataracts commonly occur in people in their 70s and 80s. However, genetics, UV light, cigarette smoke, steroid medications, these are risk factors for cataract formation.

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So the laser opened the cataract in a very circular manner. And I'm just moving the cataract around, and that makes cataract removal a lot easier for us. So we have these ridges created by the laser here, those ridges perimeters, to very easily divide the cataract into six pieces.

(2:56 - 3:17)

And so gentle suction and small amounts of ultrasound, we will suck out the cataract that's been broken by the laser. The cataract's been completely removed. And what you can see here is a round opening which makes my placement of the lens very precise.

(3:18 - 3:34)

So the Callisto device is prompting us to place the lens in the direction of the blue line. I'm just going to make what we call as a reference mark that I can use when I actually place the lens. The lens is made of a material called acrylic.

(3:34 - 3:52)

And acrylic has been observed in the human eye for over 70 years now. So it's going to stay in the human eye for a human lifetime. Some of us look at it as a legacy that we literally leave behind from what we do for the patient to enjoy for the rest of their life.

(3:53 - 4:07)

The cataract has an outermost covering called the capsule. And the artificial lens is actually going back inside the capsule. So essentially, the lens is going in the same location where the cataract was.

(4:07 - 4:37)

We're using this intraoperative guidance system here to perfectly align the lens at the three dots, indicating where the astigmatic correction is. It's nicely aligning and overlapping with the blue line created by the Callisto device. We're now going to check all the incisions, make sure the eye is like we want it to be, with the tissues looking physiologic, and also the incisions looking very strong.

(4:38 - 5:00)

After the surgical procedure, the eye feels a little scratchy and teary perhaps for a couple of days. The patients are able to begin to see improvement in vision within a day. And details of objects and high quality vision is restored in the first one to three weeks after the surgical procedure.

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So we expect the patient to make a good recovery. She was nearsighted her whole adult life.

And I expect starting tomorrow that will change permanently.

(5:11 - 5:21)

She'll have a very broad range of vision even without eyeglasses. And hopefully that will serve her well for the rest of her life. Thank you for joining me for this edition of Inside the OR.