

Intrathecal Drug Delivery Device Complications

[Intrathecal Drug Delivery Devices](#) have been shown to greatly improve the [quality of life](#) for [patients](#), they also have a high [perioperative complication](#) and [failure rate](#).

[Intrathecal drug delivery](#) systems (IDDS) utilizing [opioids](#), especially [morphine](#), but also other agents including hydromorphone, fentanyl, tramadol, sufentanil, methadone, baclofen, clonidine, and ziconotide have been associated with granulation tissue. Non drug delivery devices have also been implicated, including: lumbar shunts, ventricular shunts, and spinal cord stimulators.

The intrathecal space remains underutilized for diagnostic testing, invasive monitoring or as a pipeline for the delivery of neurological therapeutic agents and devices. The latter including drug infusions, implants for electrical modulation, and a means for maintaining the physiologic pressure column. The reasons for this are many but include unfamiliarity with the central nervous system and the historical risks that continue to overshadow the low complication rates in modern clinical series.

The intent in a review of Nagel et al., was to explore the access devices currently on the market, assess the risk associated with breaching the intrathecal space, and propose a research model for bringing to patients the next generation of intrathecal hardware. For this purpose, they reviewed both historical and contemporary literature that pertains to the access devices and catheters intended for both temporary and permanent implantation and the complications thereof.

There are few devices that are currently marketed in the United States or Europe for intrathecal use. Most hew to a relatively fixed design pattern predicated on the dimensions and properties of the thecal sac. All are typically composed of soft silicone, and employ a Tuohy needle for access despite design limitations. In general, these catheters are engineered for durability, ease of use, and regional deployment. Devices on the market with steerability or targeted intrathecal fixation are not yet available. Complications, once a legitimate concern, are now quite rare when recommended techniques are followed.

Over the next decade, advances in [intrathecal catheter](#) design, access techniques, imaging, and greater understanding of the spinal cord neurophysiology will usher in an era where the intrathecal space is recognized as a highly valued diagnostic and therapeutic target. We anticipate that this will occur in several concurrent phases, each with the potential to accelerate the growth of the others ¹⁾.

Intrathecal Drug Delivery Device infection

see [Intrathecal Drug Delivery Device infection](#).

Unclassified

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