RAJNI SETHI: Brachytherapy is a specialized way of giving radiation treatments where we can radiate the tumor from inside. And when you're giving high doses of radiation, such as used in for example cervical , cancer, or prostate cancer, that can lead to a lot of toxicity. With brachytherapy we can actually implant hollow needles, and send a radioactive source inside those needles, and radiate the tumor from inside. And this allows us to give a very high dose. Which results in excellent control rates. While minimizing the toxicity of the treatment.

For gynecologic tumors in particular for cervical cancer patients, brachytherapy is a critical component of maintaining local control. You really need that extra boost of high dose radiation to control the tumor. And we've shown that with interstitial brachytherapy, even with very advanced cervical cancers, control rates are as high as 95%.

The other situation where we're using it here is for prostate cancer. And interstitial brachytherapy in particular high dose rate brachytherapy is in comparison to historically patients might have prostate seeds implanted. And prostate seeds emit radiation, but once they're inside the patient they stay where they were placed. And you're kind of stuck with that dose distribution. The really neat thing about interstitial high dose rate brachytherapy for prostate cancer is that once the needles are in place we have a lot more ability to modulate the dose within the prostate. And you can get a very nice do is distribution, and you can protect some critical structures to prevent long term toxicity. And again, having really great long term control rates, and for prostate cancer we can use high dose rate brachytherapy by itself for some lower risk patients. Or we can use it after external beam radiation for some higher risk patients.