

Developing new surgical [instruments](#) is challenging. While making surgical instruments could be a good field of application for [3D printers](#), attempts to do so have proven limited.

Yang et al. designed a new [endoscope-assisted spine surgery](#) system, and using a 3D printer, attempted to create a complex surgical instrument and to evaluate the feasibility thereof. Developing the new surgical instruments using a 3D printer consisted of two parts: one part was the creation of a prototype instrument, and the other was the production of a patient model.

They designed a new endoscope-assisted spine surgery system with a [cannula](#) for the endoscope and working instruments and extra cannula that could be easily added. Using custom-made patient-specific 3D models, they conducted discectomies for paramedian and foraminal discs with both the newly designed spine surgery system and conventional [tubular](#) surgery. The new spine surgery system had an extra portal that can be well bonded in by a magnetic connector and greatly expanded the range of access for instruments without unnecessary bone destruction. In a foraminal discectomy, the newly designed spine surgery system showed less [facet](#) resection, compared to conventional surgery.

They were able to develop and demonstrate the usefulness of a new [endoscope-assisted spine surgery system](#) relying on 3D printing technology. Using the extra portal, the usability of endoscope-assisted surgery could be greatly increased. They suggested that 3D printing technology can be very useful for the realization and evaluation of complex surgical instrument systems ¹⁾.

¹⁾

Yang HS, Park JY. 3D Printer Application for Endoscope-Assisted Spine Surgery Instrument Development: From Prototype Instruments to Patient-Specific 3D Models. Yonsei Med J. 2020 Jan;61(1):94-99. doi: 10.3349/ymj.2020.61.1.94. PubMed PMID: 31887805.

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